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**EXTENDED HOURS THROMBOLYSIS GUIDED BY DWI-FLAIR
MISMATCH**

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ABSTRACT

Introduction: Intravenous thrombolysis (IVT) is the gold standard for the treatment of acute ischemic stroke (AIS) presenting within 4.5 hours of stroke onset. However, some patients present beyond this window due to multiple reasons. With the guidance of advanced imaging, patients that present between 4.5 to 9 hours from symptom onset are potential candidates who would benefit greatly from IVT with favorable functional outcome at 3 months. We would like to share our experience in treating two such patients with good outcome.

Methods: The first patient was a 71-year-old female with hypertension and dyslipidemia. She presented with right sided body weakness and vomiting at 5 hours post stroke onset. The National Institute of Health Stroke Scale (NIHSS) score was 10. Magnetic resonance imaging (MRI) revealed an acute left hemipontine infarct with diffusion weighted imaging (DWI)- Fluid-attenuated inversion recovery (FLAIR) mismatch. Magnetic resonance angiography (MRA) showed no large vessel occlusion (LVO). She was given IVT with tenecteplase 0.25mg/kg at 5.5 hrs. The second patient was a 62 year-old male with diabetes mellitus, hypertension, and ischemic heart disease. He presented with right sided body weakness at 5.5 hours after stroke onset with a NIHSS score of 14. MRI showed a left temporal acute infarct with DWI-FLAIR mismatch. MRA showed no LVO. IVT with tenecteplase 0.25mg/kg at 6 hours was administered.

Results: In the first patient, the NIHSS score improved from 10 to 5, and she remained stable until discharge. A computed tomography (CT) scan at 24 hours did not show any intracerebral hemorrhage (ICH), and she was started on antiplatelet therapy. At 3 months, her NIHSS score significantly reduced to 4, with modified Rankin scale (MRS) of 2. The second patient showed clinical improvement as early as day two post thrombolysis, and his NIHSS score was 0 at day 4. He was started on anticoagulant therapy at day six due to atrial fibrillation and remains neurologically well at 3 months follow up with MRS of 1.

Conclusion: Thrombolysis for AIS patients presenting at extended time-window based on DWI-FLAIR mismatch on MRI should be used for treatment decision due to the excellent clinical outcome, seen in our experience.

CAROTID ARTERY STENTING FOR RADIATION INDUCED LATE CAROTID STENOSIS: A CASE REPORT

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ABSTRACT

Introduction: Radiation-induced carotid stenoses are associated with fibrosis of the arterial layers and tissue planes that renders a “hostile neck” for surgical intervention. We report a patient who had radiation vasculopathy and was successfully treated with carotid angioplasty and stenting (CAS).

Methods: 42-year-old gentleman presented in 2017 with sudden onset of right hemisensory loss which recovered within 2 hours. In 2018, he had another brief episode of blurring of vision and numbness. He has history of deep x-ray therapy to the neck for nasopharyngeal carcinoma in 1998. Clinically, there were bilateral carotid bruits. He had no focal Neurological deficits. MRI of the brain was normal. Doppler ultrasonography showed diseased left common carotid (CCA) and left internal carotid artery (ICA) with multiple critical stenoses and ulceration. The right CCA was also diseased, but less severe. Balloon angioplasty of the left carotid and stenting of the left ICA was done with good results. Follow up doppler ultrasonography did not show any worsening of the stenosis and the patient was continued on double antiplatelets. However, in 2020 patient presented with fainting episodes after exercise. Angiography showed worsening of the left CCA stenosis and critical stenosis of the right CCA. He had interval stenting done whereby 2 stents were placed at the left CCA and 1 stent at the right CCA.

Results: Currently the patient is well on clopidogrel and rivaroxaban.

Conclusion: Carotid angioplasty and stenting seem both safe and effective in patients with radiation-induced vascular disease and the risk for cranial nerve injury after carotid endarterectomy can be avoided.

