FROM SEIZURE TO ASTERIXIS

A NEUROSURGICAL CASE REPORT

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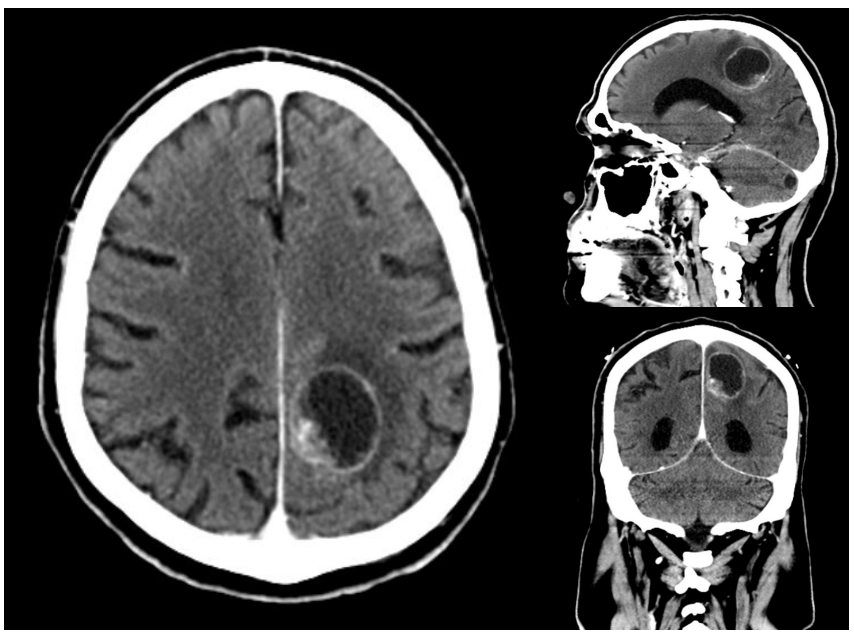
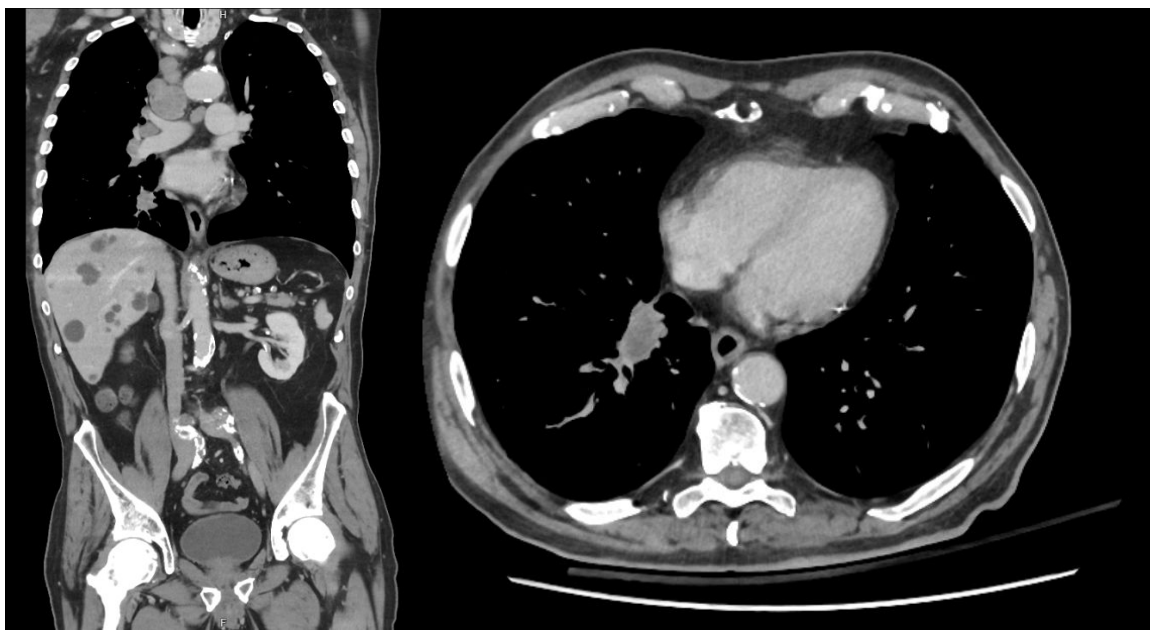
Background and aims - Movement disorders are very rare in surgical settings: involuntary movements in neurosurgical departments are most of times linked to epileptic activity.

Materials and methods - We describe the case of a patient with symptomatic seizure due to a metastatic cerebral microcitoma. After biopsy he developed an unilateral asterixis due to thalamic haemorrhage.

