



Beyond the Canaliculus... Umbrella Induced Pediatric Trauma. A Case Report

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Abbreviations: GCS: Global Cognitive Score; CT: Computed Tomography; CSF: Cerebrospinal Fluid.

Case report

A 6-year old boy was referred to the oculoplastic team for repair of a left upper lid laceration involving the superior canaliculus. He had presented to the eye casualty following a fall at home onto the plastic tip of a child size umbrella, which was un-witnessed. On examination, he was alert and oriented with a GCS of 15. There was a 1cm partial thickness oblique laceration of the left upper eyelid extending into the medial canthus, transecting the superior canaliculus. There was marked swelling and ecchymosis of the upper lid, with minimal spontaneous eyelid opening (**Figure 1**). The globe was assessed with the help of a jaffe lid retractor and appeared intact. The degree of swelling of the upper lid alerted the possibility of involvement of

deeper structures and a CT orbit was arranged urgently prior to proceeding with surgical repair. This revealed a cribriform plate fracture, a non-displaced fracture of the medial wall of the orbit, extending superiorly to involve the medial roof of the orbit to the anterior cranial fossa (**Figure 2**). There was no evidence of Cerebrospinal Fluid (CSF) leak radiologically or clinically. As a precaution, he was admitted for 24 hours of neuro-observations and prophylactic co-amoxiclav commenced. He remained stable and delayed repair of the lid and canicular laceration was performed 3 days later under general anaesthesia with a good outcome.



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Figure 1: Left upper lid laceration on presentation, with significant upper lid swelling.



Figure 2: Coronal CT orbit demonstrating a fracture of the medial wall/roof of orbit to the anterior cranial fossa.

Discussion and learning points

CT imaging is an invaluable tool in assessing peri-orbital trauma. This is particularly important in pediatric trauma, where the history may be uncertain in the case of unwitnessed injury. As images are acquired quickly, it is a readily available tool to evaluate pediatric patients without the need for sedation or anaesthesia. In this case, the degree of swelling did not equate to a simple superficial laceration, which prompted the oculo-plastic team to investigate further. In the context of a cribriform plate fracture, the concern is a secondary traumatic dural tear and CSF leak into the paranasal sinuses and nasal cavity, with a reported incidence of up to 30% of basilar skull fractures [1]. Traumatic compromise to the dural lining with leakage of CSF carries 10-25% risk of developing meningitis, with subsequent mortality rates of 10% should infections or fistulas go unrecognised [2].

Investigating and identifying these injuries is thus of paramount importance. Management of posttraumatic CSF leaks varies depending on the site and extent of the defect and associated intracranial injuries [3]. Options include observation in anticipation of spontaneous closure, surgical endoscopic or open repair [4].

Prophylactic antibiotic therapy is yet to be validated in the literature in the prevention of intracranial infection in these cases [5]. However, most surgeons promote the use of perioperative antibiotics to prevent infection. Our case highlights the importance of maintaining a safe level of suspicion of undetected injuries when evaluated peri-ocular trauma.

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