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O-039 - ANEURYSMAL SUBARACHNOID HAEMORRHAGE: VOLUMETRIC QUANTIFICATION OF THE BLOOD DISTRIBUTION PATTERN TO ACCURATELY PREDICT THE RUPTURED ANEURYSM LOCATION

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Resumen

Introduction: In spontaneous subarachnoid haemorrhage (SAH) accurate determination of the bleeding source is paramount to guide treatment. Traditionally, the bleeding pattern has been used to predict the aneurysm location.

Objectives: Here, we have tested a software-based tool, which quantifies the volume of intracranial blood and stratifies it according to the regional distribution, to predict the location of the ruptured aneurysm.

Methods: A consecutive series of SAH patients admitted to a single tertiary centre between 2012 and 2018, within 72h of onset, harbouring a single intracranial aneurysm. A semi-automatized method of blood quantification, based on the relative density increase, was applied to initial non-contrast CTs. Five regions were used to define the bleeding patterns and to correlate them with aneurysm location: perimesencephalic, interhemispheric, right/left hemisphere and intraventricular.

Results: 68 patients were included for analysis. There was a strong association between the distribution of blood and the aneurysm location ($p < 0.001$). In particular: ACom and interhemispheric fissure ($p < 0.001$), MCA and ipsilateral hemisphere ($p < 0.001$), ICA and ipsilateral hemisphere and perimesencephalic cisterns ($p < 0.001$), PCom and hemispheric, perimesencephalic and intraventricular ($p = 0.019$), and PICA and perimesencephalic and intraventricular (p 0.900) for these locations.

Conclusions: Regional automatised volumetry seems a reliable and objective tool to quantify and describe the distribution of blood within the subarachnoid spaces. This tool accurately predicts the location of the ruptured aneurysm; its use may be prospectively considered in the emergency setting when speed and simplicity are attained.