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TRANSFORMING EVOLUTIONARY NEUROSCIENCE

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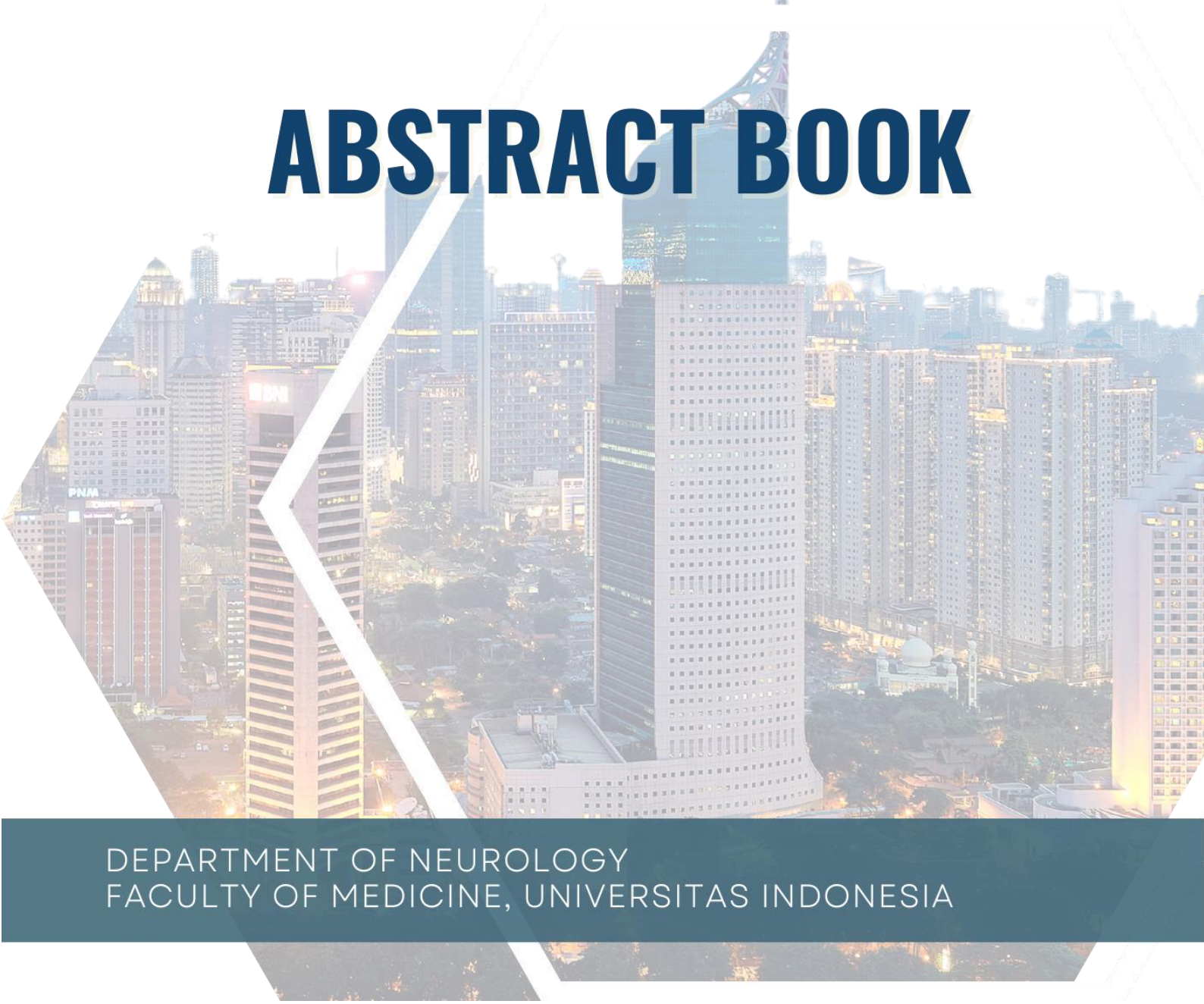
ABSTRACT BOOK



DEPARTMENT OF NEUROLOGY
FACULTY OF MEDICINE, UNIVERSITAS INDONESIA

Content

Foreword

Thank God for the presence of Allah SWT for His grace and guidance on all of us so that we can publish the abstract book for the 10th Jakarta Neurology Exhibition, Workshop and Symposium (JakNEWS), themed Transforming Evolutionary Neuroscience (TEN). This prestigious event was organized by the Department of Neurology FKUI in collaboration with PERDOSSI JAYA in March 2023.

It has been a decade since JakNEWS has increasingly developed knowledge and scholarship, especially in neurology. Research articles and case reports are, of course, essential aspects of the knowledge pillar. JakNEWS supports this process by providing a place for all writers to publish their writings and participate in developing knowledge. This book will provide many benefits and add to our knowledge of neurology. Finally, healthy greetings, and see you in success.

Warmest Regards,

Ramdinal Aviesena Zairinal, MD
Chairman of Organizing Committee

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ID_1 Research

Bell's Palsy as A Potential Predictor of Stroke Development: A Mini Systematic Review

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Abstract

Background
Infection of Herpes simplex virus (HSV) and Varicella zoster virus (VZV) are known as the etiology of Bell's Palsy, has a role in the occurrence of vasculopathy, which is related to stroke. Emerging evidence showed that Bell's Palsy may be an unrecognized risk factor for stroke, in spite of unclear correlation. In this review, we aim to elucidate the potential of Bell's Palsy to be a clinical predictor of stroke development.

Method
We conducted structured search for cohort study with PUBMED and Google Scholar search engine, between December 2012 and December 2022. Two examiners independently screened and tested the eligibility of the studies.

Result
Three cohort studies comprising of 453.698 subjects met the requirements for analysis. Bell's Palsy has a hazard ratio (HR) (1,19-2,02) for the stroke development, within 2,9-12 years.

Discussion
Two of three studies showed a significant relationship between Bell's Palsy for stroke development, especially ischemic stroke. But not in another one. Differences between the results may be due to differences in location, total subject, and duration of observation time.

Conclusion
Bell's Palsy can become potential clinical predictor for stroke development. Further research is still needed to establish it in clinical use.

Keywords: Bell's Palsy; Stroke; Morbidity

ID_2 Case Report

Malignant Middle Cerebral Artery Infarct as A Complication of Cardioembolic Infarct Involving Proximal Middle Cerebral Artery

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Abstract

Background

The Middle Cerebral Artery (MCA) is the most common artery involved in ischemic stroke. It supplies vast brain territories. An occlusion involving its proximal branch gives rise to a complication called Malignant MCA Infarct (MMCI) which warranted poor outcomes. In this case, we present an unfortunate case of a patient with MMCI.

Case Summary

Mrs. U, a 79-year-old female patient, presented with a sudden onset of confusion and weakness in the right extremities. Her family members stated that she was well until she fell from bed at the onset. She was rushed to the Emergency Department (ED) and arrived one hour later. No history of headache, seizure, or fever. Past medical history includes hypertension—no medical history of diabetes, dyslipidemia, arrhythmia, or coronary artery disease. Upon arrival in ED, hypertension and irregular heartbeat were noted but she was otherwise hemodynamically stable. The notable initial neurological examination included a GCS score of E4 M4 Vaphasia, right lateralization of upper and lower extremities, right-sided facial droop, right gaze palsy, right hemianesthesia, and right positive Babinski pathologic reflex. A National Institute of Health Stroke Scale (NIHSS) of 29 was obtained. ECG detected atrial fibrillation. An emergent non-contrast head Computerized Tomography Scan (CT Scan) was done approximately 1.5-2 hours after onset. Axial CT slices showed signs of stroke involving the left proximal MCA branch, such as loss of gray and white differentiation in various MCA-supplied regions and a hyperdense left MCA sign. An Alberta Stroke Programme Early CT (ASPECT) score of 3 was obtained. Subacute and chronic infarcts in various regions of the brain were also seen. The patient was given intravenous isotonic maintenance fluid, hyperosmolar therapy, neuroprotector drug, antiplatelets, lipid-lowering agent, and gastroprotective drug. A nasogastric tube (NGT) and urinary catheter were also placed. Decompressive hemicraniectomy (DHC) was offered. Unfortunately, her family decided to opt out of any surgical intervention. On the second day, Mrs. U developed a stress ulcer. She also developed anisocoria pupils and bilateral positive Babinski pathologic reflex. In the subsequent days, her condition deteriorated further. On the 6th day of treatment, she eventually developed a central fever and unfortunately died.

Discussion

The extent of infarction seen on CT and the finding of AF on ECG warranted a cardioembolic stroke. MMCI results from infarction of nearly the whole MCA territory (>50% of the MCA territory on CT scan) which will give rise to massive brain edema, causing rapid neurological deterioration, and massive space-occupying mass. In this patient, death likely resulted from brain herniation. DHC, if done within 48 hours of the onset could significantly increase the survival rate of patients >60 years of age with MMCI, although most survivors will have substantial disabilities.

Conclusion

Patients with MMCI tend to have a poor prognosis, especially when treated conservatively. Rapid detection and aggressive treatment should be done whenever possible.

Keywords : Malignant MCA infarct; Cardioembolic stroke

ID_4 Case Report

Cognitive Impairment as A Neurologic Sequelae Following Viral Encephalitis: A Case Report

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Abstract

Background

Encephalitis is an inflammation of brain parenchyma. Among infectious etiology, virus is the most common causative agent of encephalitis. Despite the improvement of diagnosis and treatment modality, viral encephalitis survivors still suffers from several persistent sequalae such as fatigue, irritability, seizure, hearing and vision impairment. Additionally, many studies have reported symptoms of cognitive impairment including speech disorder, attention deficit, memory, and learning disorder as viral encephalitis sequelae.

Case Summary

A 24-years-old male presented with a generalized tonic-clonic seizure lasting less than 1 minutes. After the seizure, the patient regained consciousness. The patient had experienced recurrent episode of generalized tonic-clonic seizures for the past 3 years, at least once a month of seizure attacks. The very first seizure was provoked by viral encephalitis. Approximately 2 months after the first seizure, the patient was brought to hospital by his parent with complaint of aggressive behavior. The patient was reported to be more irritated, especially when his mother asked him to remain quiet and he tended to destroy things when he was furious. The patient also developed rapidly progressive speech disturbance and cognitive dysfunction 2 months prior admission, after the very first onset of seizure. Before the first seizure, the patient could communicate, finish his senior high school study, and do his job well. However, his condition has worsened gradually since then. The Patient had difficulty maintaining a social life and could not return to work. On physical examination, the patient had a normal level of consciousness. The patient could only respond to other people with inappropriate sounds, could not speak a complete word, and could not follow instructions. Mini-Mental State Examination could not be performed because of patient's inability to follow commands. Therefore, Ascertain Dementia 8 (AD8) screening test was performed. Patient AD8 score was 7, indicating cognitive impairment. Laboratory examination was within normal limit. A Computed Tomography scan of brain revealed perifocal edema on occipitoparietal lobes and mild brain atrophy. The patient was diagnosed with epilepsy and cognitive impairment post viral encephalitis. The patient was treated with phenytoin, clobazam, folic acid, and omeprazole. The patient did not exhibit any seizure episodes during the 5 days of hospitalization and within 7 days of discharge follow-up. The patient is being followed up regularly in the outpatient clinic.

Discussion

Viral encephalitis is associated with long term neurological sequelae, which last months or years following acute infections. In this presented case, the patient developed several neurologic sequelae, including recurrent episodes of seizure, behavioral changes, and cognitive impairment which occur 2 months after resolved from viral encephalitis. Neuronal damage caused by either direct viral infection or by the immune response in attempt to remove infectious agents has been proposed to explain cognitive decline following acute viral encephalitis.

Conclusion

Managing viral encephalitis remains challenging because of its association with long-term sequelae, including cognitive impairment. Hence, regular monitoring should be performed in surviving patient, even those whose acute symptoms are apparently resolved at hospital discharge.

Keywords : Viral encephalitis; neurologic sequalae; cognitive impairment

ID_5 Case Report

Approach to Diagnosis and Management of Cerebral Malaria in Remote Area

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Abstract

Background

Plasmodium falciparum infection can cause Cerebral Malaria (CM), a neurological complication that typically presents as altered consciousness that could develop into seizures, coma, and death. CM can be fatal; therefore, aggressive therapy is required to be initiated immediately after the diagnosis is made.

Case Summary

A 15-year-old girl was presented with decreased consciousness for the last four hours. Previously, she had seizures that occurred twice with an interval of one hour which stopped spontaneously after 15 minutes. After the second seizure, the patient was unresponsive. She also had a fever for 5 days, along with headache, muscle-soreness and decreased appetite. She did not take any medications during this illness. Neck stiffness, jaundice, spontaneous bleeding, and a history of epilepsy were denied. On physical examinations, she had Glasgow Coma Scale of E3M4V2 and was febrile (39°C). Neither Kernig's nor Budzinski's signs were positive, and her pupils were equally reactive and equal in size (3 mm/3mm). Laboratory findings were significant with anemia (5.8 g/dL), leukocytosis (11.460/µL), thrombocytopenia (27.000/µL), and hypoglycemia (65 mg/dL). Her Peripheral blood smear showed trophozoites of plasmodium falciparum (++++) with gametocytes; dengue-IgM/IgG test was negative. 30 minutes after admission, she had another tonic-clonic seizure for ten minutes, which stopped after phenytoin was administered. She was admitted into the ICU and treated with artesunate, phenytoin, ceftriaxone, and dexamethasone. She had whole-blood transfusions for three days. On the third day she was fully conscious; therefore, the antimalarial was switched into oral dihydroartemisinin-piperaquine (DHP) and primaquine. On the 5th day, no malarial parasites were found and she was transferred to the ward with hemoglobin of 10.3 g/dL and platelet of 82.000/µL. She was discharged on the seventh day without any neurological deficits.

Discussion

The manifestation of CM may develop after 2 to 7 days of fever, which is accompanied by an altered level of consciousness and/or coma with other symptoms including rigidity or seizures (mostly tonic clonic seizures). Usually, in pediatric CM the coma develops rapidly, and seizures are more common. Whereas in adults, the coma develops gradually but lasts longer. Decreased consciousness in CM might be due to covert status epilepticus, prolonged post-ictal, or severe metabolic disturbances. In addition, during the diagnostic process, other causes of central nervous system infection and the possibility of patients with false CM (in whom coma has other causes and parasitemia is incidental) should be considered. Therefore, it is suggested to perform a lumbar puncture to exclude other pathologies. Patients with CM should be immediately treated with parenteral antimalarial treatments. Intravenous/intramuscular artesunate is the first-line therapy in severe malaria, including CM, and should be administered at least for 24 hours until oral administration can be initiated.

Conclusion

The Pathogenesis of CM is due to damaged vascular endothelium caused by parasite sequestration and inflammation. Without treatment, the fatality rate of CM is nearly 100%. Even after effective antimalarials and proper supportive treatments, the mortality remains high, at 10%-20%. Therefore, falciparum malaria patients who present with any degree of neurological involvement with the exclusion of other causes, should immediately be treated as CM.

Keywords : cerebral malaria; falciparum malaria; seizures; severe malaria

ID_6 Case Report

Clinical Manifestation of Dialysis Dysequilibrium Syndrome With A Suspected Case of Hemorrhagic Stroke in End-Stage Renal Disease

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Abstract

Background

Dialysis Disequilibrium Syndrome (DDS) is defined as the development of acute neurological symptoms due to cerebral edema and increased intracranial pressure (ICP) during or after dialysis. Meanwhile, coagulation abnormalities and platelet dysfunction may put end-stage renal disease (ESRD) patients at an increased risk of bleeding events, including intracranial hemorrhage. These conditions pose challenges to the management of ESRD patients.

Case Summary

A 57-year-old woman presented in our emergency department with a history of sudden onset decreased consciousness for 30 minutes. She was known for a case of ESRD due to hypertension for a year and was on regular dialysis for 2 weeks. At the time of presentation, the patient had just completed her dialysis 4 hours prior, with blood urea level before dialysis was 101mg/dL and creatinin was 5,4 mg/dL. After dialysis, her blood urea level was 65 mg/dL and creatinine was 4,9 mg/dL. The patient reported having mild headaches and nausea during and after the dialysis procedure. The patient's blood pressure was high, reaching 211/110 mmHg, heart rate was 130 times per minute, and respiration rate was of 40 times per minute. The patient's Glasgow Coma Scale was Eye 2 Verbal 3 Motoric 4, with pupillary asymmetricity of 3 mm on the right pupil and 5 mm on the left pupil, marked right side decreased of limbs movement and confirmed by knee dropping test, increased tendon reflexes of the right limbs, and positive Babinsky's sign on the right foot. The patient was diagnosed with suspected intracranial hemorrhage with Dialysis disequilibrium syndrome (DDS). The patient was sedated and ventilated, given diuretics, and the referral system was activated due to the lack of CT scan facility.

Discussion

DDS is more likely to occur during or shortly after initial treatment but can occur in any patient undergoing hemodialysis. Symptoms that affect the nervous system can range from headaches, nausea, vomiting, blurred vision, and muscle spasms to more serious symptoms such as altered mental status, coma, seizures, and death. Because these symptoms are not unique to disequilibrium syndrome, the other diagnoses should be considered and ruled out. However, the exact etiology of DDS is unknown, but several hypotheses were proposed. The reverse urea effect suggests that urea was cleared more slowly from the spinal fluid than from the blood during intermittent renal replacement therapy, with a rapid decrease in plasma urea accompanied by delayed urea clearance in the brain, creating an osmotic gradient across the plasma and brain causing brain edema.

Conclusion

This case presents a unique dilemma associated with neurocritical care in ESRD patients. Healthcare providers should be aware of DDS and its possible aggravating effects on patients who are at risk or already have intracranial lesions. Elevated ICP may occur during intermittent hemodialysis, suggesting that the continuous dialysis modality may offer some protection against this complication. Continuous ICP monitoring is essential so that intervention for DDS can be detected promptly. Education to caretakers about these complications should be improved along with the understanding of hospital facilities and a better referral system to accommodate the best management.

Keywords : Dialysis disequilibrium syndrome, intracranial hemorrhage, end-stage renal disease

ID_7 Research

Characteristics of Primary Headache in Co-Assistant of Neurology at Prof Dr. R.D. Kandou Hospital Manado

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Abstract

Background
Headache is the most common complaint and a major health problem in all age groups. The most common primary headaches are migraine, tension-type headache, and cluster headache. Age of onset and family history of headache should be explored to look for predisposing and precipitating factors in the patient's history. Stress is related to headache whereas stress can act as a trigger for headaches and modify or worsen the intensity and duration of headaches. Stress and a stressful life can also increase the frequency of headache attacks, eventually resulting in a chronic form of headache. On the other hand, headaches themselves can be a stress-increasing factor.

Method
This research was conducted on all of the Co-Assistant in the Neurology Departemen of Prof. Dr. R.D. Kandou Hospital Manado from June to October 2022 using a descriptive method amounted on 119 people using a headache questionnaire according to PERDOSSI and the IHS classification.

Result
108 people met the criteria, 65% women and 35% men in the adolescents (86%) and early adulthood (14%), there were 48% people who had family history of headache, with the precipitating factor were being lack of sleep (79%), emotions/stress (72%), exhausted (55%), environmental changes (22%), PMS/menstruation (19%), food (12%). The types of primary headaches were tension type headache (TTH) (73%), migraine without aura (19%), migraine with aura (6%), cluster headache (2%). A total of 60% were mild degrees, 38% moderate degrees and 2% severe degrees.

