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RESEARCH ARTICLE

ACA INFARCTION WITH MERS DUE TO INFECTIVE ARTERITIS OF AN INTERHEMISPHERIC SUBDURAL EMPYEMA COMPLICATING A MAXILLARY SINUSITIS

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Abstract

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Introduction:-

Infective arteritis of the cerebral vessels is one of the causes of stroke in young people and is part of an infectious meningo-vascularitis. We report a case of focal infectious arteritis complicating severe maxillary sinusitis responsible for infarction of the territory of the anterior cerebral artery (ACA).

Case report:

A 19-year-old patient was admitted to emergency with severe maxillary sinusitis and was initially started on Amoxicillin. On day three, he presented with sudden onset of left hemi-body heaviness. Neurological examination revealed left hemiplegia and somnolence. MRI showed an infarction of the right ACA.

The decision to perform IV thrombolysis (METALYSIS 0.25 mg/kg) was based on radio-clinical and DWI-Perfusion ASL mismatch.

The patient was transferred to intensive care after meatotomy of the right maxillary sinus, triple IV antibiotic therapy and IV corticosteroid therapy (Methylprednisolone 120 mg x 2 per day).

The initial evolution was marked by a partial improvement followed by a worsening of the state of consciousness; a follow-up MRI was performed, which revealed an interhemispheric empyema (Figure 2)

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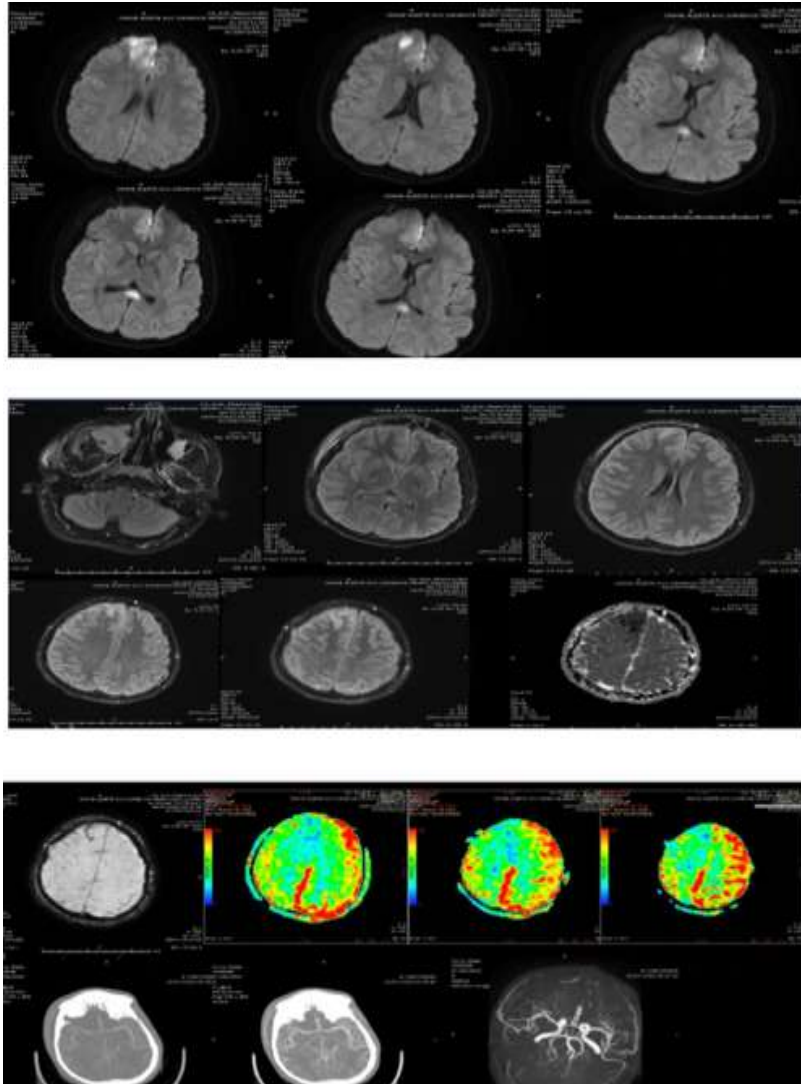


Figure 1:- Initial brainimaging (positive DWI in the right ACA territorywithhypersignal of the interhemisphericemyema, slightly positive FLAIR and tightstenosis of the right ACA on the TOF WILLIS sequence, as well as a DWI hypersignal of the spleen).

