Frontal sinus fractures in children

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Case series

In 11 patients the study group included 9 males and 2 females with a mean age of 9.7 (range 4-14) years. The most common mechanisms of injury were unrestrained motor vehicle accident and all-terrain vehicle accident. All patients suffered concomitant orbital fractures. Other maxillofacial fractures included sphenoid (4), naso-orbitoethmoid (3), midface (2), and mandible (1). Seven (63.6%) patients sustained significant intracranial injuries including intraparenchymal hemorrhage, expanding pneumocephalus, and subdural hematoma. The average age of patients with intracranial injury was younger than those without intracranial injury (8.1 vs. 12.8 years, P = .025). Four patients had a total of six sites of cerebrospinal fluid (CSF) leak. The most common sites of dural injury were the cribriform plate area (4) and frontal region (2). All patients with CSF leaks had significant intracranial injuries and required bifrontal craniotomy.

Pediatric frontal sinus fractures are likely to involve other maxillofacial injuries, particularly involving the orbit. Frontal sinus fractures in children are associated with increased risk of serious intracranial injury and CSF leak when compared with adults. The most common site of dural injury was the cribriform area. A multidisciplinary approach is necessary to manage concomitant injuries, obtain separation of the sinonasal tract from intracranial contents, and to restore cosmesis to the brow [1].

1)
Whatley WS, Allison DW, Chandra RK, Thompson JW, Boop FA. Frontal sinus fractures in children. Laryngoscope. 2005 Oct;115(10):1741-5. PubMed PMID: 16222187.