

SUDDEN DEATH, MOTOR VEHICLE ACCIDENT, CEREBELLAR TUMOUR: CASE REPORT

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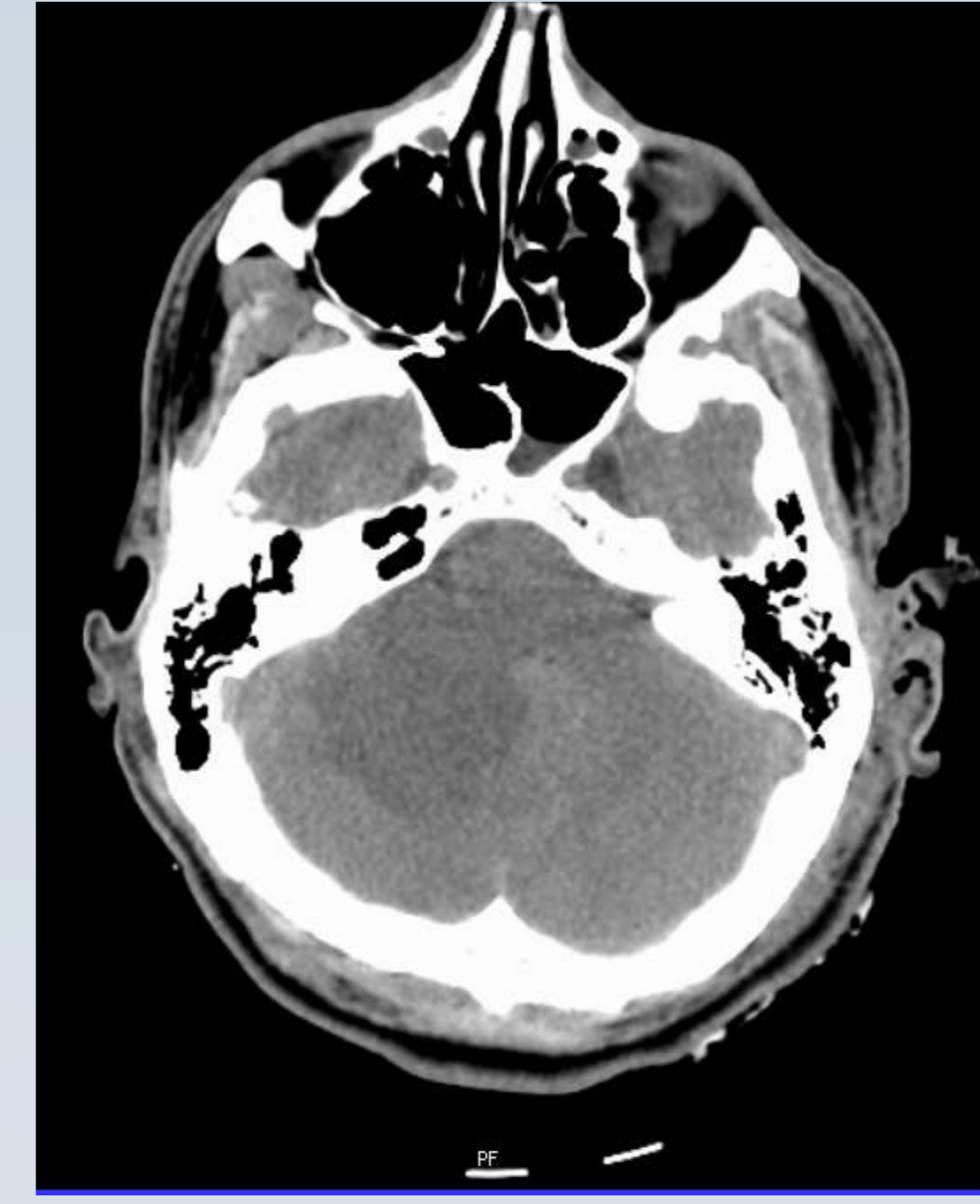
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INTRODUCTION

Portuguese forensic law determines that all the mortal victims of traffic accidents must be subjected to a forensic autopsy. In this particular case, a traffic accident with minor injury led to unbalance a previous tumoral pathology with an unusual location.



Fig. 1: Brain CT scan with and without enhancement



CASE REPORT

Clinical History:

A 31-year-old man who was the co-pilot of a jeep, suffered an overturn in a rally. On admission to the hospital, he was conscious, referring only slight amnesia towards the accident. He presented a Glasgow Coma score of 15, reactive, isocoric pupils, a right clavicular fracture, and an ear wound with scalp of the zone. An enhanced brain CT scan was performed, detecting a diffuse hypodensity in the right cerebellar lobe with slight ventricular dilatation. Cervical CT scan showed no traumatic injury. He was transferred to the neurosurgery ward, complaining only of neck pain. His clinical situation suffered a fast, sudden deterioration (Glasgow Coma score of 3t). In a new brain CT scan the diffuse hypodensity was still recorded and an acute hydrocephaly was present. The patient was submitted to an external ventricular derivation, but he did not recover, and was declared death one day after the accident.

Autopsy Findings:

External examination revealed a well-nourished white man of 1.80 meters and 75 kilos (Body Mass Index=23.1). Abrasions were observed on the forehead, face and limbs. A 17-cm-long sutured laceration was present on the left temporal region and left ear. Ecchymosis were found on left retro-auricular region, left cervical region and limbs. A frontal burr hole was also present.