CEREBRAL VENOUS SINUS THROMBOSIS IN MALE GENDER: A CASE SERIES

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ABSTRACT

Introduction: Cerebral venous sinus thrombosis (CVST) is a rare type of stroke that commonly occurs in female patients. Common risk factors include hormone related (such as oral contraceptive pills, pregnancy, puerperium), sepsis, malignancy and other causes of hypercoagulable state. In male patients, the underlying diagnosis were less commonly identified and it can be associated with poorer prognosis than the female gender. Thrombophilia and recent head and neck trauma are important predisposing risk factors in men. The objective of this case series is to analyse the risk factors as well as the clinical and radiological features in CVST among men.

Methods: Data from medical records of male patients admitted with a diagnosis of cerebral venous sinus thrombosis at Hospital Universiti Sains Malaysia were retrospectively reviewed. Clinical features, risk factors, investigations, imaging findings and treatments were recorded.

Results: Four patients were included in this case series. All patients age were less than 60 years old, with the average age of 45 years. Risk factors found include infection in one patient and a regular anabolic steroid injection in another patient. The remaining two patients had no obvious cause. Symptoms include headache, seizure and hemisensory disturbance. All patients had extensive long segment venous sinus thrombosis. One patient was treated with warfarin, while the remaining patients received direct oral anticoagulant (DOAC). Two patients had residual thrombosis at 3-6 months follow up.

Conclusion: All patients in this case series had extensive CVST with uncommon risk factors. Further study is required to provide a better understanding of CVST in male patients, in terms of pathophysiology, risk factors, clinical and radiological findings as this may lead to more timely diagnosis and favourable outcomes.

EFFECTS OF MALAYSIAN MOVEMENT CONTROL ORDER (MCO) 1.0 FOLLOWING COVID-19 PANDEMIC ON ACUTE STROKE SERVICE IN SEBERANG JAYA HOSPITAL

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ABSTRACT

Introduction: The ongoing COVID-19 pandemic has revolutionized healthcare landscape globally. We aim to investigate the effects of Malaysian Movement Control Order (MCO) 1.0 following the pandemic on acute stroke service in Seberang Jaya Hospital (HSJ).

Methods: All Stroke Code activations presented to Department of Emergency & Trauma HSJ during MCO 1.0 (March 2020 – July 2020) are compared with a corresponding time period before COVID-19 pandemic (March 2019 – July 2019). Data were retrieved from online Stroke Code Registry.

Results: During the Malaysian MCO 1.0 in 2020, 53 stroke codes were activated, a significant increase from 2019 (n=16). Although <4.5 hours acute stroke activation remained as the majority in both 2020 (45/53, 84.9 %) and 2019 (15/19, 93.8 %), wake up stroke activation increased from 6.3% (2019) to 15.1% (2020). In 2020, the acute stroke service was expanded to cluster hospitals who contributed 22% of cases. During MCO 1.0 (2020), 39.6% were brought in by ambulance, compared to 31.3% in 2019. The therapeutic yield for thrombolysis in 2020 was 24.5% (n=13) and 31.3% (n=5) in 2019. Surprisingly, the mean duration from onset of stroke to the time of arrival to the hospital was longer in 2020, 1 hour 55 mins (SD 79 mins), compared to 2019 (mean 1 hour 25 mins, SD 44 mins). Despite the pandemic, patients were seen by emergency team within 2 minutes of arrival (2020: 1 min 28secs; 2019: 2mins). The mean duration from arrival until decision made was 61mins 45secs in 2020 and 53mins 22secs in 2019. The time taken from arrival to thrombolysis improved from 1 hour 56mins in 2019 to 1 hour 28mins in 2020.

Conclusion: The acute stroke service was not adversely affected, instead there were improvement in the key performance indicators during the MCO 1.0.

A RARE PONTINE INFARCT WITH ABDUCENS NERVE PALSY, HYPERACUSIS AND CONTRALATERAL HEMIANAESTHESIA MIMICKING GASPERINI SYNDROME.

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ABSTRACT

Introduction: Gasperini Syndrome (GS) is an uncommon, crossed brain stem syndrome that is characterized by ipsilateral impairment of V, VI, VII, VIII cranial nerves and contralateral sensory loss correlating with vascular territories supplied by anterior inferior cerebellar artery (AICA). Neuroimaging usually showed infarction over the caudal pontine tegmentum at the level of facial colliculi. To date, only a few cases of GS had been published. We report a case of medial tegmental pontine infarct with an uncommon presentation, mimicking Gasperini Syndrome.

