Blade injury

Retained cranial blade injuries are uncommon events lacking standardized recommendations for appropriate surgical extraction. The authors present a case of a 30-year-old male who sustained a penetrating blade injury of the left orbit with intracranial extension through the skull base into the temporal lobe. The patient walked to the emergency room and remained alert. Clinically, the patient had only a small laceration of the left upper eyelid with no gross visual impairment.The radiological investigation confirmed the presence of a knife blade in the orbit. Intraoperative management included an intracranial approach and an extracranial craniofacial dissection for blade visualization and soft tissue protection, globe protection and to avoid any major bleeding. A thorough review of the penetrating cranial injuries literature is presented and a trauma management algorithm is offered for the care of similar injuries [1)].

A 25-year-old man presented to the trauma department following a penetrating stab wound to his left infraorbital margin with retained knife blade causing superoposterior displacement of the globe. Plain skull X-ray revealed an extensive retained blade with subsequent CT imaging revealing the tip of the blade had reached the right styloid process with no neurovascular compromise. Initial concern was primarily for the left eye leading to ophthalmology being the first specialty requested to review the patient. However, once the extent of the injury was established, ophthalmology requested further review from maxillofacial, ENT and neurosurgery. This resulted in an 84 hours wait between the initial injury and the removal of the knife blade. Incredibly, the patient had no initial sequelae from such an extensive injury and had an unremarkable recovery with no further complications aside from a laceration to the left inferior rectus muscle that was conservatively managed [2)].

In developing countries, during the harvest season, winnower blade injuries occur very frequently in children and results in lifelong disability. Nine children were managed during 1 month, all resulting due to winnower blade induced craniofacial trauma. PubMed search for “fan blade injury” showed two case series and three case reports. In our study, 88% had compound depressed fracture; brain matter leak in 56%, cerebrospinal fluid (CSF) leak alone in 22%. 66.7% had injury involving the frontal bone. Two patients had eye injury with visual loss. Seven underwent debridement craniectomy, five augmentation duroplasty and three contusectomy. All had vegetable material, sand particles. Complications in 66.6% with two cases of CSF leak settled with lumbar drain, one case of CSF otorrohea, 22.2% of wound infection, 44.4% wound dehiscence requiring redebridement and suturing in five patients. Two patients had postoperative seizures, two patients had hemiparesis both improved. Two low Glasgow Coma Scale remained so on postoperative period. One case of subdural empyema needed debridement and duroplasty with glue. No mortality noted. These findings were consistent with previous reports. Follow-up at 1.5 months showed good functional recovery. Early surgery debridement, steps to minimize postoperative infections, identifying putative risk factors early in the management are the principles of a successful treatment regimen [3)].

1)
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2)
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blade in situ in the craniofacial region. BMJ Case Rep. 2018 Sep 23;2018. pii: bcr-2018-226054. doi: 10.1136/bcr-2018-226054. PubMed PMID: 30249732.

3)

Huliyappa H, Ojha B, Chandra A, Singh SK, Srivastava C. Craniofacial Trauma in Pediatric Patients Following Winnowing Blade Injury-review of Literature. Asian J Neurosurg. 2018 Apr-Jun;13(2):212-216. doi: 10.4103/1793-5482.180880. Review. PubMed PMID: 29682010; PubMed Central PMCID: PMC5898081.