Discussion
The frequency of night shifts can reduce the length of sleep time with poor sleep quality which will cause exhaustion. Sleep duration less than 6 hours per day is a triggering factor for headache frequency. Stress causes respiratory hyperventilation resulting in a decrease in CO2 levels in the blood and alkalosis resulting in calcium ions entering the cells and causing excessive muscle contractions resulting in headaches. TTH is the most common with a prevalence of up to 80% in the general population which belong to mild headaches.

Conclusion
Lack of sleep and stress are the most common triggers for headaches. The most common type of headache was tension-type headache with mild headache distribution, while the least was cluster headache.

Keywords : Primary Headache; Tension type headache; Co-assistant; Stress; Lack of sleep.

ID_8 Research

Profile of Headache Patients Using a Headache Diary at the RSCM Neurology Clinic

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Abstract

Background

It is very important to know the characteristics of headaches for diagnosis and management. The International Headache Society (IHS) recommends a Headache Diary (HD) to monitor headaches and their response to treatment. The HD component consists of headache characteristics, response to therapy, as well as precipitating factors, and the impact on daily activities. However the success of using HD and the factors that influence it has not been known. This study was made to know the percentage and profile description of headache patients who carry HD in patients at the Neurology Polyclinic of Cipto Mangunkusumo Hospital (RSCM).

Method

A cross-sectional study of headache patients who came to the RSCM Neurology Clinic in January December 2022. Patients indicated for HD are patients with primary or chronic headaches or those who require diagnosis and prophylactic therapy. The patient was asked to bring the HD to the next visit, then the diagnosis was determined, changes in the frequency, duration, and intensity of headaches, as well as the response to treatment in the form of giving/changing abortive/prophylactic therapy. Patients who brought HD back during control were grouped as adherents and their characteristics and factors that led to adherence were assessed.

Result

The study involved 80 subjects with an average age of 40.6 ± 12.3 years which were dominated by women (87.5%), with the most onset of headaches are chronic 81.3%, and migraine types dominated at 55%. Of the 80 subjects who were given HD, only 55% were obedient at the 3rd visit, dominated by women 55.7%, educational status > 9 years 54.4%, did not work 57.6%, the majority types of migraine headaches 60 .4%, chronic onset 52.3% and prophylactic therapy 58.1%. Of the 44 subjects who adhered to HD, 59.1% of subjects received additional prophylaxis and 36.4% experienced an improvement in headache duration.

Discussion

HD indications are especially for migraine-type primary headaches, as in this study (55%), as well as chronic headaches (81.3%) which are generally young women (87.5%) (mean 40.6 ± 12, 3 years). Subjects experienced improvements in the duration of headaches and therapy after using HD, by the purpose of HD as a tool for diagnosing and monitoring headaches.

Conclusion

It was found that 55% of adherent subjects brought HD at their next visit, the majority of which were migraine types (60.4%), chronic onset (52.3%), and received prophylactic therapy (58.1%).

Keywords : headache, headache diary, monitoring therapy

ID_9 Research

Characteristics of Lacunar vs Non-Lacunar Ischemic Stroke at Harapan Magelang Hospital in 2022

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Abstract

Background

Stroke is the number one cause of disability and the third cause of death worldwide after heart disease and cancer. The prevalence of stroke in Indonesia in 2018 was 10.9% or around 2.120.362 people based on the Ministry of Health Republic of Indonesia in 2018. The incidence of ischemic stroke in developing countries or Asia for ischemic stroke is around 70% and hemorrhagic stroke is 30%. Stroke can attack all blood vessels in the brain, one of the arteries that can be attacked is a small artery, called a lacunar stroke. This type of stroke is a type of ischemic stroke caused by occlusion of the small deep penetrating branches of the cerebral vessels from the circle of Willis. Most lacunar strokes are often neglected because involvement of small vessels results in small infarcts. However, the accumulation of multiple small lacunar infarctions can lead to cognitive and physical disability.

Method

The research design is a descriptive-analytic study using a cross-sectional research design. Data was obtained from the Medical Records of inpatients with a diagnosis of ischemic stroke taken from the My Hospital program from 1 January 2022 to 31 December 2022, and a total of 125 patients were obtained. Data on lacunar ischemic stroke (LIS) and non-lacunar ischemic stroke (NLIS) were obtained from a Head CT scan. The researcher collects independent data such as gender, age, smoking, Diabetes Mellitus, Hypertension, lipid profile, uric acid levels, blood sugar levels, blood pressure and neurologic symptoms. The data is processed with the SPSS program. Data analysis was stated to be significant if p

Result

A total of 125 data, there were 53 patients (42.4%) experienced LIS and 72 patients (57.65) experienced NLIS. Analysis of data categories that differed significantly were motor deficit ($p = 0.047$) and headache ($p = 0.009$). Numerical data analysis found that the results of laboratory tests lipid profile, uric acid, and blood sugar levels did not show a significant difference between LIS and NLIS ($p > 0.05$).

Discussion

In this study, risk factors for ischemic stroke such as high lipid profile levels, smoking, hypertension, and diabetes mellitus have no difference significantly between LIS and NLIS. Neurological deficits have no difference significantly although lacunar ischemia affects a relatively small area of the cortex. Patients sometimes don't realize the symptoms of mild neurological deficits even though it is one of the alarm signs of an ischemic stroke. This study has limitations in the number of patients, so it is necessary to collect more patient data. The MRI gold standard for diagnosing LIS also cannot be done at Harapan Hospital.

Conclusion

Lacunar and non-lacunar ischemic strokes have the same risk factors, but more clinical symptoms are found in patients with non-lacunar strokes. Significantly different symptoms from this study were motor deficits and headaches.

Keywords : Ischemic stroke, lacunar stroke, non lacunar stroke, stroke risk factor

ID_10 Case Report

Drop Foot as Manifest of Postural-Induced Peroneal Neuropathy

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Abstract

Background

Drop Foot is a weakness of the extensor muscle and dorsiflexor of the foot. An injury of the Upper Motor Neuron or Lower Motor Neuron, radiculopathy, or per oneal nerve injury can cause this weakness. Peroneal neuropathy is the most common compression neuropathy of the lower extremity. Drop foot can be induced by postural.

Case Summary

The patient is a boy, a student, and 12 years old. He came to the hospital with a chief complaint of weakness in his left ankle 3 days before he came to the hospital. During the past 2 months at school, he sat down cross-legged on the floor and wore shoes. He studied at school every day for 7 hours in cross-legged pose and not being allowed to straighten his legs. Weakness was accompanied by a tingling sensation that momentarily arose. Neurologic examination revealed some important information: left dorsoflexion motoric muscle strength was 2, left disuse atrophy, and left physiologic reflex was +1. ENMG result was KHS and needle EMG showed left axonal peroneal nerve lesion and denervation. Supporting depiction of left peroneal nerve lesion (axonotmesis) as high as fibular head. In order to manage this patient, avoid sitting in the same position and have medical rehabilitation.

Discussion

Drop foot is defined as a significant weakness of the foot and dorsiflexion ankle. Various kinds of drop foot etiology, such as neurologic, muscle, body posture, and compartment syndrome. Several body posture types as sitting down with cross-legged pose, sitting, squatting, and lying down can yield compression of the peroneal nerve. A habit of sitting down in a cross-legged pose can cause a drop foot. The most common compression site is at the fibular head.

Conclusion

In this case, we observed a compression trauma to the peroneal nerve at the fibular head caused by wrong body posture (sitting with a cross-legged pose) over a long period. The fibular head is the most common site of compression because the common peroneal nerve runs superficially in this area.

Keywords : Drop foot; peroneal nerve; postural

ID_11 Research

Infographic of Tetanus Patient Admitted to A Secondary Hospital in Indonesia

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Abstract

Background

Tetanus is a nervous system disorder characterized by muscle spasms that are caused by the toxin producing anaerobe Clostridium tetani. Patients with tetanus present with a descending pattern of muscle spasms, first presenting with lockjaw. This may progress to a stiff neck, difficulty swallowing, rigid pectoral and calf muscles, seizure, autonomic instability, and even result in early death. The main livelihood of Brebes residents is farming. Farmers are more prone to be wounded by dirty objects, the leading factor associated with tetanus. They also have poor wound management due to their low educational status. This study is directed to present and discuss an infographic of tetanus patients in Brebes General Hospital from January to December 2022. From this study, we also acknowledge the patient's background, seizure incidence, source of infection, incubation period, severity of tetanus, and cause of death.

Method

This research is an observational study, samples are all tetanus patients admitted to Brebes General Hospital from January to December 2022.

Result

From January to December 2022, we collected a total of 20 patient's diagnosed with Tetanus. Among the 20 patients, 10 patients were discharged from the hospital and continued as outpatients, 9 patients were declared deceased, and 1 patient demanded discharge against medical advice. 10 patients who were declared cured consisted of Grade I: 2 patients, Grade II: 6 patients, and Grade III: 2 patients, while 9 patients who were declared deceased consisted of Grade III: 7 patients, and Grade IV: 2 patients. Only 1 out of 10 patients who were discharged from the hospital had an episode of seizure, compared to 7 out of 9 patients who were declared deceased.

Discussion

Based on our study, patients who did not present clinically with seizures have a higher survival rate than those patients who present seizures because tetanus toxin interferes with the release of neurotransmitters and blocks inhibitor impulses. Generalized muscle spasms were associated with back arching spasm (opisthotonus) that may lead to respiratory distress, and eventually, respiratory failure, where based on our findings, 7 out of 9 patients who were declared deceased had a cause of death by respiratory failure. The main cause of infection was puncture wounds, where 18 patients were wounded by dirty or rusty sharp objects and often their equipment such as nails and hacks. The patients were mainly farmers with low educational status.

Conclusion

Patients who did not present clinically with seizures, have a higher survival rate than those patients who present seizures. Patients with a shorter incubation period were associated with more severe disease, the worst complications, and a higher mortality rate.The patient that was collected are all farmers with low educational status, and they did not seek nor apply proper wound care after being wounded.This study recommends that it is important to pay more attention and give proper education to farmers in Brebes district to prevent and reduce the mortality rate of tetanus.

Keywords : tetanus, seizure, vaccine, wound

ID_12 Research

Frequency of Seizures and Epilepsy after Posterior Reversible Encephalopathy Syndrome: A Systematic Review

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Abstract

Background

Posterior reversible encephalopathy syndrome (PRES) is a clinical radiographic syndrome with varied clinical manifestations. Seizures were among the most common symptoms, reported in up to 70% of PRES cases. Yet, data regarding the frequency of seizures and epilepsy after PRES is still scarce, whereas this data could assist a physician in determining the duration of antiepileptic drugs (AED) needed. Thus, this review aimed to systematically examine the frequency of unprovoked seizures and epilepsy after PRES.

Method

This systematic review is reported following the Preferred Reporting Items for Systematic Review and Meta-Analyses (PRISMA) 2020. A literature search was conducted on studies from January 2000 to December 2022 on five databases with keywords included "seizure" OR "epilepsy" AND "PRES". Case series, descriptive, cross-sectional, and cohort studies that reported the prevalence of seizure and epilepsy following PRES on all ages were included. Case reports, clinical trials and reviews were excluded. All studies were evaluated using Joanna Briggs Institute's (JBI) checklist. A descriptive approach was used in the analysis, and the median (interquartile range) was used to report the outcome.

Result

A total of seven studies consisting of 1,636 patients were included in this review. Seizures are the most common initial symptoms (54.32%), mainly experienced a generalized tonic-clonic seizure (73.33%). Most patients with seizures received AED (83.94%) for a mean (SD) duration of 6.39 (6.95) months. During a mean (SD) duration of 1.4 (2.3) years of follow-up, the median proportion of patients who experienced unprovoked seizure and epilepsy after PRES were 2.67% (IQR 0%-9.52%) and 2.67% (IQR 0%-9.52%) respectively. While most patients with unprovoked seizures exhibit normal MRI (57.14%) at follow-up, 71.43% of patients with epilepsy experienced changes in MRI findings, mainly the development of gliosis (30%), atrophic changes (20%), or both (20%).

Discussion

Unprovoked seizures may occur following the recovery of PRES, and some patients indeed develop epilepsy after PRES; however, both are infrequently found. One retrospective study on the risk of seizures after PRES found the incidence of seizure was 4.9 per 100 person-years, and a higher risk of seizures was found in patients with PRES compared to stroke patients (HR 2.9; 95% CI 2.5-3.3). One study highlighted those with severe brain damage during the acute phase mainly led to the development of epilepsy. Gliosis is emphasized as the most common MRI change found in patients with subsequent epilepsy in this study. The presence of gliosis is known in the human epileptic brain, in which areas within or very near gliotic brain tissues frequently initiate seizures. Most patients were given AEDs; however, the optimal duration of therapy is uncertain. Two studies gave AEDs for one year, while the other gave it for under six months. Further research is needed to determine the duration of AED administration.

Conclusion

This systematic review found that unprovoked seizures and epilepsy after PRES are infrequent, with the implication the use of long-term AED can be reconsidered. This data can help further research on similar topics.

Keywords : seizure; epilepsy; posterior reversible encephalopathy syndrome; gliosis; antiepileptic drug

ID_13 Case Report

A Rare Case Report: Seizures in Sturge Weber Syndrome with Bilateral Hemispheres Involvement

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Abstract

Background

Sturge Weber Syndrome (SWS) is a rare, non-hereditary congenital disorder that affecting the brain, eyes, and skin characterized by facial skin angioma called Port-wine stain (PWS) and leptomeningeal angioma. Distribution of PWS is usually unilateral. Seizures generally occur since the first year of life. Initially, seizures are responsive to anticonvulsant drugs, but they may progressively become recalcitrant to anticonvulsants. We report a rare case of seizures in SWS with clinical presentation of bilateral leptomeningeal and port-wine stains.

Case Summary

A-23-year old male came to the neurology outpatient department for routine control of seizures multiple episode. Seizures occur about every 2-3 months, especially when the patient has a fever, cough, common cold, lack of rest, or an illness. Physical examination found angiomas on the right and left faces located in the distribution of the ophthalmic (V1) and maxillary (V2) branches of trigeminal nerve. CT Scan in 2019 showed cortical gyrus calcification on the bilateral parietal lobes, while MRI in 2022 revealed cortical gyrus calcification on the bilateral parietooccipital lobes. The patient received anticonvulsant drugs since the first seizure with gradually increasing.

Discussion

Seizures generally are the first neurological manifestation in SWS, and PWS as a skin manifestation usually distribute unilaterally in the ophthalmic (V1) and maxillary (V2) branches of trigeminal nerve. In this patient, PWS occurred bilaterally. Diagnosis of SWS is based on clinical manifestations and neuroimaging. Leptomeningeal angioma cause calcification on underlying cortical tissue. Gyrus calcification is a common feature in neuroimaging with tram track line appearance as a pathognomonic. In this patient there is an involvement of bilateral hemispheres. CT scan showed cortical gyrus calcification on the bilateral parietal lobes and MRI showed cortical gyrus calcification on the bilateral parietooccipital lobes. Bilateral SWS is rare and little is known about the course and progression of this variant. The main treatment for SWS is to reduce and control seizures activity. Surgery is an option in patients who do not response to anticonvulsant drugs, but is contraindicated in patients with both hemispheres involved, so the surgery could not be performed in this patient

Conclusion

SWS is characterized by a leptomeningeal angioma and port-wine stain which is usually unilateral, but can also occur bilaterally. Administering appropriate anticonvulsant drugs and preventing external factors that can precipitate seizures is important for patients with involvement of both hemispheres because surgery cannot be performed which is an option in controlling seizures.

Keywords : Sturge Weber Syndrome, Bilateral Leptomeningeal Angioma, Bilateral Port Wine Stain

ID_14 Case Report

Acute Ischemic Stroke due to Hypercoagulation Induced by Horizontal Semicircular Canal Benign Paroxysmal Positional Vertigo: A Case Report

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Abstract

Background

Undetermined etiology only accounted for 3% of acute ischemic stroke (AIS) cases worldwide, one of which was hypercoagulable state. Here we present a case of AIS indirectly caused by dehydration induced by horizontal semicircular canal Benign Paroxysmal Positional Vertigo (HC-BPPV).

Case Summary

A 62-year-old man was brought to the Emergency Department with vertigo, nausea and severe vomiting induced by head movement. He had history of uncontrolled hypertension, type 2 diabetes, and coronary artery disease. At the presentation, he was alert and later became unresponsive (GCS E3M5V2), hypotensive (blood pressure 70/50 mmHg), bradypnea (4 breaths/minute), and hypoxemic (SatO2 89%). The patient was intubated and admitted to Intensive Care Unit. His cardiac and pulmonary functions were normal, while on neurological examination, there was left sided weakness (scale 4 of 5) and positive left Babinski reflex. The laboratory results showed elevated D-dimer (2,399 ng/mL); low pO2 (67.8 mmHg); INR was 1.05; and other laboratory results were unremarkable. The non-contrast brain MRI showed watershed infarction in deep white matter of the right frontoparietal lobe, right putamen, right cortical parietal lobe, and left subcortical parietal lobe. Trans-thoracal echocardiography test was normal while carotid ultrasonography showed mild stenosis at right carotid bifurcation (20.9%) with increased bilateral intima-media thickness (Right 1.02 mm; Left 1.25 mm). The patient was given fluid resuscitation and targeted heparin infusion. At day-4, the patient was awake and successfully extubated. His neurological findings spontaneously resolved. He still complained severe vertigo while turning to both sides. The head-roll test showed horizontal nystagmus with rapid phase to the right (apogeotropic nystagmus). He was treated with betahistine and Gufoni canalith repositioning procedure. All vertigo symptoms resolved on day-10. He was discharged home on day-16 with rivaroxaban.

Discussion

This patient developed watershed infarction due to hypercoagulation caused by untreated HC-BPPV. The incidence of both BPPV and AIS increased with age. Vertigo was one of AIS risk factors. When it was combined with other classic vascular risk factors, including hypertension, diabetes, and coronary artery disease; stroke incidence increased more than 10 times. Furthermore, IMT above 1.1 mm was associated with more chances of residual vertigo symptoms. Fluid resuscitation and emergent anticoagulation were the treatment of choice in hypercoagulation. He responded well and no neurological findings persisted. Gufoni liberatory maneuver was the definitive treatment of HC BPPV.

Conclusion

Ascertaining the etiology of AIS is important to guide secondary prevention agent. BPPV could result to AIS when it appears in elderly patients with multiple vascular risk factors. Correct identification and treatment of BPPV could prevent patient from falling into serious complications.

Keywords : Acute ischemic stroke (AIS); Hypercoagulation; Horizontal semicircular canal benign paroxysmal positional vertigo (HC-BPPV)

ID_15 Case Report

High Risk of Obstructive Sleep Apnea in Hemorrhagic Stroke Patient

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Abstract

Background

Background: Stroke is one of the biggest causes of mortality and morbidity in the world, and about 10% - 20% of them are caused by hemorrhagic strokes. Obstructive Sleep Apnea (OSA) is a sleep disorder that is often found in 5-15% of the general population and has a high prevalence in patients with cerebrovascular disease.

