

# Medico Legal Consideration in Postmortem Diagnostic of Intracranial Haemorrhage

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The forensic diagnosis of traumatic or non-traumatic death in intracranial haemorrhage is difficult in putrefactive status. It needs a careful analysis and accurate description of all the variables (intra and extracranial). Postmortem imaging with Computed Tomography (CT) or Magnetic Resonance Imaging (MRI) is emerging as an effective technique to augment forensic autopsy, especially if combined [1], but expected findings on postmortem imaging of the brain may mimic pathologic processes in the living brain, leading to potential misdiagnosis [2].

The cerebral haemorrhage is an accumulation of blood in the intracranial side. It can be epidural if there is blood between the skull and the dura mater, subdural if between the dura mater and the arachnoid, subarachnoid if between arachnoid and the brain, or finally, intracerebral if intra parenchymal. Intraparenchymal cerebral haemorrhage can be further distinguished by the lobar location (frontal, temporal, parietal, occipital) or intraventricular (if there is a collection of blood in the cerebral ventricles) [3].

The location is very important for the diagnosis of establishing the nature of the haemorrhage. Subdural and epidural bleeding is most often traumatic, while a subarachnoid haemorrhage or intraparenchymal, when isolated and not associated with other signs such as bruises and lacerations of the brain can be non traumatic

haemorrhage (aneurysmal and non-aneurysmal hypertensive) [4].

The autopsy diagnosis requires a careful study of the brain and intracranial structures, with a meticulous description of the individual components.

But the diagnosis of the nature of a cerebral haemorrhage, which is important in order to distinguish whether it is a natural or traumatic death, is complicated in the putrefactive status due to the changes that makes the macroscopic study of the organ completely unusable.

During the opening of the skull the tenacious adhesion of the dura mater to the inner surface of the cranial vault significantly affects the study of the membrane [Table/Fig-1].

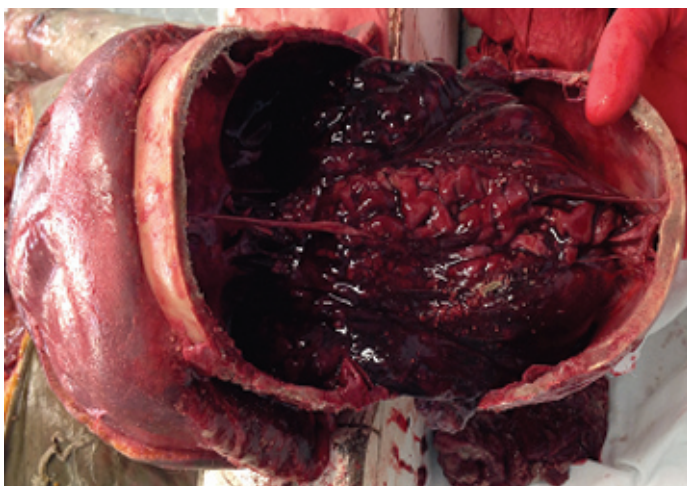
The parenchyma appears in an altered appearance and it is possible to hypothesize the haemorrhagic nature of the disease solely on the basis of red aspect of the content.

In these cases, for recognizing the traumatic nature of death, beyond the study of other organs such as the heart for identifying disorders that may be associated with hypertension [5,6], it is fundamental to find signs of blunt skull injuries, as broken bones, and soft tissues blood infiltration.

However, in absence of both these marks it is necessary to exclude the action of compressive forces in the formation of intracerebral haemorrhage. The absence of fractures may be particularly due to the elasticity of the bone and their ability to bend without fracturing, it is imperative to consider intracranial haemorrhage due to acceleration forces of traumatic origin and, therefore, of a forensic importance.

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**[Table/Fig-1]:** Aspect of the brain after opening the skull. The adhesions and the reduced consistency makes it difficult to distinguish the individual structures

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