The neuropathological exam of the fixed brain found thrombi in the superior sagittal sinus, cerebellar subarachnoid haemorrhage, a heavy brain (1690g), increase of the right cerebellar hemisphere, enlargement of all cerebellar peduncles, a right tonsillar haemorrhagic nodular formation, due to a not well defined increase of the white matter.

No other relevant findings were detected, except for heavy lungs with oedema and positive friability, right clavicular fracture, an old splenectomy and the presence of a small accessory spleen.

The histopathological exam revealed pulmonary intra-alveolar oedema and a cerebellar anaplastic astrocytoma.



Fig. 2: Increase of the right cerebellar hemisphere

DISCUSSION AND CONCLUSION

The neuroradiological exams showed a right cerebellar hypodensity without enhancement and the diagnosis of a vascular traumatic insult.

The forensic neuropathological exam allowed the detection of an unknown cerebellar tumour which was histological classified as a cerebellar anaplastic astrocytoma. Infratentorial anaplastic astrocytomas are rare tumours in adults.

The posterior fossa is a special compartment of the skull, due to its conical shape, where the apex is the foramen magnum and the base the cerebellar tentorium. The increase of the volume in this compartment moves the cerebellum or the brain stem up or down. In this case the existing equilibrium in the posterior fossa was disturbed by the traffic accident, leading to a tonsillar herniation.

Forensic autopsies with formalin fixed brains are important to find the right cause of death, as in this case where the traumatic event was a traffic accident.

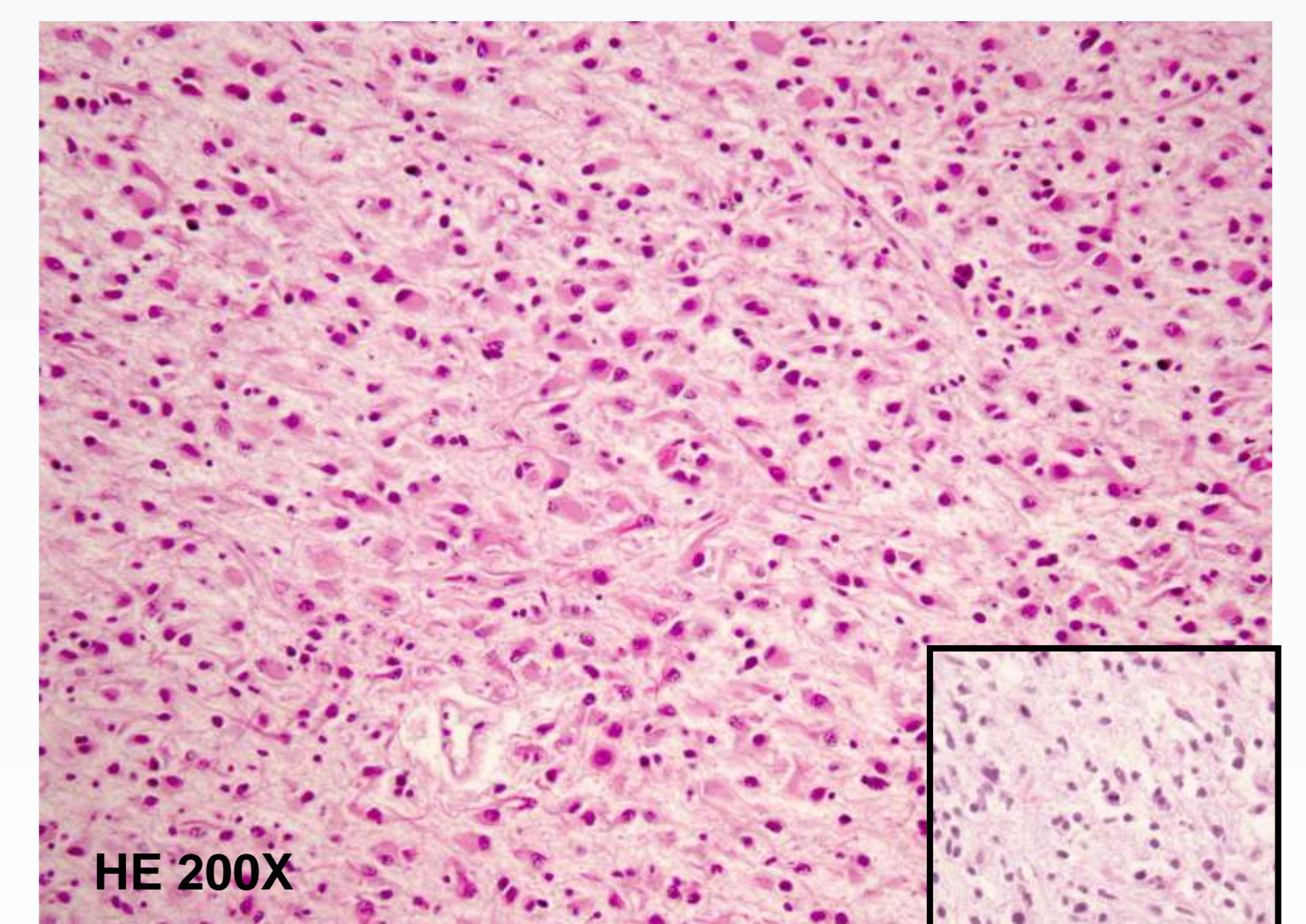


Fig. 3: Cerebellar anaplastic astrocytoma