Case Summary

A 51-year-old female patient with a sudden loss of consciousness since 1 day ago, while working to unload sand. The patient has a history of hypertension and has not taken medication since 2014. On computerized tomography scan (CT scan) of the head without contrast show bleeding in the thalamus, intraventricular hemorrhage, and non-communicating hydrocephalus. During hospitalization, it appears that the patient sleeps snoring and easily falls asleep during the day. In addition, there are periods of apnea when the patient sleeps snoring which is witnessed by the doctor and the patient's family. From the results of blood gas analysis, the impression was normal. The patient's sleep score included Pittsburgh Sleep Quality Index (PSQI) 6 (poor sleep quality), STOP Bang 4 (high risk of OSA), Berlin Questionnaire (BQ) 3 positive categories (most likely sleep apnea), Snoring score 5 (high risk) obstructive sleep apnea), and Epworth Sleepiness Scale 11 (mild sleepiness).

Discussion

In the case of a female patient, 51 years old with a hemorrhagic stroke, the symptoms met OSA high risk. In this case, there are several risk factors that influence the emergence of OSA, namely obesity and hypertension. Symptoms that appear in these patients include snoring sleep and there is stopping breathing. The therapy for dividing sleep is to prohibit positioning (sleeping on your side, avoiding sleeping on your back), sleep hygiene, and losing weight.

Conclusion

We have reported a case of hemorrhagic stroke with a high risk of obstructive sleep apnea that was experienced long before the stroke. The high risk of OSA in these patients can be a risk factor for hemorrhagic stroke. Polysomnography examination needs to be done in patients with a high risk of OSA, as the gold standard. Management of these patients apart from giving pharmacological therapy for anti-hypertensive patients, combined with behavioral and positional therapy to treat OSA symptoms. Other treatments such as mandibular enhancement devices and continuous positive airway pressure (CPAP) have not been given to this patient because polysomnography has not been performed and cost constraints.

Keywords : hypertension; hemorrhagic stroke; obesity; OSA

ID_16 Research

Correlation Between The Severity of Parkinson's Disease and The Quality of Sleep Using The Parkinson's Disease Sleep Scale 2 in Parkinson's Patients

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Abstract

Background
Sleep quality is an important parameter that is assessed especially in progressive chronic diseases such as Parkinson's disease. Parkinson's Disease Sleep Scale 2 (PDSS 2) is a measurement tool that is not only for detecting sleep disturbances, but also sensitive for differentiating causative factors that can influence the occurrence of sleep disturbances specifically in Parkinson's disease .

Method
This study used a cross-sectional design in Parkinson's Disease patients at the Neurology Polyclinic of H. Adam Malik Hospital Medan who fulfilled the inclusion criteria during the period December 2022 - January 2023. Assessment of the severity of the disease used the Hoehn and Yahr scale and measured sleep quality using PDSS 2. Data analysis using the Spearman correlation test.

Result
From the 47 Parkinson's Disease subjects, mostly were males (63,8%), mean age of 65,79 years old, with university graduate as the majority of education level (44,7%), civil servants as the majority of profession (31,9%). Stage 2 on Hoehn and Yahr scale as the most common severity level of disease (53,2%), and duration of disease

Discussion
Based on the 3 domains of PDSS 2, the symptom of sleep disturbance that most influences sleep quality in Parkinson's disease is insomnia. Insomnia in the early stages of the disease results from reduced dopamine levels in the substantia nigra. Insomnia in advanced stages of the disease is associated with motor complications such as wearing off, tremors, dystonia and muscle cramps. Other factors are depression, anxiety, duration of levodopa use, and duration of Parkinson's disease. The degree of Parkinson's Disease severity positively correlated with the chance of the patients to developing a sleeping disorder.

Conclusion
There is a correlation between the severity of Parkinson's Disease and the quality of sleep in Parkinson's Disease patients.

Keywords : Degree of Severity, Parkinson's Disease, Quality of Sleep

ID_17 Case Report

Improvement of Neurological Deficit in A Patient with Ischemic Stroke following Thrombolysis Administration: A Case Report

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Abstract

Background

Stroke is the second leading cause of death, with the predominant type of stroke being ischemic (87%) followed by hemorrhagic stroke (13%). Occlusion of a blood vessel in the brain will cause an ischaemic stroke, whether it is caused by a thrombus, as the most common ischaemic stroke compared to an embolism. Most of the symptoms are a slanted mouth, paralysis on one side of the body, slurred speech, impaired balance, impaired coordination to decreased consciousness. Early revascularization with intravenous thrombolysis will restore brain perfusion. We report a rare instance of the acute as well as the complete response of thrombolysis in a patient diagnosed with acute ischemic stroke.

Case Summary

A 70-year-old man came to the emergency room at Murni Teguh Memorial Hospital Medan with the main complaint of weakness of the left side of the body and a slanted left mouth that had been experienced in the past 1 hour before entering the hospital. On physical examination, the level of consciousness: full of awareness, blood pressure: 180/100 mmHg, central type facial nerve left paralyzed, with upper extremity motor strength 55555/11111 and lower extremities 55555/11111, National Institutes of Health Stroke Scale (NIHSS): 11. Laboratory findings: complete blood count, liver and kidney function, electrolytes within normal limits, blood glucose level ad random: 132. Head computerized tomography scan without contrast: normal. The patient was diagnosed with an ischemic stroke. We performed careful observation, fluid therapy, oxygen therapy, and administered antihypertensive drugs, and the patient met the criteria for thrombolysis. The patient was given intravenous thrombolysis therapy with Alteplase 0.6 cc/kg body weight and citicoline 500 mg/12 hours with monitoring every 30 minutes. After 12 hours of monitoring, the neurologic deficit returned to normal. NIHSS: 0. Clopidogrel 75 mg was given for the next 24 hours. After four days of treatment, the patient was discharged.

Discussion

Thrombolysis administration in patients with ischemic stroke shows faster revascularization. Successful initial revascularization is associated with a good outcome. In ischemic stroke patients with an onset of <4.5 hours and no contraindications, thrombolysis should be performed as soon as possible. Factors affecting thrombolysis results in ischemic stroke patients are age, systolic blood pressure, the severity of neurological disorders, comorbid atrial fibrillation and diabetes mellitus, and premorbid symptoms. Thrombolysis is more effective in small vessels than in large vessels. The increase in mean blood pressure before and after thrombolysis reduces the likelihood of an outcome and functional independence in the first three months. An increase in systolic blood pressure before or after thrombolysis is also associated with an increased likelihood of post-thrombolysis intracranial bleeding. Blood pressure monitoring is an important strategy to minimize the risk of intracranial bleeding after thrombolysis. The recommended blood pressure is below 180/105 mm Hg. Neuroprotective administration is also associated with good outcomes in ischemic stroke patients.

Conclusion

Early thrombolysis, blood pressure control, and successful revascularization in ischemic stroke patients will provide better results.

Keywords : Stroke, ischemic, thrombolysis

ID_20 Research

Inter-rater Reliability in Assessing Stimulated Skin Wrinkling Grading on HIV Sensory Neuropathy in Indonesian HIV Patients

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Abstract

Background

HIV-associated sensory neuropathy (HIV-SN) is one of the most frequent complications of HIV, possibly affecting 50% of individuals infected with HIV. Although not seemingly fatal, neuropathic pain decreases social and economic function, ultimately reducing the patient's quality of life. The clinical symptoms of HIV-SN may vary in each patient, ranging from pain, numbness, burning sensation, to even asymptomatic. Diagnosing HIV-SN can be a challenge because the results of electrophysiologic test can be normal.4 Stimulated Skin Wrinkling (SSW) is a reliable and convenient tool to examine sympathetic nerve function in hands and feet, including HIV neuropathy. In current clinical practice, the wrinkles are graded based on a previously published 5-point-scale and the assessment of the photographic picture obtained.This type of grading is subjective and the degree of natural wrinkling due to age and/or gender is disregarded, as skin elasticity, extensibility and echogenicity all decrease with age.

Method

In this study, we conducted a cross-sectional study of assessing SSW on HIV-SN patients with different inter-observers. 20 subjects of HIV-SN patients were photographed pre-and post EMLA induced SSW same standard methods. We use grading of SSW from the previously published 5-point scale as a standard 8. Five independent inter-observers with the same medical education will grade the 20 patient's SSW photographs in a blinded fashion. The inter-observer variability for wrinkle scores according to the 5-point-scale was assessed using Fleiss Kappa's score in Microsoft Excel and SPSS Statistics.

Result

The mean proportion of agreement in each patient with five different raters was 0.57. Meanwhile, the inter-observer reliability of assessment by the 5-point scale method was calculated using Fleiss Kappa with a value of 0.42.

Discussion

In this study, we achieved a moderate agreement in reliability scores, which suggests the application of normative values from the 5-point-scale might be controversial and should be carefully used in clinical practice. Various factors may contribute to age-related changes in the sensory system; change in properties of the dermis, demyelination and fiber loss in peripheral nerves, and degenerative changes in the central nervous system.

Conclusion

SSW is a valuable diagnostic tool for sensory neuropathies especially in remote areas with inexpensive materials. Its use is relatively simple, and may help detect earlier patients with sensory neuropathies. However its clinical application should be further studied perhaps with larger quantities in patients, since we found moderate inter-observer reliability. If a more reliable technique is available, international normative values, corrected for age and gender should be determined before serving as a tool for diagnostics.

Keywords: sensory neuropathy;HIV-SN;stimulated skin wrinkling;SSW;

ID_21 Case Report

A Case of Hemiballismus in Ischemic Stroke with Uncontrolled Diabetes Mellitus Patient, Is it A Diabetic Striatopathy? A Case Report

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Abstract

Background

Hemiballismus is a rare movement disorder, that global incidence and prevalence are largely unknown, given the wide variety of etiologies but estimated to be 1-2/1.000.000. The most common cause of acquired hemiballismus is stroke. Non-ketotic hyperglycemia is the second most common cause of this condition. Diabetic Striatopathy (DS) is a rare medical condition with ambiguous nomenclature describing hyperglycemia associated with ballism and/or neuroimages of striatal abnormalities. Hemiballismus can be caused by multiple diseases, hence it requires interprofessional evaluation and management for promising outcomes.

Case Summary

A 78-year-old elderly lady with underlying long-standing diabetes presented with constant uncontrolled, purposeless and non-rhythmic movement of her right upper and lower limb for 5 days. They move like a throwing motion. The abnormal movement only completely disappeared during sleep. On physical examination, the patient was alert, awake, and oriented to time, place and person with stable hemodinamics. Involuntary movements of the right extremities were found without any sensory and cranial nerves deficits. From supporting examination, refractory hyperglycemia was found (blood sugar level on admission was 331) and a head non contrast computed tomography (CT) scan showed a lacunar infarction of the left internal capsule. Magnetic Resonance Imaging (MRI) could not be performed because the facilities were unavailable. Other laboratory results were normal. Patients received haloperidol, aspirin, and insulin. The patient's involuntary movement has improved after 3 days of treatment.

Discussion

Hemiballismus is thought to arise from decreased activity of subthalamic nuclei in the basal ganglia. Hyperglycemia causes hyperviscosity of the blood that eventually leads to infarction of the basal ganglia, leading to decreased production of gamma-aminobutyric acid (GABA) and acetylcholine at the basal ganglia, further causing disrupting of normal neuronal impulse transmission and circuit. The Dopaminergic activity becomes damaged, causing loss of inhibitory function, that allows hyperkinetic movement. Hyperglycemia may also directly lead to changes in dopaminergic activity in the striatum of predisposed patients with dopamine receptors upregulated and dopaminergic catabolic metabolism decreased. The CT scan result, which showed lacunar infarction of the left internal capsule, was insufficient to support the diagnosis of hemiballismus stroke. MRI is more sensitive for the diagnosing of acute brain ischemic changes and determining infarct core. However, MRI has a number of limitations and cannot be used in certain circumstances. Treatment of hemiballismus includes therapy for the causative, for example, antidiabetic therapy for hyperglycemic hemiballismus. Hemiballismus due to a structural brain lesion is treated symptomatically. Hemiballismus in stroke patients is usually self-limiting. Antidopaminergic therapy remains the first choice of therapy. Dopamine receptor blockers, such as typical (haloperidol, pimozide) and atypical (risperidone, olanzapine) neuroleptics are very effective.

Conclusion

We describe a patient with uncontrolled diabetes mellitus and ischemic stroke of the internal capsule presenting with right-sided hemiballismus that resolved after receiving treatment with haloperidol, aspirin, and insulin. MRI examination is still needed to determine the cause of hemiballismus.

Keywords : Hemiballismus; Ischemic Stroke; Uncontrolled Diabetes Mellitus; Diabetic Striatopathy

ID_23 Case Report

Diagnosis and Management of Giant Meningioma at Young Age

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Abstract

Background

Meningiomas in young women are very rare cases, especially in very large sizes (the longest dimensions >5 cm) or referred to as giant meningiomas. The percentage of meningiomas at the age of

Case Summary

We present a case of a 19-years old young woman with a history of seizures and headaches which appeared 1 year before admission. The illness began with a throbbing headache in the frontal region and then seizures that occurred one to two times a month. She also had blurred vision and loss of smell since 5 months before admission. She can communicate well, there is no language disorder. There is no family history of similar diseases. Physical examination within normal limits, except there is bilateral papilledema. All routine laboratory investigations were normal. MRI was performed, and a malignant characteristic intra-axial solid mass (8.3 x 7.6 x 6.9 cm) in the left frontoparietal lobe was found, which was hypervascular, accompanied by extensive vasogenic edema to the left temporal lobe, causing narrowing and compression of the bilateral lateral ventricles, bilateral III, left basal ganglia and subfalcine herniation to the right. The patient underwent tumor removal and craniectomy surgery according to Simpson grade II. Headaches and vision improvement, however patients experienced recurrent focal to bilateral seizures that improved with levetiracetam 1750 mg per day and dexamethasone IV. The histological result was meningothelial and transitional meningioma, CNS WHO grade I. The patient also experienced a postoperative loss of consciousness, improvement with the administration of mannitol IV.

Discussion

Giant meningioma, especially at a young age, requires careful management. Patients are mainly admitted due to a state of increased intracranial pressure due to the effect of space urgency due to its very large size, thus requiring monitoring and antiedema therapy of dexamethasone and mannitol IV. Another complication is seizures due to postoperative injury with the choice of anticonvulsant levetiracetam drugs accompanied by dexamethasone considering that seizures can cause local edema. Olfactory and vision disorders in patients can be caused by mass pressure in the lower frontal, in accordance with the Foster-Kennedy syndrome that found in this patient. These complaints, along with headaches became much improved after tumor removal. The management of grade I meningioma is maximal safe resection, considering its location in the left frontal lobe can cause major functional impairment and leakage due to tearing of the duramater. These patients are young, including Simpson grade II and WHO tumors grade I. Possible recurrence remains, but it is not recommended to continue radiotherapy, but rather clinical observation and MRI every 3 months.

Conclusion

Giant meningioma is a rare case, especially in young women. Its location in the frontal lobe can cause life-threatening complications, reuiring clinical monitoring and comprehensive management.

Keywords : Primary brain tumor; giant meningioma; young age

Myasthenic Crisis Exacerbation Triggered by Coronavirus Disease 2019

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Abstract

Background

Myasthenic crisis is a life-threatening manifestation of myasthenia gravis characterized by worsening muscle weakness, then resulting in respiratory failure. Coronavirus disease 2019 (COVID-19) has rapidly become a global pandemic where the virus can infect various systems, most commonly in the respiratory tract. However, COVID-19 had been associated with various neurological disorders included with myasthenia gravis exacerbation. In this paper, we report our patient with myasthenic crisis exacerbation triggered by COVID-19 infection.

Case Summary

A 19-year-old female was admitted to our emergency department with progressively worsening shortness of breath, difficulty swallowing, and jaw weakness for seven days, accompanied by fever and productive cough ten days earlier. She had been diagnosed with a myasthenic crisis in June 2022 and was taking oral methylprednisolone 4 mg twice daily, oral pyridostigmine 60 mg four times daily, and oral mecobalamin 500 mcg once daily. She also received a complete vaccine for COVID-19. Physical examination showed mild tachypnea, mild hypoxia, jaw weakness, slurred speech, difficulty swallowing, and no other neurological abnormalities. The Reverse Transcriptase Polymerase Chain Reaction (RT-PCR) COVID-19 Swab test was positive with thorax imaging bilateral pneumonia. She was given ventilator support in Isolation Intensive Care Unit, and therapy with intravenous methylprednisolone 125 mg twice daily, intravenous prostigmin 0,5 mg twice daily, oral pyridostigmine 60 mg six times daily, and then for COVID-19 she was given intravenous remdesivir with an initial dose of 200 mg followed by 100 mg once daily for five days. She showed improvement after ten days, the RT-PCR COVID-19 swab test was negative and ventilator support was weaning. She was discharged from the ward after two days showed no worsened symptoms and good oxygen saturation. Afterward, she was planned to computed tomography scan of the thorax to evaluate the presence of a thymoma.

Discussion

Myasthenic crisis is a life-threatening manifestation of myasthenia gravis requiring ventilator support to prevent death. Myasthenia gravis exacerbation can be triggered by infection, such as COVID-19. Antibodies are produced as a response to inflammatory viruses that can trigger the immune response if it has been cross-reaction with the acetylcholine receptor. Moreover, long-term consuming steroid drugs as myasthenia gravis therapy can facilitate immunocompromised conditions and increase virus infection risk.

Conclusion

This report indicated that the exacerbation of myasthenic crisis can be triggered by COVID-19, even though the patient was in stable condition with the maintenance oral drugs.

Keywords : Myasthenia gravis, myasthenic crisis, Covid-19, exacerbation

ID_25 Case Report

Childhood Cerebral X-Linked Adrenoleukodystrophy: A Case Report on A Rare Diagnostic Challenge

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Abstract

Background

X-linked adrenoleukodystrophy (XALD) is an extremely rare genetic neurological disorder typically seen in young males and varies in clinical phenotype and severity. We report a case of genetically confirmed childhood cerebral XALD. To the best of the authors' knowledge, this is the first reported case in Indonesia.

Case Summary

A 7-year-old male child with previously normal motor development presents with progressive weakness of all extremities, blindness, speech disturbance, and an episode of generalized tonic clonic seizure. The symptoms were first noticed 1 year ayo. He was also reportedly becoming more fatigued, frequently agitated, and developed difficulties in maintaining attention. His mother noticed he had poor-feeding since 1 year of age, and repeatedly vomited following meals. He had been to multiple specialists before and was previously diagnosed with attention deficit disorder and epilepsy, and started on oral antiepileptics. Past medical history was significant for recurrent febrile seizures before 2 years of age. Other components of history, including family history, was unremarkable. Upon examination, he was afebrile with stable vitals, but obtunded with a Glasgow coma scale (GCS) of 12-13 (E4M5V3-4). Meningeal signs were absent, pupil reflexes were normal, and motor examination revealed spastic quadriparesis. Laboratory examinations reveal no significant hematological, metabolic, or immunological abnormalities. A head magnetic resonance imaging (MRI) reveals pathological intensities of white matter, primarily involving the bilateral parieto occipital regions, raising suspicion of XALD. Tests for adrenal function reveal elevated ACTH and low cortisol. Genetic testing established presence of a pathogenic variant of the ABCD1 gene, thereby confirming diagnosis.

