H148 Mimic of Pediatric Head Trauma: Bipartite Parietal Bone in Pediatric Cases

Richard C. Fries, DO, 200 Feliks Gwozdz Place, Fort Worth, TX 76104; Dana Austin, PhD, Tarrant County MEO, 200 Feliks Gwozdz Place, Fort Worth, TX 76104-4919; Marc A. Krouse, MD, 200 W Feliks Gwozdz Place, Fort Worth, TX 76104-4919; Tasha Zemrus Greenberg, MD, Tarrant County MEO, 200 Feliks Gwozdz Place, Fort Worth, TX 76104-4919; Susan J. Roe, MD, Tarrant County MEO, 200 Feliks Gwozdz Place, Fort Worth, TX 76104; and Nizam Peerwani, MD, Tarrant County OCME, 200 Feliks Gwozdz Place, Fort Worth, TX 76104-4919*

After attending this presentation, attendees will better understand the anomalous presentation of an accessory suture in the parietal bone (bipartite parietal bone) due to the failure of normal ossification and the clinical pitfalls and complications encountered in the diagnosis. Two recent cases are presented, one an incidental finding on a non-traumatic infant death and the other reported as a suspected traumatic death due to head trauma, which was diagnosed at a children's hospital by a pediatric radiologist as a pediatric non-accidental traumatic skull fracture after review of head Computed Tomography (CT) imaging performed following hospitalization.

This presentation will impact the forensic science community by providing information so attendees can recognize an unusual and rarely reported mimic of pediatric head trauma and by helping prepare attendees for some of the issues that may be raised by conflicting clinical and pathologic diagnoses.

The first case presented is an incidental finding discovered on autopsy in 2015 at the Tarrant County Medical Examiner's Office during a routine examination of an infant death with no other evidence or suspicion of foul play by other investigating agencies. A final determination for the cause of death was sudden unexplained infant death with unsafe sleep environment and a manner of death as undetermined. The second case was reported to the Tarrant County Medical Examiner's Office, also in 2015, shortly after the first case, as a traumatic death due to non-accidental head trauma with a parietal skull fracture after prolonged hospitalization and hospice care. In this case, correlation of the discrepancies between the autopsy finding of an accessory parietal bone suture (bipartite parietal bone) and the clinical finding of a parietal bone fracture was important to further clinical education and proper adjudication of the potential legal proceedings. The final disposition of this case was a ruling of undetermined manner and hypoxic ischemic encephalopathy due to undetermined etiology for the cause of death.

Bipartite parietal bone may be listed under a variety of nomenclature, including divided parietal bone, os parietale partitum, double parietal bone, sutura parietalis transversa, sutura parietalis, anostosis, and os parietale divisum. One or more accessory sutures may be present. A horizontal suture may connect the coronal and lambdoidal sutures or a vertical suture may connect the sagittal and squamosal sutures. The condition is reported in the literature as a rare occurrence.

In conclusion, this presentation will familiarize attendees with accessory cranial sutures, including bipartite parietal bone, an unusual mimic of pediatric head trauma, as well as the development of the cranium that results in this anomaly, the pitfalls associated with the clinical diagnosis, clinical pathologic correlation, and legal ramifications associated with the diagnosis.

Bipartite Parietal Bone, Accessory Suture, Pediatric Head Trauma Mimic