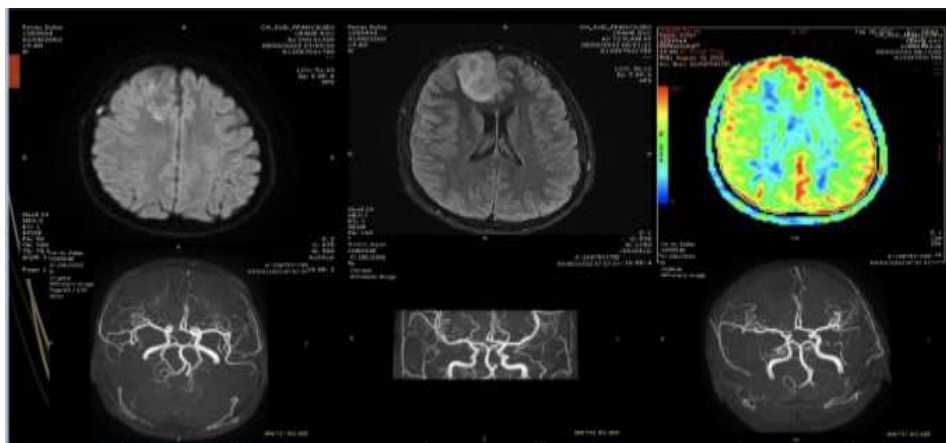


Figure 2:- Control brainimaging (DWI shows partial reversion of the hypersignal in the territory of the ACA with an interhemisphericemyema).

The lumbar puncture found 467 elements/mm³ with 94% of PNN and a negative culture.

Infection was rapidly brought under control, with regression of the vigilance impairment. The left-sided deficit persisted for 10 days, followed by sudden motor recovery from day 11, which was almost complete by day 18.

Discussion:-

The diagnosis was MERS associated with interhemispheric subdural empyema responsible for infarction of the right ACA territory, probably due to infectious arteritis, with no evidence of cortical cerebral venous thrombosis. The term "mild encephalopathy/encephalitis with reversible splenic lesion" (MERS) was first established in 2004. It is a clinico-radiological syndrome with a prodromal phase followed by encephalopathy and a typical MRI lesion.

The etiologies are varied, often infectious, but similar lesions have been found in acute mountain sickness or when taking anti-epileptic drugs.

The first article describes the case of a 9-year-old male child with no previous history of sinusitis who was admitted with a flu-like illness (angina) and woke up the next day with right hemiparesis. He was treated with antibiotics, tonsillectomy and sinus drainage, and at 3 months the motor deficit had completely recovered.

The second article reports the case of a 10-year-old girl admitted with pansinusitis, somnolence, left hemiplegia and impairment of the right abducens nerve, the mechanism was a direct perivascular inflammatory reaction of the cavernous portion of the carotid artery very closely linked to the sphenoid sinus, leading a vascular thrombosis. The third case was that of a 6-year-old diabetic girl who presents a deep sylvian DVA due to carotiditis as a continuation of maxillary sinusitis that had initially gone unnoticed.

We therefore suggest the report of the first case in the literature of an ACA territory infarction associated with MERS complicating an inter-hemispheric empyema in the following stages of maxillary sinusitis. This selective arterial damage to the right ACA which is in contact with the empyema is probably due to a direct chemical or inflammatory reaction which provoked vascular spasms. And the drowsiness that our patient experienced was explained by the MERS added to the ischaemic stroke.

Conclusion:-

Cerebral vasculitis is a rare but serious condition that can be life- and function-threatening in often young patients. Their heterogeneous presentation and the multiplicity of causes contribute to the diagnostic difficulties. Complementary examinations must be adapted to the clinical context in order to better guide the etiological investigation. The theory of cerebrovascular spasm in patients with sinusitis has once been suggested in the literature, where the authors found spasm of the carotid artery in a patient with severe sphenoidal sinusitis and thrombosis of the cavernous sinus.

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