Discussion

XALD is an X-linked genetic disorder caused by mutations of the ABCD1 gene. It is a peroxisomal disorder of beta-oxidation, causing the accumulation of very long-chain fatty acids (VLCFA) in tissues. Affected male patients experience one of three primary manifestations: childhood cerebral XALD, adrenomyeloneuropathy, and adrenal insufficiency. Childhood cerebral XALD, as seen in this patient, usually presents between 4-8 years of age with neurobehavioral abnormalities, followed by neurologic deterioration such as progressive cognitive deficits, blindness, quadriparesis, and seizures. Diagnostics may reveal increased concentrations of VLCFA in plasma, decreased adrenal function, white matter demyelination in brain MRI, with genetic testing as confirmation. In patients with childhood cerebral XALD who are early in disease course, allogenic hematopoietic cell transplantation (HCT) constitutes the current treatment of choice, and corticosteroid replacement therapy should be initiated in settings of adrenal insufficiency. However, HCT is non-beneficial in individuals with advanced neurologic involvement, where management is primarily supportive. Prognosis for patients with advanced cerebral XALD is poor.

Conclusion

To the best of the authors' knowledge, this is the first reported case of genetically confirmed childhood cerebral XALD in Indonesia. Albeit rare, XALD is potentially fatal, and should always be considered in the evaluation of the young male with progressive neurological deficits and neurobehavioral abnormalities, as establishing the diagnosis of XALD has important implications towards management, prognosis, as well as family counselling.

Keywords : X-linked adrenoleukodystrophy; peroxisomal disorder; leukodystrophy; neuropediatrics; case report

ID_26 Case Report

Intracerebral Hemorrhage with Clinical Symptoms Similar to Transient Ischemic Attack: A Case Report

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Abstract

Background

Stroke is an acute clinical manifestation due to neurological dysfunction in the brain, spinal cord, and retina either partially or completely, which persists for > 24 hours or causes death due to vascular disorders. Stroke can be caused by infarction (not bleeding) and hemorrhage. Hemorrhagic stroke can be caused by intracerebral hemorrhage (ICH) or subarachnoid hemorrhage (SAH). In the meantime, transient ischemic attack (TIA) is a transient neurological dysfunction caused by focal ischemia, including retinal and spinal cord ischemia, without evidence of infarction.

Case Summary

A 69-year-old man, with complaints of weakness on the left side of the body and slurred speech in the afternoon for 6 days before admission to the hospital. The next morning, the complaint was no longer felt. The patient denied any complaints of headache, nausea, vomiting, loss of consciousness, fainting, seizures, and history of trauma. The patient has a history of hypertension and type 2 diabetes mellitus, but do not take medication regularly. The patient said that was the first time he had these complaints. No neurological deficits were found in physical examination. Intracerebral hemorrhage in the right basal ganglia was found in computed tomography (CT) scan.

Discussion

The typical clinical manifestation of ICH is sudden onset of severe headache. Nausea, vomiting and loss of consciousness are also common clinical manifestations of ICH. While the clinical manifestations of TIA are generally in the form of weakness, numbness or paralysis on one side of the body, dysarthria or aphasia, blindness in one or both eyes, dizziness, and severe headaches for no apparent reason. Most of the clinical manifestations that occur in TIA lasts a few minutes to 24 hours. In this case, ICH occurred spontaneously with clinical manifestations in the form of side weakness of the body and dysarthria in less than 24 hours, similar to TIA. This rarely happens. Neuroimaging is important to establish the diagnosis of stroke, because the history and physical examination alone are not enough.

Conclusion

Hemorrhagic stroke and non-hemorrhagic stroke have different management. Therefore, neuroimaging is urgently needed. Quick and precise management of stroke patients will impact on a better prognosis.

Keywords : stroke, intracerebral hemorrhage, transient ischemic attack, neuroimaging

Malignant Cerebral Hemispheric Infarction with Cytotoxic Cerebral Edema and Subsequent Subfalcine and Transtentorial Hernation: A Case Report

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Abstract

Background

Malignant cerebral hemispheric infarction comprises of less than 10% of ischemic strokes and is a life-threatening condition that requires immediate diagnostic and therapeutic measures. Cerebral cytotoxic edema is swift and produces brain herniation that can be fatal even with treatment.

Case Summary

A 59-year old male patient was referred to an emergency department of hospital XYZ with sudden, left-sided weakness since 5 hours prior to admission. His left-sided weakness was accompanied with droopy appearance of the left-side of his eyelid & lips and he had slurred speech. No other symptoms were reported. The patient had a history of smoking, alcohol consumption, uncontrolled diabetes mellitus and hypertension. No previous history of stroke was reported. The patient was fully alert, had left-sided hemiparesis with central type paresis of left cranial nerves of VII and XII. A non contrast brain CT scan was performed on the first day and showed a right lacunar infarction. On the second day, a contrast-enhanced brain MRI-MRA was performed and shows a hyperintense lesion of the right frontotemporoparietooccipital lobe. Midline shift was not present. Gadolinium-enhanced brain MRA shows occlusion of right internal carotid artery (ICA), right anterior cerebral artery (ACA), middle cerebral artery (MCA) and posterior cerebral artery (PCA), with low flow void of other adjacent branches. On the sixth day of treatment, the patient appeared dazed and gradually fell unconscious. On examination the GCS had drastically reduced to E2M4V2, and a non-contrast brain CT scan was performed again showing a large right hemispheric stroke of the frontotemporoparietooccipital, basal ganglia and right internal capsule that produced a subfalcine herniation of ±1.7cm to the left and transtentorial herniation. No signs of hemorrhage were found. The patient was started on mannitol, and was referred to another hospital. The patient was referred to our centre on the eighth day after the onset. The patient was unresponsive, GCS E1M2V1, 4mm/4mm pupils, absent brainstem reflexes and an NIHSS score of 40. The patient was admitted to the ICU and mannitol treatment was continued. The ECG showed supraventricular tachycardia and was treated with amiodarone and the SVT was overcome. Until the seventeenth day of treatment, the patient showed no signs of improvement, and the patient passed away on the eighteenth day.

Discussion

Cytotoxic cerebral edema occurs on a cellular level where the ischemic process ultimately leads to brain swelling, creating a mass effect that produces brain herniation. Clinical evaluations using NIHSS scoring at the initial stage is crucial and can be used as a reference point to monitor clinical progression. Cardiovascular complications such as SVT may occur due to brainstem compression. The extent of cerebral edema can produces multiple brain herniations. Furthermore, cerebral edema could already occur prior to the rapid clinical deterioration, and therefore therapeutic options such as decompressive craniectomy at that time may be too late to alter any outcome.

Conclusion

Management of malignant cerebral hemispheric infarction remains a challenge due to the swift progression of cytotoxic cerebral edema that produces brain herniation.

Keywords : Malignant cerebral hemispheric infarction; cerebral cytotoxic edema; herniation; NIHSS

ID_29 Case Report

Counterclockwise Tetraparesis Progressive Myelopathy due to Foramen Magnum Meningioma : A Rare Case Report

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Abstract

Background

Foramen magnum meningioma (FMM) is a rare and challenging tumor among all meningiomas due to location, clinical manifestation, and definitive therapy. The prevalence of the FMM accounts for 1.8-3.2% of all meningiomas and is commonly found in women. Our study aimed to describe FMM's clinical manifestation and determine the diagnostic and precise therapy.

Case Summary

A 48-year-old female, came to the hospital with a chief complaint of weakness of all extremities, numbness, and immobility since two years ago. A sore neck was her initial complaint. Progressively, the patient felt numbness and weakness radiating from the right-to-left toe towards the upper leg respectively. Since 1 year ago, the same symptom was also felt in the upper extremity. Neurological examination showed decreased motoric function in the upper and lower extremities. Hypperreflex at biceps, triceps, patella, and achilles, positive pathological Babinski reflex. Impairment of touch, pain, and temperature from neck to toe is also documented. Radiological findings from Magnetic Resonance Imaging (MRI) with and without contrast showed an intradural-extramedullar mass located in the foramen magnum from the medulla oblongata to C1 (lesion size 2.35x2.33x2.43 cm). We diagnosed the patient with Foramen Magnum Meningioma. Surgical therapy has been performed for tumor evacuation, and pathology anatomy revealed meningoteliomatosa.

Discussion

The clinical symptom and manifestation of FMM depend on the location and size of the lesion and progressively as a result of compression of the nearby structure. In this case, one of the predominant clinical features was counterclockwise tetraparesis. FMM typically slow growing with an indolent periodic. When FMM become symptomatic, they most generally present with quadriparesis, sensory abnormalities, ataxia, and dysfunction of cranial nerves. The features were consistent with the tumor location from the results of the MRI. MRI is the best choice for defining FMM; It clearly delineates the exact tumor size, location, site of dural attachment, and relation to vascular and neural structures. MRI also provides an opportunity to assess the consistency and vascularity of the tumor. The FMM is commonly benign and is the tumor with a good prognosis.

Conclusion

FMM is not a common disease. Whenever it occurs in this location, it usually presents with the characteristic manifestation of rotational paralysis, and it can be clockwise or counterclockwise. In the tertiary hospital setting, complete anamnesis and supportive examination should be taken to work up the diagnosis of FMM.

Keywords : Counterclockwise Tetraparesis, Foramen Magnum, Meningioma, Tumor, Myeolopathy

ID_30 Research

Acute Ischemic Stroke Patients with COVID-19 Infection: A Descriptive Study at Pasar Minggu Regional General Hospital

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Abstract

Background

Corona Virus Disease 2019 (COVID-19) can cause neurological complications such as ischemic stroke. Acute ischemic stroke patients with severe COVID-19 infection had higher risk of disability and/or death. This study was conducted to determine the profile of acute ischemic stroke patients with COVID-19 infection at the Pasar Minggu Regional General Hospital.

Method

This was a descriptive study based on the medical record of acute ischemic stroke patients with COVID-19 infection of those ≥18 years of age and who were hospitalized at Pasar Minggu Regional General Hospital between April 2020 and October 2022.

Result

There were 43 research subjects. The majority were women (51.2%), age group 56-65 years old (41.9%). The commonest risk factor was hypertension (72.1%), followed by type 2 diabetes mellitus (39.5%), dyslipidemia (32.6%), history of stroke (30.2%), and coronary artery disease (25.6%). The majority of subjects had no data on COVID-19 vaccination (67.4%). Most of the Glasgow coma scale (GCS) at admission was 15 (74.4%). The commonest COVID-19 disease severity was mild-moderate (67.4%). The median urea value was 38 (11-137) mg/dl, the mean creatinine value was 1.42±0.61 mg/dl, and the median blood glucose level was 125 (72-615) mg/dl. Most of the neutrophil lymphocyte ratio values increased (72.1%) with a median value of 5.54 (0.55-23.50). D-dimer levels were mostly increased (81.4%) with a median value of 1.70 (0.20-32.10) µg/ml. The most common type of ischemic stroke was thrombosis (79.1%) with the most treatment received a combination of antiplatelet and anticoagulant (53.5%), and the most length of stay was ≤ 14 days (76.7%). The patient's outcome was mostly alive (95.3%).

Discussion

The incidence of acute ischemic stroke with COVID-19 infection in this study increased with increasing age, this could correspond to the risk of cardiovascular disease which increases with age. Hypertension is the main cardiovascular risk factor. This suggests that acute ischemic stroke is not only caused by COVID-19 infection which increases thrombosis and the occurrence of coagulopathy, but is also caused by conventional risk factors such as hypertension. Most of the GCS scores in hospital admission were good, this corresponds to the most common type of ischemic stroke is thrombosis. Thrombotic ischemic stroke usually involves smaller blood vessels than embolic stroke, resulting in minimal neurological deficits. Most of the outcome of acute ischemic stroke patients with COVID-19 infection was alive. This is due to the mild severity of stroke, most of them get adequate management by administering anticoagulants to those with increased D-dimer values, and the degree of COVID-19 disease which is mostly mild-moderate. A good initial neurological condition will give a good outcome, while a severe degree of COVID-19 disease will increase the risk of death.

Conclusion

The majority of acute ischemic strokes with COVID-19 infection occur in women in the age group of 56-65 years old. The main cardiovascular risk factor was hypertension. Most of subjects had good GCS scores, thrombotic stroke type, good laboratory results of urea, creatinine, and blood glucose. D-dimer and NLR values increased in most of the subjects. The outcome of case in this study was good.

Keywords : Acute ischemic stroke, COVID-19, mortality, risk factors, treatment.

ID_31 Research

Depression Level among Neurology Resident Doctors in Faculty of Medicine, University of Indonesia

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Abstract

Background
A resident doctor is a doctor who has graduated from medical school, has earned the title of "doctor" and is currently undergoing a specific specialization postgraduate program. Resident doctors are at high risk of experiencing stress and depression. Depression greatly affects the quality of medical services provided by residents. This study aimed to determine the prevalence of depression, its relationship with various sociodemographic factors and several environmental factors, and its relation to the residency level of resident doctors in the Neurology Study Program, Faculty of Medicine, University of Indonesia.

Method
This research is an analytic observational study with a cross-sectional design supported by primary data obtained through filling out a questionnaire containing sociodemographic data and the Beck Depression Inventory-II (BDI-II). Then, the data were analyzed using chi-square and regression analysis.

Result
In this study, 43 (66.2%) participants were females and 16 (33.8%) were males. The overall prevalence of depression was 18.2%, with mild depression at 9.2% and moderate depression at 9.2%. Depression was more common in females than males (10.8% vs 7.7%). The residency level has a significant association with the incidence of depression. The junior residency level had the greatest risk (p=0.044). Senior/supervisor support was significantly related to depression (p= 0.049). Although not included in the BDI-II criteria for depression, one participant reported thoughts of suicide.

Discussion
In this study, residency level was found to be statistically significant for depression. In addition, the regression analysis also concluded that the higher the residency level, the lower the risk of experiencing depression. Level 3, or the highest level, had the lowest risk of experiencing depression. The findings in this study are similar to those of a study conducted in Mexico that found that residency level 1 has the highest risk of experiencing depression, which is 3-4 times higher than the top level. Several other studies have found no relationship between residency levels and depression. Various studies have identified a pattern where resident doctors with higher residency rates are usually better able to handle pressures and responsibilities from the environment than those with lower residency levels. This study's results indicate a relationship between senior, supervisor, or teacher support for depression among resident doctors. Peer or colleague support was not significantly associated with depression. It is possible that this occurred because the proportion between resident doctors who experienced depression and felt they had received senior/teaching staff support and those who felt they did not receive this support was quite balanced. Meanwhile, in the peer/colleague support variable, these proportions differed greatly.

Conclusion
Approximately 18.4% of neurology resident doctors had depression. Residency level and senior/supervisor support were significantly associated with depression among resident doctors.

Keywords : Resident doctors; depression; BDI-II

ID_32 Case Report

Ischemic Stroke as An Early Manifestation of Systemic Lupus Erythematosus on Female 31 Years Old Patient

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Abstract

Background

Patients with systemic lupus erythematosus (SLE) have a two-fold increased risk of stroke, with younger patient (less than 50 years) having an ever higher risk (up to 10-fold). While cerebrovascular vascular events are common among patients with SLE, ischemic stroke as the first manifestation of the disease is rare and often misdiagnosed. What we found to be challenging in this case is a young patient who developed an acute ischemic stroke as an early manifestation of SLE.

Case Summary

A 31-years-old female presented to our hospital with complaints of dizziness followed by nausea, vomiting, dysarthria, dysphagia, and diplopia that occurred 2 weeks ago. She had no classic stroke risk factor and previous autoimmune history. On physical examination, our patient had normal vital signs, nystagmus, paresis of right nervus VII, right nervus XII, nervus IX, and nervus X, and a slightly depressed motoric score on right extremities. There were no abnormalities on complete blood count, electrolyte, and kidney function test. We also performed the anti-double stranded (Ds DNA) and antinuclear antibody (ANA) profile test, the results showed negative anti-Ds DNA and positive ANA profile on the SS-A, Ro-52, Scl-70. The early head Multi Slice Computed Tomography (MSCT) did not show abnormalities. An additional head Magnetic Resonance Imaging (MRI) showed an early subacute infarct in the right and middle medulla oblongata. Magnetic Resonance Angiography (MRA) showed homogenous intralumen. The patient was treated in ward for 2 weeks and later she had shortness of breath and decreased consciousness, and was transferred to the Intensive Care Unit (ICU). The patient was intubated and have extreme respiratory acidosis according to her blood gas test. Our patient was treated with high-dose methylprednisolone IV (750 mg/d), mycophenolate mofetil followed by antiplatelet such as clopidogrel and aspilet,

Discussion

The main diagnosis that should be considered in young patients presenting with stroke are SLE or antiphospholipid syndrome (APS). Our initial diagnosis was stroke with differential diagnosis of vasculitis autoimmune such as SLE or APS, infection and space occupying lesion (SOL). We obtained negative anti-Ds DNA and positive ANA profile which strengthen our suspicion towards SLE. Several potential mechanisms of cerebrovascular events in SLE, including a hypercoagulable state, cardiogenic embolism, accelerated atherosclerosis, and vasculitis. Vasculitis is the most frequently mentioned aetiology of stroke in SLE, and MRI typically shows smooth, homogeneous, and concentric vessel wall thickening. An early subacute infarct in the right and middle medulla oblongata was found on MRI, and homogenous intralumen was found on MRA. Patient's symptoms of dizziness, dysarthria, dysphagia, diplopia, multiple cranial nerve palsy, followed by respiratory failure and decreased consciousness were correlated with the lesion findings. We also gave antiplatelets therapy (aspilet, clopidogrel), glucocorticoid (methylprednisolone) and immunosuppressant (mycophenolate mofetil) to suppress systemic inflammation.

Conclusion

Stroke can occur as an early manifestation of SLE in young patients without classic stroke risk factors and previous autoimmune history. It is very important for physicians to keep a broad differential diagnostic towards autoimmune disease in unique case like this because it determines the initial therapy.

Keywords : Cerebrovascular Events; Stroke; Ischemic Stroke,; Vasculitis; Autoimmune;Systemic Lupus Erythematosus

ID_33 Research

Profile of Clinical Hemorrhagic Stroke Patients: A Study in Pasar Minggu Regional General Hospital Jakarta between January 2019 and December 2019

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Abstract

Background

Stroke is the most common health problem in both developed and developing countries and is the second leading cause of death in the world. There are several risk factors for hemorrhagic stroke such as age, gender, hypertension, dyslipidemia, and use of antiplatelet or anticoagulant. This study was conducted to determine the clinical profile of hemorrhagic stroke patients and their risk factors at the Pasar Minggu Regional General Hospital.

Method

This was a descriptive study based on the medical record of hemorrhagic stroke patients of those ≥18 years of age, who were hospitalized at Pasar Minggu Regional General Hospital between January 2019 and December 2019.

Result

There were 74 research subjects. The majority subjects were men (55.4%), aged 56–65 years old (32.4%) followed by aged 46-55 years old (29,7%). The duration from symptoms appeared to coming to the hospital was mostly less than 24 hours (75.7%). Hypertension (94.6%) was the most common risk factor for hemorrhagic stroke followed by diabetes mellitus (40.5%). The majority of subjects had normal lipid profiles. Most of the Glasgow coma scale (GCS) at the time of admission were 15 (73%). The commonest type of hemorrhagic stroke was intracerebral hemorrhage (75.7%) and the commonest stroke lesion being supratentorial (87.8%). Craniotomy was performed on 2.7% subjects, ventriculoperitoneal shunt on 2.7% subject, and external ventricular drainage was performed on 1.4% subjects. Most of subjects had length of stay ≤ 14 days (91.9%). The mortality of hemorrhagic stroke patients was 10.8%.