Methods: Data regarding clinical features, risk factors, investigations, imaging findings and treatments were recorded

Results: A 57-year-old man with hypertension presented with sudden onset of right sided hemi-body numbness associated with double vision when looking horizontally towards the left side. It was associated with increase loudness and the intensity of the surrounding sound. Clinical examination revealed left abducens nerve palsy and hyperacusis. Other cranial nerves were intact. There was no hemiparesis and no cerebellar signs. He was treated with the antiplatelet and other usual ischemic stroke treatment. His symptoms improving after 24 hours with residual minimal abducens nerve palsy.

Conclusion: Brainstem syndrome with pontine infarct can manifest with various types of clinical features depending on the site of occluded vascular territory. In this case is due to occlusion of basilar artery perforators. Clinical localization of the site of lesion requires the knowledge of pontine neuroanatomy and should be supported by the neuroimaging study.

A CASE REPORT ON A RARE SYNDROME: GERSTMANN TETRAD IN A STROKE PATIENT

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ABSTRACT

Introduction: Gerstmann syndrome is a rare clinical disorder classically characterized by four tetrad of symptoms which includes agraphia, acalculia, finger agnosia and right-left disorientation. This cluster of impairments result from an insult to a specific region of the brain especially in the angular gyrus of parietal lobe in dominant hemisphere.

Case report: This study reports a case of 48 years old right-handed female patient presented with difficulty in talking, facial asymmetry and right sided weakness. Her neurological examination findings were consistent with all four features of Gerstmann syndrome with additional signs of aphasia with speech apraxia and alexia. MRI of brain revealed left middle cerebral artery (MCA) territory infarct and left thalamic infarct. These impairments potentially cause a significant negative impact on her quality of life.

Conclusion: Although Gerstmann syndrome is a rare clinical case, it essentially has important clinical value with respect to predicting localisation of brain lesion, prognostication and establishing ideal treatment strategies for rehabilitation.

Keyword: Gerstmann syndrome, agraphia, acalculia, finger agnosia, right-left disorientation, stroke

OXFORD COGNITIVE SCREEN MALAY VERSION: VALIDATION OF STROKE-SPECIFIC COGNITIVE SCREENING TEST PILOT STUDY

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ABSTRACT

Introduction: Although widely used, the MMSE and MoCA are often lamented for being inconsiderate of certain groups of stroke patients, e.g. those with lower education, aphasia, and neglect. The Oxford Cognitive Screening (OCS) is a screening tool designed to identify cognitive impairments post-stroke. Recent studies found that 51% and 87% stroke patients who passed MoCA and MMSE respectively showed impairments in OCS. These findings highlight the under-detection of post-stroke cognitive impairments using tests originally developed for dementia of Alzheimer's type. The primary aim of this study is to adapt and validate the OCS Malay and to explore the effect of education and depression.

Method: The OCS Malay undergone forward and backward translation process. The final version was administered to 5 healthy individuals to examine feasibility. Nineteen stroke patients and 38 healthy controls completed OCS-Malay at 3 sites- neurology, physiotherapy, and family medicine clinics at HUKM. All participants completed the MMSE, MoCA, OCS, and BDI-II.

Results: Standardized internal consistency of OCS-Malay was acceptable (Cronbach's alpha = 0.74), suggesting good reliability. OCS-Malay generally showed significant correlations with corresponding subtests of MoCA ($r = 0.26$ to 0.78) but not MMSE, indicating fair concurrent validity. Education effect was observed in calculation task among controls and in executive task among patients. Attention and memory subtests only differentiated patients and controls with tertiary education. In addition, verbal fluency accounts for 11% of variance between patients and control in MoCA ($p = 0.02$). Higher depressive symptoms are significantly correlated with better performance on certain cognitive tasks in OCS-Malay, e.g. executive function ($r = -0.31$) and visual attention ($r = -0.34$). This relationship was not found for MoCA and MMSE.

Conclusion: Preliminary findings on reliability and validity support that the OCS-Malay is comparable to other translations of OCS. Similar mean scores were reported except calculation, episodic memory, and executive subtests.