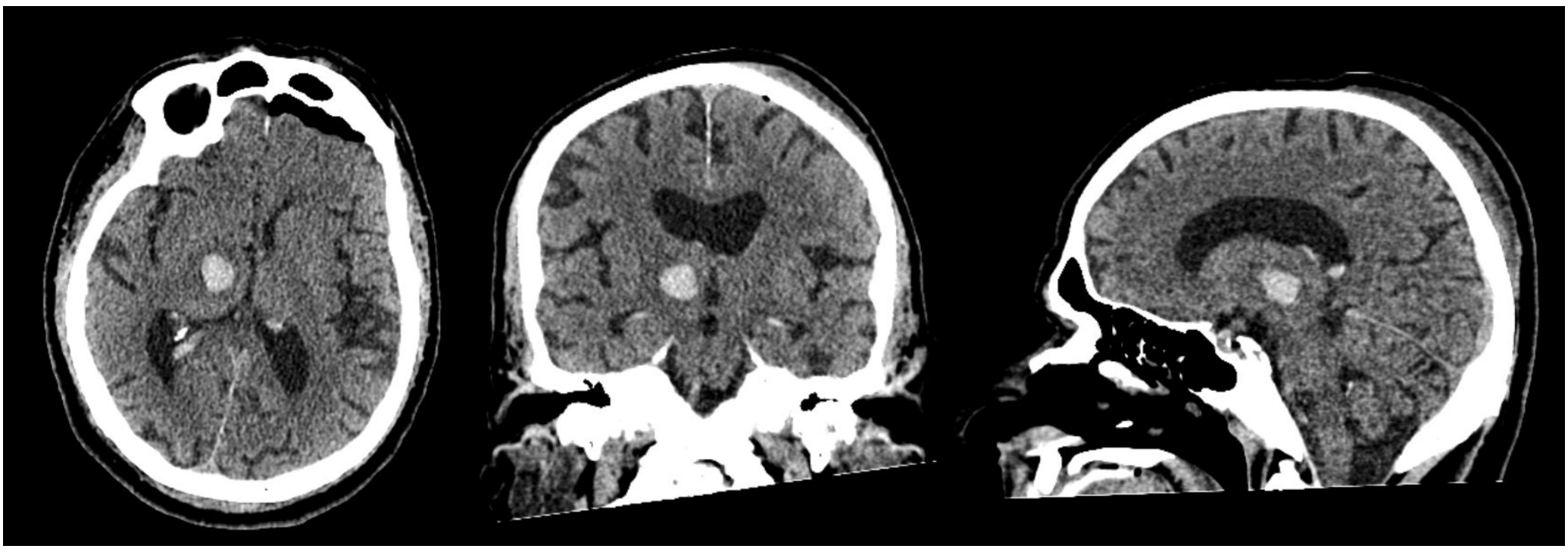
CASE REPORT

A 73 years-old man with vascular risk-factors was admitted in the Neurosurgery Department because of a transitory involuntary movement of the right arm: the symptoms were clonic manifestation of a focal epileptic crisis. He underwent a contrast cerebral CT, discovering a left parietal expansive lesion with circular enhancement and perilesional oedema. He underwent surgical biopsy of the lesion with evidence of lung metastasis.





During surgical operation a single hypertensive episode occurred. Once awake from anaesthesia, we noted a left hemiparesis with involuntary, sudden, brief, arrhythmic lapses of sustained posture of ipsilateral hand: these movements were evaluated by neurologist with diagnosis of unilateral asterixis. The patient underwent control CT with evidence of a right thalamic haemorrhage. The asterixis spontaneously regressed in a couple of days.



Discussion and conclusion - Asterixis is a negative myoclonus due to sudden cessation of electrical activity causing a sustained contraction in extensor muscles [1]. It can be related to the neural subsystem involving the ventrolateral thalamus. Asterixis usually involves both the limbs in systemic pathology - like hepatic encephalopathy, but it rarely can be unilateral [2], e.g. in stroke pathology (more ischemic than haemorrhagic) [3]. This could be the first case of unilateral asterixis due to hemorrhagic stroke after neurosurgical operation. The case of our patients shows two different types of involuntary movement in the neurosurgical setting: a more common focal seizure and a very rare unilateral asterixis. An extensive neurological semeiotics can be very important to discover light symptomatic post-surgery events like thalamic haemorrhages.

Bibliography

[1] Ellul MA, Cross TJ, Larner AJ. Asterixis. Pract Neurol. 2017 Jan;17(1):60-62. doi: 10.1136/practneurol-2016-001393.

[2] Young RR. Unilateral asterixis. Arch Neurol. 1977 Nov;34(11):722-3. doi: 10.1001/archneur.1977.00500230092025.

[3] Tater P, Pandey S. Post-stroke Movement Disorders: Clinical Spectrum, Pathogenesis, and Management. Neurol India. 2021 Mar-Apr;69(2):272-283. doi: 10.4103/0028-3886.314574.