Discussion

The results of this study indicate that with increasing age, the risk of hemorrhagic stroke increases. Stroke mainly occurs in men aged 56-65 years, in accordance with previous research that the risk of stroke in women aged > 85 years increases compared to men because it is associated with a history of oral contraceptives, menopause, and hormone replacement therapy. Hypertension is the main risk factor for hemorrhagic stroke in this study. Hypertension can lead to the formation of microaneurysms in small blood vessels in the brain, where a ruptured of microaneurysms will cause intracerebral haemorrhage. In this study, operative procedures were only carried out on a small proportion of subjects, this could be in accordance with the clinical conditions of the subjects at the time of admission, that the majority had a GCS of 15. One of the indications for operative therapy is when the GCS is < 14 and the hematoma is > 40 ml. Mortality of hemorrhagic stroke patients in this study was low, this could be due to the fact that most of the subjects came to the hospital within < 24 hours of onset so that treatment was earlier, and most of subjects had good clinical condition (GCS 15), and operative therapy was carried out under the appropriate indications.

Conclusion

Hemorrhagic stroke mainly occurs in men aged 56-65 years with the highest risk factor being hypertension. Most of the clinical symptoms of stroke are mild and the mortality from hemorrhagic stroke is low.

Keywords : Hemorrhagic stroke, Mortality, Profile, Risk Factor

ID_34 Research

Study of Clinical Profile of Hemorrhagic Stroke Patients in Pasar Minggu Regional General Hospital January 2016 – December 2018

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Abstract

Background
Hemorrhagic stroke occupies at a small part about 13% of all stroke cases, but the mortality rate is higher than ischemic stroke. Stroke is the third leading cause of death after heart disease and cancer, and the number one cause of disability in adults in the United States. The incidence of hemorrhagic stroke in Japan and Korea is 18-24%, while in the United States, England, and Australia it is 8-15%.

Method
This was a descriptive study based on medical records of hemorrhagic stroke patients of those ≥18 years of age, who were hospitalized at Pasar Minggu Regional General Hospital between January 2016 and December 2018. The sampling method in this study was simple random sampling.

Result
There were 93 research subjects. Most of the subjects were male (66.7%) with an age range of 55-64 years (34.4%), the most common symptom was hemiparesis (45.2%) with symptom onset ≤ 24 hours (75.3%). Most of the subjects had hypertension (93.5%) followed by a history of previous stroke (22.6%), diabetes mellitus (14%), and history of heart disease (4.3%). The most common type of hemorrhagic stroke was intracranial haemorrhage (ICH) (63.4%) with the most lesions was supratentorial (89.2%). Operative management was only found in a small proportion of subjects (7.5% craniotomy and external ventricular drain 5.4%). The most length of hospitalization was

Discussion
Hypertension is the biggest risk factor for hemorrhagic stroke. Patients who have a previous history of stroke have a 10-fold increased risk of stroke recurrence. The haemorrhagic stroke mortality rate in this study was 30.1%. Until now, stroke is the third leading cause of death after heart disease and cancer. Therefore it is necessary to increase knowledge and education about the prevention and control of hypertension considering that hypertension is a risk factor that can be modified.

Conclusion
Hemorrhagic stroke was mostly found in men with an age range of 55-64 years. The most common risk factor was hypertension. Stroke onset occurs mostly in ≤24 hours, with the most common symptom was hemiparesis. The most common type of hemorrhagic stroke was ICH and the location of the lesion was mainly in supratentorial. Operative management is only found in a small number of subjects. Length of stay, mostly

Keywords : Hemorrhagic stroke; risk factors; location of the lesion; operative therapy; mortality.

ID_35 Research

Relationship between D-Dimer and Severity Level in Patients with Territory Ischemic Stroke at Banten General Hospital

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Abstract

Background
Stroke ranks third in degenerative diseases after heart disease and cancer. D-dimer is a simple biomarker used in diagnostic algorithms to rule out venous thromboembolism. A thromboembolic process often causes large ischemic strokes, so the authors determine the relationship between values d-dimer with severity assessed by NIHSS in patients with extensive ischemic stroke at Banten Regional General Hospital.

Method
This study used a cross-sectional design. Sampling was carried out at the Banten Regional General Hospital in 2021-2022, and 20 research subjects were obtained.

Result
Of the 20 study subjects, 10 women (50%) and 10 men (50%) were found, with an average age of 60.8 ± 10.06 years from all subjects, 20 patients (100%) had a history of hypertension, 1 patient (5%) had diabetes mellitus, 16 cardiovascular disease patients (80%), obese 2 patients (10%), smoking 9 patients (45%) and with Atrial Fibrillation 5 patients (25%). The highest qualitative awareness was Delirium in 10 patients (50%), Stuppor in 5 patients (25%), and Somnolence in 2 patients (10%). The d-dimer level was 3652 ± 2903 ng/m, with an abnormal count in 17 patients (85%). The mean NIHSS score was 20.8 ± 6.9, with 15 patients having severe symptoms (75%). So, a significant relationship was obtained between d-dimer levels and the NIHSS score (p=0.01). The output of 14 patients died (70%), 2 patients (10%) went home at their request, and 4 patients (20%) went home alive.

Discussion
D-dimer is a circulating protein that is the end product of cross-linked fibrin degeneration by plasmin activity in the fibrinolytic system. Zi and Shuai (2014) found that d-dimer levels correlated with stroke subtype and can be used as an indicator to diagnose cardioembolic stroke. Yang et al. (2014) also found a correlation between d-dimer levels and NIHSS scores in 220 patients in the ER of hospitals in China and showed that d-dimer could predict outcome and death 90 days after acute ischemic stroke. This study is in line with previous studies where there is a significant relationship between the increase in the d-dimer value and the severity level determined by the NIHSS score.

Conclusion
In this study, there was a significant relationship between increased levels of d-dimer and NIHSS scores in patients with territory ischemic stroke at Banten General Hospital.

Keywords : Acute Territory Ischemic Stroke, NIHSS, D-dimer

ID_36 Case Report

Granulomatous Amebic Encephalitis Caused By Balamuthia Mandrillaris: A Rare Case Report

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Abstract

Background
Balamuthia mandrillaris is a free living amoeba that lives in soil and water. Infection of the central nervous system (CNS) has been reported as opportunistic infection in both immunocompetent and immunocompromised patients. High mortality rate, rapid progression of disease and low number of cases reported presents the difficulty in managing the case. To date there are only less than 200 cases of CNS infection by B. mandrillaris reported globally with no known geographic or socioeconomy pattern. Most cases were found in North America, while in the South East Asia there is only one case reported in Thailand.

Case Summary
A 15 years old boy who had been in good health presented with progressive onset of cognitive regression. He had memory loss that gradually worsen since 8 months before admission. At first it affects short term memory loss like the school subject he just learned and later long term memory loss like his daily route to school. Later he had difficulty in performing daily task such as bathing, feeding and dressing. He had the habbit of walking barefoot and developed a painless skin lesion due to abrasion in the right foot 4 months prior to illness. Magnetic Resonance Imaging (MRI) revealed multiple hyperintense lesion in T2 that enchanced with contrast administration in the corpus callosum, anterior commissure and septum pellucidum. Stereotactic biopsy then peformed and giemsa staining of brain tissue revealed trophozoite and cyst of B. mandrillaris. Treatment with fluconazole, azithromicine and sulfadiazine showed clinical progession. Serial MRI within 5 weeks of treatment revealed significant decrease in size of lesion.

Discussion
GAE is a subacute to chronic infection that spreads to the CNS hematogenously after infecting inoculant organs such as the skin and lungs, most cases also reported painless skin plague months prior to neurological symptom. GAE is often experienced by individuals who often do outdoor activities such as gardening, farming, camping and mountain climbing. In this case patient often did outdoor activities barefeet with wound on the sole of the foot. Neurological symptoms were varied from reduced consciousness, cognitive impariment, seizures, cranial nerve paresis and neck stiffness. In the case of patients showing a progressive cognitive impairment. Golden standard of diagnosis is amebic finding under the microscope with giemsa or H&E staining of skin or brain biopsy sample. B.mandrillaris culture was possible with media of mamal culture such as brain, lungs and liver of mamals. In this patient sample of brain biopsy showed amebic sample under the microscope with giemsa staining. Culture with conventional media did not showed any result. Study showed antifungal, anti helminth and antibiotic have amebastatic and amebacidal property and combination of therapy with 2 or more agents revealed positive result. This patient received combination of fluconazole, azithromicyne and suladiazine, in the time span of 5 weeks patient showed progression both clinically and imaging.

Conclusion
Balamuthia mandrillaris infection is a cause of high morbidity and mortality. The small number of cases and the lack of known information about this disease has made it difficult to treat cases that require

Keywords : Granulomatous Amebic Encephalitis , Balamuthia mandrillaris, Amebic Infection

ID_37 Research

Clinical Presentation and Epidemiology of Primary Brain Tumor: A Study in Pasar Minggu Regional General Hospital Jakarta

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Abstract

Background
Primary brain tumors are rare tumors responsible for high mortality and morbidity. Research on primary brain tumors in Jakarta has not been widely reported. Therefore, this study was conducted to describe the clinical manifestations and epidemiology of primary brain tumors at Pasar Minggu Regional General Hospital Jakarta.

Method
This was a descriptive study based on the medical record of primary brain tumor patients of those ≥18 years of age, who were hospitalized at Pasar Minggu Regional General Hospital Jakarta between January 2016 and October 2020.

Result
There were 65 research subjects. Most of the subjects were women (69.2%), aged 41-60 years (66.2%), Betawi ethnicity (33.8%), high school education (36.9%), type of work were housewives (38.5 %), and married (92.3%). The commonest chief complaint was headache (29.2%) and the neurological deficit was hemiparesis (40%). The majority of tumors were located in the supratentorial (89.2%). Meningioma is the most common tumor type (63.1%). The patients' outcome was mostly alive (90.8%).

Discussion
The majority of primary brain tumor patients in this study were women with the type of tumor being meningioma (63.1%). The results of this study are higher than previous studies where meningiomas were found in 20-40% of subjects. The higher incidence of meningioma in women is thought to be related to hormonal influences. The majority of the chief complaints were headaches, this is similar to previous studies. Headache in patients with brain tumors can occur due to space-occupying effects of the tumor mass and surrounding edema. The good outcome of the patients in this study were determined based on age, location, type, grade of tumor, spreading of tumor, functional status, and operative therapy with good results.

Conclusion
The majority of primary brain tumors were women, aged 41-60 years with the most common type was meningioma. The patients' outcome was mostly good.

Keywords : primary brain tumor; epidemiology; cinical presentation.

ID_38 Case Report

Bilateral Chorea-Ballism Associated with Nonketotic Hyperglycemia: A Case Report

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Abstract

Background

Hemichorea-hemiballism (HC-HB) is a complication of non-ketotic hyperglycemia (NKH). The are several literatures contains of NKH-induced HC-HB associated with radiological changes of contralateral basal ganglia. However, only a few studies reported bilateral clinical features and radiological. We submit a case of NKH and lacunar infarct which presented with bilateral chorea ballism and disappeared completely after correction of the hyperglycemia

Case Summary

A 70-years old Asian woman, presented to our emergency department with abnormal movements of the head and the upper limbs which had begun approximately a week before admission. These movements were involuntary, rapid, irregular and disappeared only during sleep. The movements had not spread to her lower extremity. She did not complain of any other symptoms, including double vision, dizziness or limb weakness. She had a 10 year of history of type 2 diabetes mellitus and medication noncompliance. She had no personal or family history of movement disorders. The neuorogical examination shown a choreic-ballistic movements of the head and the upper limbs. Laboratory finding shown blood glucose level is 463mg/dL and computerized tomography (CT) scan reveals hyperdensity in the striatal region bilateral and external capsule infarct. The treatment included improving blood glucose with insulin and symptomatic treatment of chorea with haloperidol 1mg 2 times a day and valproic acid 250mg every day. On the fourth day of admission, patient's involuntary movements improved obviously. Blood glucose level become normal after a week. After a month follow-up, her dance-like symptoms disappeared completely

Discussion

Chorea and/or ballismus associated with non-ketotic hyperglicemia is rare, the most common case with unilatelar while bilateral only occur in less than 10% of cases. The pathophysiology of this case is not fully understood, it is considered that it is an ongoing dynamic process that transiently affects the function of the basal ganglia. Hyperviscosity secondary to hyperglycemia leading to regional blood-brain barrier disruption and metabolic damage, hyperglycemia induced intracellular hyperosmolality and hypoperfusion in the putamen, anaerobic glucose metabolism leading to depletion of GABA and secondary to acetylcholine depletion in the basal ganglia due to the non ketotic state, disinhibition of the thalamocortical pathway leading to motor cortical hyperexcitability. Neuroimaging findings include hyperdense unilateral or bilateral lesions of the basal ganglia on CT and hyperintense signals in the putamen on T1-weighted magnetic resonance imaging (MRI) and of variable intensity on T2-weighted MRI, usually contralateral to the clinical symptom. Management entails correction of hyperglycemia and may require anti-chorea medications including antipsychotics, GABA-receptor agonists, selective serotonin reuptake inhibitors, and dopamine depleting agents

Conclusion

Chorea-ballismus associated non-ketotic hyperglicemia is a rare case that caused by poor control of serum gloucose in diabetes. The diagnostic work-up includes clinical assessment, glucose levels, and brain imaging. Early recognition and treatment are the key to better outcome

Keywords : Hemichorea, hemiballism, hyperglicemia, diabetes mellitus

ID_40 Case Report

Masked Etiology of Sudden Onset Loss of Consciousness: A Rare Case of Bilateral Thalamic Infarct

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Abstract

Background

Loss of consciousness had a wide range of etiologies caused by intracranial and extracranial etiology. Loss of consciousness without focal deficit neurologic commonly caused by metabolic disease but there are rare cases due to bilateral thalamic infarct. Bilateral thalamic infarction is a rare case of cerebral infarction caused by the occlusion of the Artery of Percheron (AOP) that is responsible for 0.6% of all ischemic strokes. AOP is an anatomical variant of diencephalic irrigation, in which the thalamic paramedian arteries arise from a common trunk from the posterior cerebral artery (PCA).

Case Summary

A 60-year-old male presents to the Emergency Department with altered consciousness, lethargy, and speech difficulties 3 days before admission. He was somnolent and hypertensive with a blood pressure of 172/105 mmHg. On neurological examination, the patient had a Glasgow Coma Scale (GCS) of 11 points (eye:3, motor:5, verbal:3). Laboratory workup shows elevated leukocyte (12,960/µL), LDL-C (185 mg/dL), and HbA1C (9.9%) with normal blood glucose (169 mg/dL) and slightly low potassium (3.2 mmol/L). Brain Magnetic Resonance Imaging (MRI) and Angiography without contrast showed bilateral thalamic hyperintensities in Diffusion Weighted Imaging (DWI) and Fluid Attenuated Inversion Recovery (FLAIR) sequences. Thus, confirming the diagnosis of bilateral thalamic infarct. The patient was prescribed clopidogrel 75 mg, atorvastatin 40 mg, citicoline 500 mg, neurotropic vitamins, amlodipine 5 mg, fenofibrate 145 mg, and insulin glulisine. Three days after admission, the patient had a complete recovery with a GCS 15. Further cognitive examination is needed

Discussion

Bilateral thalamic infarct is a rare form of cerebral infarction with a prevalence of 0,6% of all ischemic stroke. Most noticeable symptoms are vertical gaze palsy, memory impairment, akinetic mutism, confusion, drowsiness, hypersomnolence, and coma which may be confused with other etiologies such as metabolic or psychiatric causes. Völk et al reported that altered level of consciousness were attributable to cerebrovascular diseases (24%), followed by systemic infections (12%), epileptic seizures (12%), psychiatric disorders (8%), metabolic causes (7%), and intoxications (7%). Bilateral thalamic infarct might mimic wernicke encephalopathy commonly due to alcohol abuse. The difference is that on MRI, lesions are symmetrical on both sides. Literature reviews found that there are very few cases of bilateral thalamic infarction that show complete recovery but sequelae such as cognitive impairment may present.

Conclusion

Bilateral thalamic infarction due to occlusion of the Percheron artery is a rare case which has a similar risk factor with other ischemic strokes. Determination of etiology with proper diagnostic and treatment approach will give a better outcome, reduce disability and fatality rate while improving quality of life. Further cognitive evaluation should be performed to determine sequelae of the disease.

Keywords : Bilateral Thalamic Infarct, Artery of Percheron, Altered Consciousness, Recovery

ID_41 Case Report

Serial Case Reports : Important of DSA (Digital Subtraction Angiography) to Detect Macrovasculer Causes in Young Age

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Abstract

Background

Intracerebral haemorrhage (ICH) is a devastating condition whereby a hematoma is formed within the brain parenchyma with or without blood extension into the ventricles. Risk factors of ICH include chronic hypertension, amyloid angiopathy, anticoagulation, and vascular malformations.1 Each year, over 1.9 million of all strokes occur in people 15-49 years of age, over 23% of all intracerebral haemorrhages occur in people 15-49 years of age.2 Early neurological deterioration in ICH happens within the first few hours of onset. Thus, rapid management including diagnostic work-up needs to be performed.3 Digital subtraction angiography (DSA) is considered the reference standard in ICH where a secondary cause is suspected.4

Case Summary

First case, a 17-years old female patient presented with left-sided weakness that occurred suddenly 8 hours prior to admission, there was a slurred speech and drooping of the face. A non-contrast CT scan (NCCT) of the brain there was ICH of the internal capsule, brain edema, and intraventricular haemorrhage (IVH) filling the anterior horn of the right lateral ventricle, third-, and fourth-ventricle. On CT angiography, there was no stenosis, aneurysm, or intracranial arteriovenous malformation (AVM). Afterwards, DSA revealed a small tubular AVM of feeding arteries from the right communicating artery and deep cerebral venous drainage. Therefore, our patient was diagnosed as subcortical ICH CVA, IVH, and AVM rupture. Second case, a 29-years old male patient presented with left-sided weakness that occurred suddenly 2 days prior to admission. A non-contrast CT scan of the brain there was ICH of the right centrum semiovale, right parietal lobe, and subarachnoid haemorrhage (SAH) of the right parietal sulcii. On CT angiography, there was suspect a saccular aneurysm in the A4 branch a. right anterior cerebri. Afterwards, DSA revealed a small AVM of right frontal region with feeding right anterior artery pericalossal branch and cortical venous drainage.

Discussion

Contemporary CT is generally used for hyperacute stroke imaging. Moreover, NCCT allows to quantify hematoma volume and monitor haemorrhage evolution in ICH.3 However, NCCT alone cannot reliably predict the presence of an underlying vascular lesion. Cerebral AVM is an abnormal connection between the arteries and veins in the brain when they connect directly without having capillaries in between. CT angiography has a high AVM detection rate.4 MRA can provide data non invasively without detailing factors. At present the most effective diagnostic tool is intra-arterial DSA which shows the origin, orientation, and course of feeding arteries and draining veins, location, size and morphology of nidus and eloquence of the adjacent brain region. Catheter intra-arterial DSA remains the gold standard to search for macrovascular causes of ICH and appears to have the highest diagnostic yield as an adjunct or alternative to CT-based or magnetic resonance–based vascular imaging. 6 DSA not only help the proper diagnosis of cerebral AVM but also help in embolization and other treatment procedure.5

Conclusion

Despite the significant advances in the field of non-invasive neurovascular imaging, cerebral DSA remains the most accurate technique for the diagnosis of vascular disorders of the central nervous system to clarify suspicious findings by MRA and CTA.

