

Pediatric critical illness associated cerebral microhemorrhages

ABSTRACT

Cerebral microhemorrhages or CMBs are small, hypointense foci occurring in the brain parenchyma, with a maximum size of 5 mm, or even up to 10 mm on haemorrhage sensitive MRI sequences. Traditionally, this clinical entity is seen in conditions such as cerebral amyloid angiopathy (CAA), chronic hypertension (termed hypertensive microangiopathy), and diffuse axonal injury (seen especially in a history of trauma) – with their own specific patterns on MRI. The advent of technology in MRI has allowed increased utilization of haemorrhage sensitive sequences, namely gradient echo (GRE) and susceptibility weighted imaging (SWI) in routine brain scans. On histopathological examination, these microhemorrhages are due to hemosiderin accumulation in macrophages [1]. The presence of hemosiderin causes the signal loss, or hypointense appearance on GRE/SWI sequences. Despite the increased detection, the clinical significance of microhemorrhages remains controversial – complicating patient management. There is increasing literature available attributing the occurrence of cerebral microhemorrhages to other, less well known causes, such as high-altitude exposure, acute respiratory distress syndrome (ARDS), infective endocarditis, or critical illnesses/sepsis; even so, most of the literature discusses this entity in the adult population. Scarce literature is available describing its occurrence in the pediatric population. Herein, we discuss the occurrence of cerebral microhemorrhages in a pediatric patient with critical illness, in our institution.