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Image Article

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# A Case of Brainstem Duret Hemorrhage Caused By Lobar Hemorrhagic Stroke

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## Abstract

This article is depicting the lobar hemorrhage with secondary subfalcine and transtentorial herniation as a cause of Duret hemorrhage on a computed-tomography scan

## Introduction

### Clinical Image

Stroke is the foremost cause of death and disability, with 7 million deaths worldwide, being the third leading cause of death after heart disease and cancer.[1,2] According to data literature available by now, intracerebral hemorrhages account for about 15% of all strokes, representing bleedings located in the brain parenchyma, with a complex physiopathology mechanism through the direct pressure effects of an acutely expanding mass.[1] Hematoma may lead to herniation, hydrocephalus and increased intracranial pressure.[3,4] Duret hemorrhage can result from any cause of descending transtentorial herniation, as a result of increased intracranial pressure, which causes intracranial compartmental shifts.[5] It is most commonly associated with increases in intracranial pressure caused by a variety of causes, including intraparenchymal hemorrhages, brain neoplasms and diffuse cerebral edema. [6,7] Most frequent involvement are in the midline, paramedian, and ventral tegmentum of the upper pons and midbrain.[5,7] We present the case of a 70-year old male who is transfered at the emergency department in a comatous state. Non-contrast head computed-tomography examination reveals a voluminous acute hematic accumulation in the right cerebral hemisphere, located cortically and subcortically, lobar hemorrhage type, 10/6/4.5 cm in size (AP/LL/CC), with a volume of 140.4 cm3 (Figure 1).

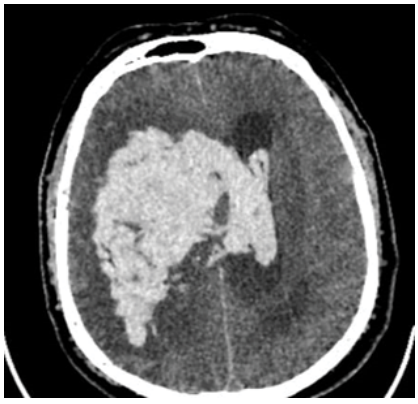

**Figure 1:** Acute intraparenchymal haematoma involving the right cerebral hemisphere with ventricular extension

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**Figure 2**: Lobar haemorrhage with 2 cm left midline shift

**Figure 3**: Subfalcine and downwards transtentorial herniation

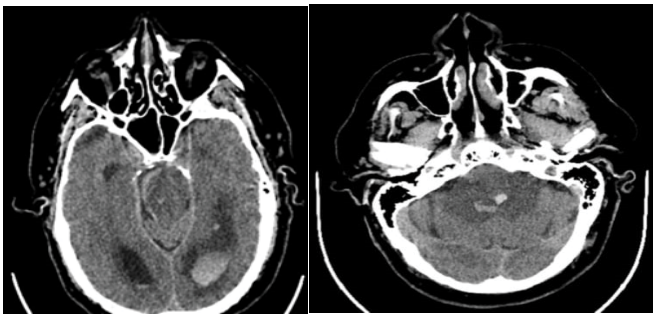

**Figure 4:** Tegmentum and the right paramedian tectal plate hematic petechiae

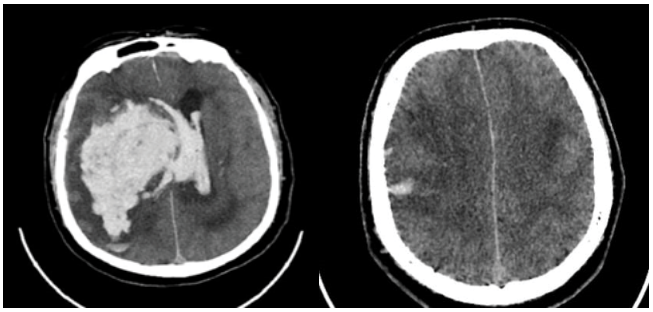

**Figure 5:** Right fronto-parietal and falx cerebri subarachnoid haemorrhage, transependymal and moderate diffuse supratentorial oedema

The collection shows panventricular effacement, with marked compressive effect on the right lateral ventricle, 2 cm left midline shift (Figure 2), with subfalcine herniation and downwards transtentorial herniation (Figure 3) with compression on the midbrain where acute hematic petechiae are visible at the level of the tegmentum and the right paramedian tectal plate (Figure 4).

Associated with this there is significant accentuation of periventricular white matter hypodensity, right fronto-parietal and falx cerebri subarachnoid haemorrhage (Figure 5), hydrocephalus with transependymal and moderate diffuse supratentorial oedema.

## Conflicts of Interest:

The authors declare no competing interests.

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