Keywords : Intracerebral haemorrhage, CVA, Digital Subtraction Angiography, arteriovenous malformation

ID_42 Research

Clinical Characteristics of Hyperkinetic Movement Disorders at Cipto Mangunkusumo Hospital

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Abstract

Background

Hyperkinetic movement disorder is excessive, abnormal, and mostly uncontrollable movement. Based on phenomenology, hyperkinetic movement disorders are divided into tremors, myoclonus, dystonia, chorea, ballismus, athetosis, tics, and other movement disorders. This study aims to determine the characteristics of cases of hyperkinetic movement disorder in RSCM

Method

This study used a cross-sectional design, with hyperkinetic movement disorder patients who were treated at the neurology polyclinic of Dr. Cipto Mangunkusumo Hospital, Jakarta, in the period December 2020 - January 2022. Data were taken based on secondary data from medical records.

Result

This study involved 92 subjects, the majority were female subjects (68.5%). Most of the subjects were aged

Discussion

This study found that the two most common phenomenologies were tremor and dystonia, quite similar to other studies that showed tremor, especially essential tremor, as the most common movement disorder. Subjects with tremors and hemifacial spasms have the highest number of vascular comorbidities, but no significant correlation was determined. Consistent with several studies, acquired etiologies were the majority. Vascular lesions were the most common, followed by space-occupying lesions, infections, or drug-induced, which varies in each study. Psychiatric and sleep disorders were often to be reported in hyperkinetic movement disorder, including anxiety and insomnia, due to the clinical part of the syndromes itself, or related to the medical treatment.

Conclusion

Hyperkinetic movement disorder has various phenomenology with different epidemiology and etiology. Although there are some cases with undetermined or idiopathic etiology, the predominance of vascular etiology indicates the importance of controlling vascular risk factors to prevent the occurrence or aggravation of symptoms of hyperkinetic disorders.

Keywords : Hyperkinetic, phenomenology, movement disorder, tremor

Probable Creutzfeldt-Jakob Disease: A Rare Case Report

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Abstract

Background

Creutzfeldt-Jakob Disease (CJD) is rare, fatal degenerative brain disorder of the nervous system known as transmissible spongiform encephalopathies or prion diseases. Most cases of CJD are sporadic, but can be transmitted either by iatrogenic or familial. CJD as a life-threatening neurodegenerative disorder is not usually diagnosed in early stages of the disease because of its various clinical manifestations.

Case Summary

We reported a 57 year-old female presenting with altered consciousness. The patient has a four month history of rapidly progressive dementia, fatigue, speech disorder, involuntary movement and hemiparesis. Upon neurological examination, the patient had a Glasgow Coma Scale (GCS) of 10 (eye: 3 motor: 5 verbal: 2), left cranial nerve VI palsy, and left hemiparesis with motor score of 2 and 3. Brain magnetic resonance imaging (MRI) with contrast and angiography showed cerebral atrophy and normal angiography. Routine cerebrospinal fluid (CSF) analysis after lumbar puncture (LP) was performed along with several infectious and autoimmune diseases (Cytomegalovirus, Herpes Simplex Virus, Mycobacterium Tuberculosis, NMDA receptor antibody) and returned normal. Microbiology CSF analysis (Gram stain, India Ink, Ziehl Neelsen) were also normal. Subsequently electroencephalogram (EEG) was performed on the patient and found generalized periodic epileptiform discharges (GPEDs). The patient was given citicoline 500mg BID, gabapentin 100mg TID,clonazepam 1 mg BID, methylcobalamin 500 mg TID.

Discussion

CJD is a life threatening neurodegenerative disorder which is caused by an abnormal form of host encoded proteins. Cognitive impairment is the most common initial presentation of this disease and may be observed in 35% of patients. Since there is a great variation in the symptoms of the disease, diagnosis of CJD is always challenging, especially in the early stages. CJD occurs predominantly in the United Kingdom, United States, France, and has been linked to the consumption of beef products contaminated with bovine spongiform encephalopathy (BSE). CJD usually affects older individuals with a peak age of onset between 55 to 75 years old, the median duration of illness is 4 to 5 months. Mean survival is six months, and over 70% of patients die within 1 year of onset. CJD presents with symptoms similar to dementia with early neurological signs but with rapid progression. Memory problems, behavioral changes, mood swings, sensory changes such as incoordination, rapidly worsening confusion, disorientation, involuntary jerky movement and extrapyramidal symptoms. Patients gradually lose mobility, speech and develop into a coma state. Brain magnetic resonance imaging (MRI), Cerebrospinal Fluid (CSF) analysis, Electroencephalogram (EEG), brain tissue biopsy or post mortem examination of the brain are several modalities for diagnosis. Treatment for CJD is symptomatic and supportive care. This case was diagnosed as probable CJD. The main findings were rapidly progressive dementia, involuntary movement, and speech difficulty. EEG and MRI findings support the diagnosis.

Conclusion

Although CJD is not a common disease, it should be considered in differential diagnoses whenever neuropsychological manifestations, especially progressive decline in cognition, along with symptoms such as altered consciousness, myoclonus, and speech difficulties are observed in the patient.

Keywords : Creutzfeldt-Jakob disease, neurodegenerative disorders

ID_44 Research

Clinical Profile of Subdural Hematoma Patients: A Study in Pasar Minggu Regional General Hospital Jakarta

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Abstract

Background
Subdural hematoma (SDH) is usually caused by head injuries and is a major cause of morbidity and mortality. We conducted a study to determine the profile of patients with SDH at the Pasar Minggu Regional General Hospital.

Method
This was a descriptive study based on the medical record of SDH patients of those ≥18 years of age, who were hospitalized at Pasar Minggu Regional General Hospital between January 2016 and October 2022.

Result
There were 86 research subjects. Most of them were men (69.8%), aged between 56-65 years (31.4%), and the most common comorbid was hypertension (30.2%) followed by type 2 diabetes mellitus (22.1%). Most of the patients had a history of previous head trauma (66.3%), while a history of taking anticoagulants or antiplatelets was only found in 15.1% of patients. Most of the patients had a Glasgow coma scale (GCS) score of 14-15 (45.3%). The most common type of SDH was acute (68.6%). Midline shift was found only in a minority of patients (36%). The operative procedure was found in 40.7% of patients. Mortality of SDH was 32.6% and for patients who were alive, the highest Glasgow outcome scale (GOS) score was 4 (moderate disability) (36%).

Discussion
Acute SDH was mostly found in this study. This is consistent with the characteristics of the patient's age was in the range of 56-65 years. It is known that chronic SDH is more common at the ages > 60 years. Men experience SDH more often because they are considered more active so the risk of SDH due to head injury increases. Consistent with the results of the study that most of them had a history of previous head injuries. The patient outcomes in this study were quite good. This is consistent with the characteristics of the patients, most of them have high GCS values at hospital admission and only a small number of patients had a midline shift in computed tomography scan of the brain. High mortality of SDH can be related to the patients who refused surgery.

Conclusion
SDH occurs more frequently in males with the most common risk factor was head injuries. SDH mortality remains high, and those who survive have moderate disabilities

Keywords : Subdural hematoma, clinical profile, mortality

ID_45 Research

Characteristics of Hyponatremia and Hypokalemia in Acute Ischaemic Stroke

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Abstract

Background
Stroke continues to be a major burden disease as well as the leading cause of disability and the second-leading cause of death globally. Hyponatremia and hypokalemia are the most common complications that can cause seizures and even death. Therefore, this study aimed to describe the characteristics of hyponatremia and hypokalemia in acute ischemic stroke patients

Method
This study is a cross-sectional study conducted from January 2022–August 2022 at RSCM. Evaluation of electrolyte levels in the form of sodium and potassium is carried out in acute ischemic stroke patients who are clinically diagnosed and have undergone imaging, either a CT scan or an MRI of the head, when they first come to the hospital.

Result
This study involved 83 acute ischemic stroke patients. The mean age in this study was 58.55 ± 13.80, consisting of 54.2% males and 45.8% females. Electrolyte disturbances occurred in 53% of acute ischemic stroke patients, with hyponatremia occurring in 38.5% of cases and hypokalemia in 24% of cases. Electrolyte disturbances are more common in patients with hemiparesis who have either hyponatremia or hypokalemia. The severe category of the National Institute of Health Stroke Scale (NIHSS) score revealed hyponatremia (387.7%), while the moderate category revealed hypokalemia (45%)

Discussion
Hyponatremia and hypokalemia are electrolyte disturbances that often occur in patients with acute ischemic stroke. This can occur due to an imbalance in the hormone antidiuretic hormone (ADH), an increase in brain natriuretic peptide (BNP), or an increase in atrial natriuretic peptide. In addition, electrolyte disturbances can occur due to increased renal excretion of various cations

Conclusion
Complications in the form of electrolyte disturbances such as hyponatremia and hypokalemia can occur in patients with acute ischemic stroke. Acute ischemic stroke can cause either focal or global neurological deficits. In this study, the dominant clinical symptom of hyponatremia and hypokalemia was hemiparesis. The severe score category based on the NIHSS score is more commonly found in patients with hyponatremia, while the moderate category is more often found in patients with hypokalemia

Keywords : Acute ischaemic stroke, hyponatremia, hypokalemia, hemiparesis, NIHSS

ID_46 Case Report

Progressive Choroid Plexus Papilloma in An Adult Male: A Case Report

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Abstract

Background

Choroid plexus papilloma is a rare tumor arising from neuroectoderm. It is the third most common brain tumor in pediatric population, however, it is found in all ages. The tumor is mostly intraventricular but intraparenchymal variant has been reported. Progression in grading is rare but documented. Studies on choroid plexus papilloma are still limited. This paper reports a case of progressive choroid plexus papilloma in adulthood.

Case Summary

A 36 years old male presented with progressive headache followed by generalized seizure and visual disturbance. Imaging shows a mass in the right thalamus extending into the lateral ventricle, causing hydrocephalus. The patient underwent ventroperitoneal shunt followed by tumor removal surgery. Histology results are consistent with choroid plexus papilloma. After 1 month with no symptom, the patient reexperienced bouts of headache. Magnetic resonance imaging (MRI) shows that the mass has regrown accompanied by intraventricular hemorrhage. Histologic studies of the second tumor removal surgery are consistent with atypical choroid plexus papilloma. The patient was then referred to Dharmais National Cancer Center Hospital, where MRI two months after the second surgery showed that the volume of the mass has increased. Therefore, another surgery is planned for the patient, followed by chemotherapy.

Discussion

While choroid plexus papilloma most commonly occurs in children with median of 3.5 years old, it is still found in adults with the average of 39.9 years old. As seen in this case, hydrocephalus is the most common mechanism causing the presenting symptoms. As it is a highly vascularized tumor, intraventricular or subarachnoid hemorrhage often occurs. Progression is rare but is possible. The treatment of choice is resection followed by adjuvant chemotherapy if necessary

Conclusion

This is an interesting and rare case of choroid plexus papilloma in adulthood which progresses in grading. Further studies are needed to determine the epidemiology and risk factors of progressive choroid plexus papilloma.

Keywords : choroid plexus papilloma, atypical, adult, progressive

ID_47 Case Report

Hyponatremia In Traumatic Brain Injury: How To Safely Approach?

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Abstract

Background

Hyponatremia is an electrolyte disturbance that often occurs in traumatic brain injury (TBI) caused by central nervous system disturbances of water and homeostasis regulatory function. It is often caused by either cerebral salt wasting syndrome (CSWS) or syndrome of inappropriate antidiuretic hormone (SIADH). Although CSWS is a rare condition which incidents varies from 0.8 to 34.6% than SIADH (22.9% vs 35.4%), it is difficult to distinguish because of similarities in symptoms, signs, and laboratory findings. Without careful confirmation of whether it is caused by massive salt disposal through urine output in CSWS, or by fluid retention and hemodilution in SIADH, wrong treatment approach will cause a devastating outcome.

Case Summary

An unconscious 21-year-old man was brought to the emergency room after a motor vehicle accident. He was diagnosed with subarachnoid hemorrhage (SAH) and an epidural hematoma (EDH) and subsequently underwent an uneventful craniotomy for hematoma evacuation. During the course of his hospitalization, he became frequently agitated and laboratory examinations showed a quick progression of moderate to severe hyponatremia 2 days later from 127 mmol/L to 117 mmol/L. A polyuria with urine output up to 9450 cc/24 hours and high urinary sodium level up to 607 mmol/L were also observed. We identified CSWS as the cause of the patient's condition and treated the patient using isotonic and hypertonic infusions, along with adjuvant intravenous hydrocortisone, followed by a rapid improvement of the patient's conditions. His symptoms were stabilized, his blood sodium serum level was improved to 135 mmol/L and urine output to 5400 cc/24 hours.

Discussion

It is important to differentiate between CSWS and SIADH in acute hyponatremia to prevent wrong treatment that may cause secondary damage to the brain. The key diagnostic measure is patient volume status since both conditions will show similar pattern of sodium level in serum and urine. CSWS is characterized by a hypovolemic state with polyuria and excessive urinary sodium excretion, whereas SIADH shows excess fluid with oliguria and high urine sodium due to increased secretion of antidiuretic hormone (ADH). Polyuria and high urinary sodium level in our patient led to a diagnosis of CSWS. Management of CSWS includes volume and sodium replacement that may also require 3% normal saline or sodium supplements, and mineralocorticoids, namely fludrocortisone. This is contrary to the management of SIADH which emphasizes fluid restriction, sodium replacement, diuretics, and management of the underlying causes. In addition to standard fluid therapy, hydrocortisone was administered, due to the unavailability of fludrocortisone. Hydrocortisone was chosen over other glucocorticoids due to its highest mineralocorticoid effect.

Conclusion

CSWS should be considered in TBI patients with hyponatremia. A systematic and comprehensive examination is the main key to the CSWS diagnosis followed by prompt treatment for an excellent overall outcome and prognosis.

Keywords : Cerebral Salt Wasting Syndrome, Hyponatremia, Syndrome Of Inappropriate Antidiuretic Hormone, Traumatic Brain Injury

ID_49 Case Report

Acute Hypokalemic Tetraparesis in A 27-Year-Old Indonesian Male with Hyperthyroidism: A Case Report

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Abstract

Background

Hypokalemic thyrotoxic periodic paralysis (TPP) is a rare but treatable complication of thyrotoxicosis, characterized by a triad of acute muscle weakness, hypokalemia, and thyrotoxicosis. Incidences varied in the Asian population ranging from 1.8% in Chinese to 1.9% in Japanese. Despite of high prevalence of thyrotoxicosis in women, TPP is more commonly found in men with a ratio of 17:1 to 70:1, presumably due to testosterone's effect on the Na/K ATPase channel.

Case Summary

An Indonesian male, aged 27 years old, presented to the emergency department with painless muscle weakness in his lower limbs four hours before admission. He could neither stand nor raise his lower limbs, progressing to upper limbs muscle weakness two hours later. He denied any pain, hypesthesia, paresthesia, fever, diarrhea, nausea, vomiting, cough, dyspnea, recent travel, or exposure to COVID-19 patients. One day before admission, he had more work than usual at the construction site and ate more high-carbohydrate diet. He also complained similar symptoms on 9 and 10 months before admission. On presentation, he was composmentis with normal vital signs, normoweight (BMI of 22.5 kg/m2), and slightly diffuse thyroid gland enlargement without any lymph nodes enlargement. Neurological status revealed flaccid tone extremities with decreased extremities muscle strength (444/444 of upper extremities, and 222/222 of lower extremities), depressed deep tendon reflexes, without any pathological reflexes. Laboratory showed normal routine hematology examination, normal glucose level (127), normal natrium (137 mmol/L), chloride (103 mmol/L), and calcium (11,1 mg/dL) level with moderate hypokalaemia (2.8 mmol/L). Extremely low TSHs (100 pmol/) were found in his thyroid panel examination. ECG displayed no arrhythmia while chest x-ray showed no pulmonary and cardiac abnormalities. Symptoms and signs were gradually relieved after receiving kalium chloride infusions 25 meq/L/day in two days, mecobalamin injection 500 mcg/24 hours, kalium chloride 600 mg/8 hours per oral, propranolol 10 mg/8 hours, and thiamazole 20 mg/12 hours. Immediate physical therapy and rehabilitation were applied according to his compliance, beginning with gradual mobilization, extremities muscle strengthening, and deep respiratory exercise. After three days of care, he was discharged with normal muscle strength (555/555 555/555) and another neurological status.

Discussion

In contrast to uncontrolled thyroid laboratory results, the patient showed nearly normal thyroid glands appearance. The exact mechanism of periodic paralysis induced by hyperthyroidism remains unclear, but it is highly assumed that excessive circulating thyroid hormone triggered intense Na/K ATPase channel activities in skeletal muscle which gives rise to intracellular shifting of kalium and induces hyperpolarization of the muscle cell membrane, leading to muscle weakness. Therefore, immediate administration of moderate dose of kalium supplementation may revert muscle weakness. Antithyroid medication promotes rapid muscle recovery and prevents further complications such as arrhythmia in TPP. Propranolol is also beneficial for treating tachycardia as well as interfering Na/K ATPase pumps.

Conclusion

Electrolyte and thyroid laboratory examination should always be considered in a patient, especially in the Asian population, with acute flaccid tetraparesis in the setting of limited resources health center without any neurophysiological tools or advanced additional examination supports.

Keywords : periodic paralysis; thyrotoxicosis; hypokalemia; channelopathy

ID_50 Case Report

Sturge-Weber Syndrome: A Rare Case Report of a Two-Month-Old Infant

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Abstract

Background

Sturge-Weber Syndrome (SWS), also called encephalotrigeminal angiomatosis, is a rare congenital disorder characterized by abnormalities affecting the brain, skin, and eyes. We report a newly diagnosed case of an infant with SWS with focal seizures, port-wine stain, and glaucoma.

Case Summary

A two-month-old baby girl presented to the emergency department with recurrent seizures that lasted for 5 minutes followed by loss of consciousness. The seizures typically occurred on the left side of the body. There was no history of fever, cough, vomiting, and head trauma. Physical examination showed purple lesions over the skin (port-wine stain) on the right side of the face. Neurological examination found no focal neurologic deficits. Ophthalmological examination revealed glaucoma in the right eye. Brain computed tomography (CT) showed calcification in the temporal lobe and brain atrophy in the frontotemporal lobe. Electroencephalogram (EEG) showed slow amplitude and infrequent sharp waves asymmetrically in the right hemisphere suggestive of a structural lesion in the right hemisphere. After considering the history, clinical findings, and investigations, we diagnosed the patient with SWS. Intravenous phenytoin 15 mg was given twice a day and gradually she regained consciousness. After several days she was discharged with oral valproic acid 45 mg twice a day to control seizures and advised by the ophthalmologist to undergo surgery in a referral hospital.

Discussion

Sturge-Weber Syndrome (SWS) is a rare congenital disorder related to a somatic mutation in the GNAQ gene that controls the development of blood vessels. The diagnosis is established on the findings of typical clinical symptoms and neuroimaging. The most common cutaneous manifestation is port-wine stain, usually unilateral and distributes in ophthalmic and maxillary branches of the trigeminal nerve. Focal seizures, occurring contralateral to the neurocutaneous abnormality, are mainly the first neurological symptom in 70%-90% of patients. It was seen in our patient who had purple lesions on the right side of the face and focal seizure on the left side of the body. Ophthalmological examination found epiphora, photophobia, and buphthalmos caused by elevated intra-ocular pressure due to glaucoma. Glaucoma is the most common ocular abnormality in SWS with the presence of an ipsilateral port-wine stain. Cerebral atrophy associated with gyriform hemispherical calcifications in brain CT is enough to confirm the diagnosis if the typical clinical symptoms are present. Another investigation modality is EEG to assess brain function. Almost 75% of children with SWS encounter the first onset of a seizure before one year of age and has been associated with worse neurological outcomes, hence controlling seizures with anti-epileptic drugs as the first-line therapy remains the main goal of SWS treatment.

Conclusion

SWS is a rare congenital disorder that requires multidisciplinary clinical teams due to its complexity. Early diagnosis and management of SWS are necessary to improve patients' quality of life.

Keywords : Sturge-Weber Syndrome; encephalotrigeminal angiomatosis; port-wine stain; seizures; infant

ID_51 Research

Incidences of Mild Cognitive Impairment of Amnestic and Non-Amnestic Types in The Elderly Population at Uabau Health Center

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Abstract

Background
Mild Cognitive Impairment (MCI) refers to mild cognitive impairment resulting in decreased memory function without interfering daily activities. A decrease in memory and impaired orientation of place and time attributed to MCI will increase the risk of injury among the elderly in their everyday lives. Recognizing th e incidence of MCI at an early stage is very critical, whereby discovering MCI patients earlier may inhibit disease progression and improve the quality of life of the patient.

Method
This study was conducted using a cross-sectional method with data collection through interviews using the Mini-Mental State Examination Indonesia (MMSE-Ina) questionnaire. A total of 135 subjects comprising pre-elderly (45-60 years) and elderly (>60 years) age groups in the Uabau Health Center working area were enrolled in the study using consecutive random sampling. Sample selection was according to the eligibility criteria. Bivariate analysis was carried out to determine the incidence of amnestic and non-amnestic type MCI.

Result
Incidence of MCI obtained was 47.3% (64 people), which was predominantly female in the elderly group >71 years with comorbidities (diabetes mellitus, hyperuricemia, stroke), and without hypertension and dyslipidemia comorbidities. Single-domain amnestic MCI was found in 3.1% samples, multiple-domain amnestic MCI in 57.8%, multiple-domain non-amnestic MCI in 39.1%, while in the elderly group there was no single-domain non-amnestic MCI.

Discussion
In women, cognitive impairment is related to decreased IADL (Instrumental activities of daily living) abilities, mutations in the ApoE4 gene (Apolipoprotein allele-E4), low level of education is related to the capacity and number of brain synapses, increasing age is associated with decreasing brain volume and weight, comorbid diabetes causes metabolic disturbances resulting in decreased synthesis and release of acetylcholine and other neurotransmitters in the brain, hyperuricemia which can damage the vascular endothelium under certain conditions because uric acid also has pro oxidant properties, and a history of stroke is more at risk for developing dementia influenced by the size of the lesion, produced after stroke and the number of histories of recurrent strokes. Hypertension has a close relationship with decreased cognitive function, but hypotension is not a protective factor other than the fact that fat metabolism is associated with the pathogenesis of dementia and vascular dementia. In this study, those with dyslipidemia had more severe cognitive impairment than those with MCI.

Conclusion
The incidence of MCI among the elderly population `at Uabau Health Center is notably frequent, which requires particular concern from an early age in order to prevent them from developing more severe cognitive impairment.

Keywords : incidence, elderly, mild cognitive impairment, amnestic, non-amnestic

ID_53 Research

Correlation of Blood Chloride Levels and Outcomes of Head Trauma Patients

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Abstract

Background
Chloride is important for muscle activity, osmosis, acid-base maintenance, ad immunomodulation. In patient with head trauma, chloride level is associated with poor outcome. In this study, we will discuss the effect of chloride level, whether it is associated with increased mortality in patient with traumatic head injury

Method
This study had been done in Kandou Hospital in Manado, North Sulawesi. We retrospectively collected data from 2021, the data were grouped according to the severity of the head injury, chloride levels, and patient outcomes.

Result
We analysed 120 patients, and from that samples we found the death rate was 23.3%, all of which were severe head injuries, and 19.1% had abnormal chloride values. Of the number of the patients who dies, 46.6% experienced chloride level disturbances, which 21.4% had hypochloremia and 25% had hyperchloremia.

Discussion
Chloride is major anion in blood, approximately one-third of plasma tonicity and two-third plasma negative charges. It has important role in maintaining body function, such as maintaining acid-base balance, muscle activity, osmosis, and immunomodulation. Despite its importance, chloride has received much less attention than other routine electrolytes such as sodium and potassium. In experimental studies, hypercloremia induce an increase in circulatory inflammatory molecule, and associated in mortality of critically ill patients.

Conclusion
Chloride were independently associated in mortality of major trauma patients. These datas might be useful to predict mortality in patients who has major trauma. However, data from larger, prospective, and controlled studies are needed for greater reliability

Keywords : Traumatic brain injury; chloride; mortality

ID_55 Case Report

A Case Report: Malignancy-Associated HMGCR-Seropositive Immune Mediated Necrotizing Myopathy Resembling Muscular Dystrophy

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Abstract

Background

Immune-mediated necrotizing myopathy (IMNM), a subtype of idiopathic inflammatory myopathies (IIM), is challenging to diagnose and prone to delayed treatment. A small proportion of IMNM exhibit clinical phenotypes such as isolated hyperCKemia, dermatomyositis-like skin lesions, and Jessner Kanof disease that mimic LGMD. This case is an illustration of HMGCR-seropositive IMNM.

Case Summary

A 25-year old female presented with a 3-year history of symmetrical proximal weakness of four extremities that worsened since 1 month prior to admission. Muscle weakness improved with glucocorticoid administration for a year. She developed hoarse voice, difficulty swallowing and chewing 3 months prior to admission. She had a 3-year history of small, painless lumps on her neck that grew insidiously and two-time history of abortion, suspected due to toxoplasmosis. No remarkable family history, use myotoxic drugs, including statins, or consanguinity were found. She had multiple neck lymphadenopathy and proximally predominant, symmetrical weakness of four extremities. Initially no dermatologic findings were found, however in her later course Gottron's sign, Gottron's papules, Holster sign, face rash in the malar area, pruritus and nailfold capillary telangiectasia were found. Skin biopsy was unavailable. Further diagnostic studies revealed elevated CK (4670 U/L). Electromyography displayed myogenic lesions with positive sharp waves and fibrillation. MRI depicted edema of perfascia and vastus muscles, adipose infiltration in paraspinal, gluteus, and thigh muscles representing a long standing disease course. MSA and MAA were positive for anti-HMGCR (+++), anti-PL-12 (+++), anti-Ku (++) and anti-Ro-52(++). HRCT thorax rules out interstitial lung disease (ILD), and cardiovascular evaluations were normal. Histopathologic analysis of biopsy from biceps femoris muscle shows areas with variation in myofiber size, fibrosis, fatty infiltration, and central necrosis peripheral regeneration without prominent inflammatory cells infiltration. The neck lump was pathologically proven as poorly differentiated non-keratinous squamous cell carcinoma and is awaiting treatment. Treatment with high dose pulse intravenous methylprednisolone for three days and later switched to high dose oral methylprednisolone & mycophenolate sodium improved muscle strength. Seven months after her first visit, she experienced exacerbating weakness; intravenous immunoglobulin was administered over a 5-day course and she was discharged with clinical improvement.

Discussion

The patient displayed chronic progressive limb-girdle muscle weakness and hyperCKemia that mimic LGMD. Improvement with glucocorticoid administration was a clue for IIM, prompting us to check MSA. Although multiple autoantibodies were detected, the absence of ILD, Raynaud's phenomenon, and other extraskeletal muscle involvement, highlighted HMGCR as the relevant antibody. IMNM
was the likely subtype due to hyperCKemia with absence of dermatomyositis-like skin lesions initially. Although it appeared in the later course, absence of dermatomyositis-specific autoantibodies and perifascicular atrophy in histopathology concludes IMNM with dermatomyositis like lesions. Full battery muscle pathology evaluation is required to increase diagnostic confidence. HMGCR-seropositive IMNM has an increased predisposition for malignancy, especially nasopharyngeal carcinoma in the Asian population, therefore should be scrupulously explored as definitive malignancy management will affect the disease course.

Conclusion

Young adults with slowly progressive proximal muscle weakness with hyperCKemia must be evaluated for possible HMGCR-seropositive IMNM. MSA carries important clinical information; and histopathologic studies help exclude myositis, which is commonly mistaken for LGMD.

Keywords : IMNM, HMGCR, malignancy, LGMD

ID_56 Case Report

Brain abscess due to Serratia Fonticola : A Rare Case Report

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Abstract

Background

Brain abscess experienced by immunocompetent individuals, > 95% of cases are caused by bacteria. Brain abscesses are commonly caused by polymicrobials, including gram-positive and negative bacteria. Among the bacterial causes, infection with Serratia sp. Currently, only 1 case was reported in a 4-year-old boy with cerebellar abscess due to Serratia fonticola infection.

Case Summary

54-year-old Female was unconsciousness since 2 days accompanied by chronic progressive cephalgia and fever since last 2 months. History of right otitis media and mastoiditis in last 2 months. Significant findings on neurological physical examination was left hemiparesis. Magnetic resonance imaging (MRI) of the head with contrast were revealed a peripherally enhancing cystic lesion in right temporal lobe with perifocal edema and right otitis media, directly related to intracerebral lesions. The patient received empiric therapy with metronidazole 4x500 milligram and ceftriaxone 2x2 gram intravenously. The patient underwent craniectomy surgery and pus culture was performed with Serratia fonticola culture results. The isolate was susceptible to ceftriaxone, tigecycline, and imipenem. The patient received definite antibiotic therapy with tigecycline 2x50 milligram intravenously. The patient was declared dead on the 36th day of intensive care due to sepsis.

Discussion

In this patient, a brain abscess was diagnosed due to typical triad of symptoms of fever, headache and neurological deficits. Brain abscess can develop from three sources. First, due to spread of infection from a pericranial focus, second due to hematogenous spread, and third due to direct inoculation due to trauma or neurosurgical procedures. Continuous infection from pericranial infection is the cause of abscess in 25-50% of cases, which includes ethmoid or frontal sinusitis, subacute and chronic otitis media or mastoiditis. Brain abscesses due to complications of pericranial infections in the ear are usually 55-70% located in the temporal lobe and 20-30% located in the cerebellum. Most otogenic brain abscesses are solitary lesions. Management of brain abscess includes administering broad-spectrum empiric antibiotics, either with or without surgery and blood culture sampling. If surgery can be performed, pus culture should be done immediately to determine the isolated bacteria and antibiotic susceptibility test must be done. Case reports of Serratia fonticola in brain abscess are very rare, as an isolated bacteria in brain abcess and further review is needed to better characterize these bacteria so as to treat them appropriately and improve the prognosis.

Conclusion

Brain abscess caused by Serratia fonticola is a rare case. Determining the diagnosis through history, examination and microbiological examination such as culture must be done carefully in an effort to provide the right treatment and improve the prognosis.

Keywords : brain abscess, Serratia fonticola, pericranial infection

ID_57 Case Report

Non-Operative Management of Multiple Cerebellar Abscesses; A Case Report

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Abstract

Background
Multiple cerebellar abscess are quite rare cases and often not detected. Cerebellar abscess is a suppurative infectious disease that forms a capsule called an abscess located in the cerebellum. Published literature reveals that approximately 25% of all brain abscesses are seen in childhood. The cause is a chronic infection around which is not treated properly such as middle ear infections, teeth, and mastoid bone infections. Treatment includes medical management with appropriate and specific antimicrobials.

Case Summary
A 13-year-old male patient was admitted to Emergency Unit with complaints of severe headache, gait disturbance, dizziness, imbalance, and fever that had started two weeks. On determining the medical history of the patient, it was learned that he had intermittent ear discharge and hearing loss 2 years ago, he didn't get treatment. On physical examination of the patient horizontal-rotatory nystagmus was existent with a slow phase of movement towards the left and a fast phase towards the right, cranial nerve six palsy in the right eye. the Brain CT scan shows multiple hypodense lesions were seen in the right cerebellar lobe. Patients were given the same regimen of antibiotics for three weeks, a combination of broad-spectrum were Ceftriaxone Metronidazole, and Vancomycin. And then, evaluated on a clinical and radiological basis via computed tomography (CT) Sixth weeks after treatment was initiated, No abscesses were detected in either patient; clinically, there were no complaints or neurological deficits. Patient had a good response for antibiotic treatment.

Discussion
Incidence of multiple brain abscesses in all intracranial abscesses is about 2 to 15% and carry a mortality rate of 62 to 100%. Multiple brain abscesses are often caused by hematogenous spread of bacteria from a primary source and are frequently found in the territory of middle cerebral artery. The patient had intermittent ear discharge and hearing loss 2 years ago didn't get treatment was the risk factor of this condition and can be otogenic brain abscesses. where the prevalence of chronic suppurative otitis media (CSOM) is reported to be in the range of 30-40% and 0.5%-1% of developing brain abscess. Otogenic brain abscess affects usually children more than adults. The classic triad of headache, fever, and focal neurologic deficit is seen in only 9–28% of children. Empirical therapy in patients with brain abscess are Third generation cephalosporin (Ceftriaxone and cefepime), Metronidazole and Vancomycin (against Methicillin-Resistant Staphylococcus aureus) if the culture and sensitivity are unknown. Antibiotics are quite effective in early and late cerebritis stage but their efficacy is reduced in the stage of capsule formation due to acidic medium in the abscess cavity and the inability to have adequate therapeutic concentration of antibiotic within the abscess. If abscesses are < 2 cm in diameter, antibiotics alone may be tried, but must then be monitored with serial CT scan abscesses enlarge after being treated with antibiotics.

Conclusion
Successful management of childhood brain abscess with acceptable outcome is dependent on early diagnosis and intervention, the rational use of antimicrobial therapy

Keywords : Cerebellar abscess, Nystagmus, Ceftriaxone, Metronidazole, Vancomycin.

ID_58 Case Report

Clinical Improvement After Multimodal Neurorestorative Intervention in Sub Acute Cerebellar Infarction: A Case Report

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Abstract

Background

Cerebellar Ataxia (CA) develops in a majority of patients with cerebellar stroke, with an estimated prevalence ranging from 51.3% to 67.5%. Scale for Assessment and Rating of Ataxia (SARA) is an assessment tool for the severity of ataxia and disease progression, consisting of evaluation of gait, stance, sitting, speech, tremor, dysmetria, upper-lower extremity, and dysdiadochokinesia. Currently, there are no approved medications for CA patients, and it poses a therapeutic challenge for practitioners.
This is a case report of sub-acute cerebellar infarction, showing improved outcomes after a combination of several neurorestorative interventions.

Case Summary

A 40-year-old woman complained of right hemiparesis, impaired right-hand coordination, tremor, and dysarthria one month before the presentation. CT scan revealed infarction in the right cerebellum. The patient then underwent a complete session of rTMS and physiotherapy. The treatment protocol was delivered 10 times at 100% of the maximum stimulator output and applied to the following areas in a fixed order: (1) coil centered 4 cm laterally to the right of the inion, (2) coil centered 4 cm laterally to the right of the inion, and (3) coil centered 4 cm laterally to the left of the inion. For each region, five pulses separated by the first six seconds are sent with the current flowing counterclockwise followed by five pulses clockwise, for a total of 30 pulses per session. Physiotherapy includes the Feldenkrais modality for body awareness mobility and somatosensory training. Exercise games were given based on virtual reality methods for 10-15 minutes in each session. SARA score before treatment was 20.5, one week after treatment was 12.5, and two weeks after treatment was 7.

Discussion

Our case highlights the improvement of the SARA after a consecutive session of rTMS, physiotherapy, and virtual reality-based therapy. The result was in line with the latest systematic review and meta analysis published in 2023 which suggested that rTMS over the cerebellum could be a viable therapy for symptoms associated with CA. Studies reported that the combination of the Feldenkrais method and somatosensory training significantly improved the limited patient's stability and influenced the dynamic balance ability through functional stretching. Exercise games were also reported can be used as a complementary training option to improve postural control in CA patients. We believe that a combination of these modalities will improve the patient's outcomes.

Conclusion

Improvements in SARA were seen in CA patients after a consecutive session of rTMS and physiotherapy.

Keywords: Ataxia, SARA, Neurorestorative, rTMS, Physiotherapy, Virtual Reality.

ID_59 Case Report

Meningoensefalitis and Toxoplasmosis in A Non-HIV Patient

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Abstract

Background

Meningoencephalitis is an inflammation of the brain parenchyma with meningeal structural involvement. Toxoplasma gondii, an intracellular protozoan parasite, is the source of the infection known as toxoplasmosis. The most frequent cases of toxoplasmosis to be documented are in immunocompromised conditions such as HIV infection, chemotherapy, and bone marrow transplant. The patient, in this case, had meningoencephalitis, and toxoplasmosis in a non-HIV Patient.

Case Summary

A 41-year-old woman was treated at H. Moch Ansari Saleh Hospital with complaints of chronic headache for four months, radiating to the neck area, throbbing, intermittent, trigger unclear, improved slightly with taking medication. The Headache was getting worse, lasting up to one day, accompanied by nausea and vomiting. The patient claims to have a fever. Denied limb weakness, seizures, visual impairment, and hearing impairment. The patient is a housewife and has 11 cats. Systemic physical examination was normal limits. NRS examination showed a value of 6. Neurological examination found neck stiffness and clonus. The hematology laboratory examination increased eosinophils. Negative HIV serology, negative anti-HCV, negative HBsAg, and increased SGPT 71 u/L, non-reactive IgM Anti Toxoplasma, reactive IgG Anti-Toxoplasma 459.5 IU/ml. In the lumbar function, the liquid was colorless, and clear, with no clots, PH 7.0, specific gravity 1.015, Polynuclear (PMN) 0, Leukocytes 3, Mononuclear (MN) 100, Pandy test and Nonne test negative, total protein 30, glucose 94. Chest X-ray show was normal. Ct scan with contrast showed hemispherical bilateral meningoencephalitis. The patient received treatment with dexamethasone, tramadol, and ketorolac, clindamycin. At the time of follow-up at the polyclinic, the patient showed improvement in clinical condition, examination of neck stiffness and clonus disappeared, and NRS examination showed a value of 4.

Discussion

An intracellular protozoan parasite called Toxoplasma gondii can infect people when they consume meat with tissue cysts or unintentionally consume oocysts from contaminated soil or water. As long as the host immune system is functioning normally, Toxoplasma gondii infection is asymptomatic. However, toxoplasma encephalitis, pneumonia, and myocarditis can recur once the immune system is compromised. Fever, stiff neck, and headaches are typical signs of meningitis. This patient had complaints of headache radiating to the neck which lasted for four months, fever, and no change in consciousness status. The results of the contrast Ct-scan showed bilateral meningoencephalitis but did not show features of cerebral toxoplasmosis. LCS analysis showed clear fluid, slightly increased specific gravity, increased mononuclear (MN) cells, normal total protein, and increased glucose indicating viral infection. Non-reactive IgM Anti Toxoplasma and reactive IgG Anti Toxoplasma show that Toxoplasma has been infected for more than one year. Behaviors such as contact with cats and consumption of uncooked meat were found to be the main sources of infection toxoplasmosis.

Conclusion

Toxoplasmosis does not always cause pathological conditions, it is often asymptomatic, especially in patients who have good immunity. Toxoplasmosis will give clear symptoms in patients who have decreased immunity.

Keywords: Meningoencephalitis, Toxoplasmosis, Headache

ID_60 Case Report

Neurorestorative Intervention in Stroke Ischemic Patients: Ideomotor Apraxia as An Impediment in Rehabilitation Approach

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Abstract

Background

Common deficiencies in stroke include spasticity, weakness, and loss of equilibrium on the affected side causing an inability to postural alignment. Trunk control is one of the most important indicators of postural alignment and functional recovery after a stroke. A neurorestorative intervention consisting of a multidisciplinary team has a major impact on post
stroke rehabilitation. The presence of ideomotor apraxia in stroke may negatively affect the patient's functional outcome after a period of rehabilitation. These case series aim to report the effect of ideomotor apraxia on a patient's functional recovery after neurorestorative intervention measured using the Truncal Impairment Scale (TIS).

Case Summary

We report three cases of ischemic stroke patients. Case 1 was a 68-year-old male complaining of dysphagia and hemiparesis duplex. The patient had a history of strokes in July 2019 and July 2020. A brain MRI in July 2020 revealed an old infarct in the right temporal and left frontotemporal. The patient then underwent neurorestorative intervention with Transcranial Magnetic Stimulation (TMS) and physiotherapy for facilitating hand and leg movement. Case 2 was a 59-year-old female diagnosed with dysarthria, right hemiparesis, and ideomotor apraxia. The patient had a history of strokes on 12 and 17 August 2022. Brain MRI showed acute infarct at the cortical-subcortical frontoparietal left lobe. The patient also underwent TMS and physiotherapy for facilitating hand and leg movement. Case 3 was a 45-year-old male diagnosed with right hemiparesis and hemihypesthesia. The patient had a history of stroke in 2016. The patient then underwent TMS and physiotherapy for facilitating upper extremity and awareness movement. We evaluate TIS before and after the neurorestorative intervention. Two cases showed an improvement in TIS values in case 1 (6 to 11) and case 3 (18 to 21). Meanwhile, patients with ideomotor apraxia (case 2) showed no change in TIS score (9 to 9).

Discussion

Ideomotor Apraxia (IMA) is an inability to perform verbal command tasks and is commonly seen in patients with stroke or neurodegenerative disease. On executive function examination, IMA was found in case 2. It leads to a prediction that apraxia may slow the recovery of patients during the rehabilitation program. This finding was in line with Civelek et al. who stated that the presence of IMA following a stroke resulted in a significantly lower level of functional independence even after a period of inpatient rehabilitation. A more recent study reported that the presence of IMA following a stroke has a negative impact on overall function, both before and after rehabilitation, when compared to stroke patients without IMA. This retrospective study reported that Functional Independence Measure scores and Motricity scores in the

IMA group on admission and at discharge were significantly lower than those of non-apraxia patients.

Conclusion

The presence of IMA in stroke patients might have a negative impact on rehabilitation. Stroke patients must be assessed for IMA before the commencement of a neurorestorative intervention program to guide treatment and determine realistic goals.

Keywords: Stroke, Ideomotor Apraxia, Trunk Impairment Scale, Neurorestorative

ID_61 Research

Clinical Profile of Aphasia Patients using TADIR Examination

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Abstract

Background

The occurrence of aphasia can impede communication ability and lower the quality of life. To establish the diagnosis provided for the rehabilitation program, an initial assessment is required. It is important for clinicians to understand the distribution of events, types, and the nature of aphasia to assess the clinical progression of the symptoms. One instrument used for diagnosing and evaluating aphasia is *Tes Afasia untuk Diagnosis, Informasi, dan Rehabilitasi* (TADIR). The aim of this study is to describe the distribution of aphasia episodes in individuals undertaking a neurorestoration program that includes speech therapy using TADIR scores.

Method

This study is using secondary data from aphasic patients in Neurology Clinic at the Cipto Mangunkusumo General Hospital from January until December 2022. The speech therapist used the TADIR evaluation to analyze aphasic patients.

Result

Of 67 patients obtained with aphasia, the majority of age group was less than 60 years old (59.7%) and the mean age was 55.38(28-83) with 76.12% male. The most common aphasia type is global aphasia (22.3%) and conduction aphasia (22.3%), followed by Broca's aphasia (16.41%). Based on age group, Broca's aphasia is the most common aphasia in the less than 60 years old group, and conduction aphasia is the most common in the more than 60 years old group. Global aphasia had the lowest score almost in every component of TADIR. TADIR sub scores showed that in global aphasia, the worst performance among subjects were tasks relating to personal information, fluency, naming, and reading aloud. As expected, comprehension had the lowest score in Wernicke's aphasia with speech imitation. Writing score was the lowest in mixed transcortical aphasia. Subjects that were previously clinically diagnosed with global, mixed transcortical and sensory transcortical aphasia had higher scores than the mean results of the standard TADIR score.

Discussion

In Indonesia, there has not been any big data about the distribution of aphasia types and the TADIR norm profile description. Most subjects were male, under 60 years old, with the most common syndrome being global aphasia,followed by conduction aphasia.Another study found that the incidence rate of aphasia was higher in patients over the age of 60 years old, contrary to the results of this study. Fitri et al reported different results, with Broca's aphasia prevalence as the most common aphasia syndrome, but also showed similar results with this study, in which subjects with global aphasia had the worst performance in every sub-score. The difference between this study's results and the mean standard TADIR scores could be due to clinical improvement in those aphasia syndromes, or environmental influences when the examination was obtained (such as intervention from family members). One of the limitations of this study is the lack of data on etiology.

Conclusion

Aphasia is more common in male subjects and age less than 60 years old. Global and conduction aphasia were the most common aphasia syndrome in this study.

Keywords: Speech therapy, Aphasia, TADIR, Neurorestoration

ID_63 Research

Headache Characteristics in Patients with Autoimmune Diseases in the Neurology Clinic of Cipto Mangunkusumo General Hospital

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Abstract

Background

Headache is a frequent complaint in autoimmune diseases. However, it is necessary to explore whether these complaints are part of the disease's spectrum or events that occur concurrently in autoimmune disease conditions because it would determine the treatment. Primary data, which are still limited, are needed to evaluate and conduct further research on headaches and autoimmune. Therefore, we are interested to see headache characteristics in patients with autoimmune diseases in the Neurology Clinic of Cipto Mangunkusumo
General Hospital.

Method

We conducted a cross-sectional study using secondary data from January 1st – December 31st, 2022, at the Neurology Clinic of Cipto Mangunkusumo General Hospital. We used consecutive sampling. A total of 210 headache patients were included in this study and were grouped according to their autoimmune disease status. This sampling method gave approximately a 1:4 ratio in the case vs. control group, thus one-third of the control group was systematically randomized and selected for bivariate analysis to avoid statistical bias.

Result

The overall prevalence of autoimmune disease in headache patients was 22.4%, and migraine was the most common type among headache patients (44.3%). The demographic characteristics of patients with and without autoimmune diseases are relatively similar, dominated by the age group of 18-45 years, women, married, and unemployed. More than half of the autoimmune disease types were connective tissue diseases (61.7%), with 55.2% of them being Systemic Lupus Erythematosus (SLE). Our study revealed that 61.7% of the autoimmune patients had been diagnosed with an autoimmune disease before the onset of headaches. Bivariate analysis showed a significant relationship between age, gender, and type of headache with autoimmune status in headache patients ($p < 0.05$).

Discussion

Migraine-type headaches dominated the results because migraine was reported as the most common type of primary headache worldwide and the most frequent type of headache in several autoimmune diseases, especially SLE. We ruled out patients with structural intracranial abnormalities, making the possibility of headaches a part of the disease's spectrum in our patients because it was mainly first reported after an autoimmune diagnosis was established. Age 18-45 years and female sex were often mentioned as factors influencing headaches and risk factors for autoimmune diseases. Meanwhile, interestingly, the type of headache also had a significant relationship with the autoimmune status. The similarity of the pathophysiology of headaches, especially migraine, and the autoimmune, influenced by the inflammatory process, underlie the

relationship between the two. In addition, several studies reported that the incidence of autoimmune diseases is higher in patients with migraine-type headaches.

Conclusion

By looking at the headache characteristics in patients with autoimmune disease, this study documented that migraine-type headache, the most common type of headache, had a significant relationship with autoimmune disease status. Further studies are needed to investigate more headaches and autoimmune diseases.

Keywords : autoimmune; headache; neuroinflammatory; proinflammatory

ID_64 Case Report

Normokalemic Thyrotoxic Periodic Paralysis: Case Report

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Abstract

Background

Thyrotoxic Periodic Paralysis (TPP) is a rare condition that primarily affects young Asian males in their 3rd decade of life. Symptoms include acute paralytic attacks and hypokalemia associated with thyrotoxicosis. Although the serum potassium level is decreased in the majority of patients with TPP, it is not necessary to make the diagnosis, and some cases of TPP have normal potassium levels even in the acute paralytic phase. TPP with normal potassium levels may be misdiagnosed as other neurological diseases such as Guillain-Barré syndrome, multiple sclerosis, or malingering. TPP due to thyrotoxicosis is rare and can be fully reversible if diagnosed on time and treated adequately. However, several reports suggest that ocular, bulbar, and respiratory involvement can be severe and sometimes fatal. In patients with respiratory tract involvement, respiratory failure and sudden cardiac arrest can occur resulting in death.

Case Summary

A 32-year-old male complaining of progressive recurrent weakness since two months ago. Initially the patient complained of weakness in the thigh area so that he could not get up from a sitting position at night. Complaints are said to improve within one to two hours, but are repeated every night and increase until the patient cannot get up from a sleeping position. The duration of the complaint increased and began to be felt on the upper arm to the elbow after several weeks. The patient also complained of tremors and hair loss. On physical examination, there was diffuse thyroid enlargement and weakness in the proximal lower extremities. Laboratory examination showed decreased TSH levels, increased FT4 levels and SCNA4 by whole exome sequencing negative. After getting Thiamizole and Propranolol, weakness decreased and within two weeks the patient had never experienced weakness.

Discussion

Based on the location of the lesion, weakness can be divided into upper motor neurons, lower motor neurons, neuromuscular junctions and muscles. Disorders of the muscles tend to be most pronounced proximally. Recurrent complaints of limb weakness with normal periods between attacks as experienced by this patient may correspond to periodic paralysis.

Conclusion

Normokalemia during paralytic attacks does not rule out TPP. Proper diagnosis and treatment of TPP is necessary.

Keywords : Thyrotoxic Periodic Paralysis; TPP; muscle weakness

ID_66 Research

Characteristics of Traumatic Brain Injury Patients in The Emergency Unit of A Tertiary Hospital

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Abstract

Background

Traumatic brain injury (TBI) is one of the neurological emergencies which is often found in emergency units. These cases are frequently diagnosed in severe conditions, for example, moderate or severe TBI. Mild cases often go underdiagnosed. As a result, physicians have an uncomprehensive understanding of the characteristics of patients in daily practice. This study aims to explain the characteristics of TBI patients classified as trauma patients in emergency units.

Method

The retrospective cohort observational study was conducted to review adult traumatic brain injury patients (aged >18 years) who visited the emergency unit of a tertiary teaching hospital in Indonesia from April to December 2022. Several data, including demographic, clinical characteristics, supporting examinations, surgical procedures, and disposition distribution, were collected in this study. All data were presented descriptively in tables and figures.

Result

Three-hundred-and-twenty-six trauma patients were admitted to the emergency unit during the nine months of this study, with 245 cases (75.15%) classified as TBI. Mild TBI (183 patients, 75%) were the first rank, followed by moderate (49 patients, 20%) and severe (12 patients, 5%). Regarding disposition, 133 patients (55.19%) were discharged from the neurology team, and 90 patients (37.34%) were hospitalized. However, six patients (2.49%) died in the emergency unit. For operative management, only 12 patients (5.31%) went for emergency cranium surgery, and 32 patients (13.1%) needed extracranial surgery.

Discussion

This could be one of the novel descriptive data about TBI in real-world situations, specifically in lower-middle-income countries (LMIC). Three of four trauma patients had TBI. Moreover, mild TBI was the most frequent type found in this study. Only a few patients required operative management. These findings might alter the comprehension of many physicians in the emergency unit that most TBI patients usually have a high acuity and necessitate a significant number of resources. Most of the TBI patients were mild and did not need hospitalization. However, these data were collected from the patient registry in one hospital and there was a possibility of a serious bias when reporting data.

Conclusion

Despite a well-recognized great burden of moderate and severe TBI, there was a significant concern that should be raised about diagnosing TBI among trauma patients in the emergency unit, especially mild TBI. Failing to perform a concise neurological examination in a primary survey of trauma patients might lead to this tip-of-the-iceberg phenomenon.

Keywords: Traumatic brain injury, patient characteristics, emergency unit

ID_67 Case Report

HEMICHOREA PRESENTING POST-STROKE

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Abstract

Background

Hyperkinetic movement disorder is a rare post-stroke neurological manifestation. Hemichorea is attributed due to the involvement of deep structures of the brain such as the basal ganglia. This case reports an elderly man who developed hemichorea as a post-stroke manifestation.

Case Summary

A 65 year-old-man came to the emergency department with a 2-day-history of left-side motor weakness and slurred speech. Three months before admission the patient had a history of falling in the bathroom. On the 3rd day of treatment, the patient developed hyperkinetic movement on the right hand presenting as hemichorea. Glasgow Coma Scale (GCS) E4M6V5, hypertension, dysarthria, left hemiparesis, and right hemichorea were found in physical examination. Brain Computed Tomography (CT) without contrast revealed infarct and subdural hygroma. This patient died on the 8th day of admission due to respiratory failure.

Discussion

Hemichorea highlights the loss of subthalamic nucleus control on the internal segment of the globus pallidus followed by the disinhibition of thalamic neurons. In this case, the patient developed hemichorea because of the lesion in the lentiform nucleus. The lesion in the internal capsule corresponds to the neurological findings of hemiparesis and dysarthria. Post-stroke hemichorea can be explained by indirect pathways which represents one-third of the total striatal motor neuron population. The striatal infarction can involve the pyramidal tract, which induces motor deficit; or the transient nature of these abnormal involuntary movements may be due to regulation of the accessory striata-nigra-striatal, cortico-striata-nigra-thalamocortical and cortico-subthalamic pathways (compensatory movement).

Conclusion

In conclusion, our report was on the relevance of contralateral motor deficit in patients with hemichorea ipsilateral to the cerebral lesion. Hyperkinetic movement disorder is seen with lesion involving the lentiform nucleus.

Keywords: Hyperkinetic movement disorder, post-stroke, hemichorea, hemiparesis, subdural hygroma.

ID_68 Case Report

Neurosyphilis in An Immunocompromised Patient: A Case Report

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Abstract

Background

Since the era of antibiotics, neurosyphilis has almost been forgotten due to its declining numbers. Neurosyphilis is a clinical manifestation of syphilis in patients who did not get or received incomplete treatment.

Case Summary

We report a 54-year-old male patient with HIV, complaining of weakness in all four extremities. From the physical examination, we found spastic weakness, proprioceptive and vibration disturbances, and skin rashes indicating secondary syphilis infection. Our diagnosis of neurosyphilis was established from non-treponemal serum examination and CSF analysis which showed pleocytosis with monocyte predominance and increased protein. Thorax and head CT scan were within normal limits. Our patient was diagnosed with neurosyphilis and received therapy of ceftriaxone 2 grams every 12 hours intravenously for 14 days, and after completion was continued with a single intramuscular injection of Benzathine Penicillin G of 2.4 million units.

Discussion

Complaints of vibration and proprioceptive disturbances were experienced by patients due to disturbances in the posterior column of the spinal cord. We performed a lumbar puncture to establish the diagnosis of neurosyphilis. The diagnosis of neurosyphilis was made from the clinical suspicion and the results of CSF analysis that showed pleocytosis with a predominance of monocyte cells. During treatment, the patient's response to therapy was good. Complaints of weakness and proprioceptive disorders were improved.

Conclusion

Although neurosyphilis is a rare diagnosis, it still needs to be considered in patients who are immunocompromised.

Keywords: Immunocompromised, Syphilis, Neurosyphilis

ID_69 Research

Risk Factors Associated with Mortality in Patients with Acute Subdural Hematoma: A Retrospective Study in Pasar Minggu Regional General Hospital

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Abstract

Background

Subdural hematoma (SDH) is mainly caused by head trauma and is related to high morbidity and mortality. Research on the outcome of acute SDH has not been widely reported. We, therefore, investigated the mortality of patients with acute SDH and the risk factors that influenced it in the Pasar Minggu Regional General Hospital, Jakarta.

Method

This is a cross sectional study based on the medical records of acute SDH patients above 18 years of age, who were hospitalized at the Pasar Minggu Regional General Hospital between January 2016 and October 2022. Chi-squared test and unpaired t-test were used for statistical analyses.

Result

There were 79 subjects who met the study criteria, the majority of which are aged less than 60 years (54.4%), with a mean age of 57.29 ± 15.32 years, male predominance (69.9%), and had a history of head trauma (68.4%). 44,3% of subjects had Glasgow Coma Scale (GCS) score between 14-15, while 27,8% had GCS score between 9-13 and 27,8% below 8. Leukocytosis was found in majority of patients (73.4%) with a median leukocyte value of 13400 (5000-
35000)/µl. Mortality was 31.6%, and 38% of subjects who survived had Glasgow Outcome Scale (GOS) score of 4 (moderate disability). GCS upon admission, elevated leucocyte count in baseline, and midline shift significantly affected the mortality of acute SDH (p=0.001, p=0.046, and p=0.003, respectively).

Discussion

Acute SDH is more common in males and people aged less than 60 years. Men are considered to have more outdoor activities, hence the increased risk of head injury. This is in accordance with the findings in this study, a history of head trauma was present in most patients. Patients aged more than 60 years are more likely to experience SDH of chronic type. There is a significant association between GCS score upon admission, leukocytosis, and the presence of midline shift with the mortality of acute SDH. A midline shift indicates the presence of cerebral edema which may cause cerebral herniation and is clinically manifested as altered consciousness. A low GCS score is associated with higher mortality. Leukocytes play a role in the process of secondary brain injury. Leukocytosis is not always a marker of infection but rather shows inflammatory process in SDH patients. Leukocytosis predicts a deterioration. These data demonstrate that a heightened inflammatory state after SDH may be related to mortality.

Conclusion

Mortality of acute SDH patients was high, and the factors significantly influencing it was GCS upon admission, leukocytosis in baseline, and midline shift.

Keywords : Subdural hematoma; Mortality; Risk factor

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