

Nasal Bone Fracture Closed Reduction - Review Article

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Nose is the most prominent part of the face, so it is the most common structure to be injured in the face and it is often ignored by the patient. In cases of facial trauma, nasal fractures account for approximately 40 percent of bone injuries(1) Patients with fractures of nasal bone will have deformity, tenderness, haemorrhage, edema, ecchymosis, instability, and crepitation.

Key words: Nasal bone, Deviation, bleeding.

Nasal bone fractures occurs more commonly in facial trauma. Most commonly seen in adults male during assaults , sports injuries, vehicle crashes whereas in women and children physical abuses , trauma from sports or fall are more common.

A nasal injury may be associated with head and neck trauma that could compromise the patency of the trachea. The possibility of an associated facial or mandibular fracture close to the proximity of the nose may occur².

So all bony structures of the face, including the malar eminences, orbital rims, zygomatic arches, mandible, and teeth, should be carefully inspected and palpated for irregularity and tenderness. Facial lacerations, swellings, and deformities should be noted, and the eyes should be examined for symmetry and mobility of gaze.³

The mechanism of trauma by the object and direction is helpful in determining the extent of the nasal injury. A direct frontal blow can depress the dorsum of the nose, causing the fractured bones to telescope posteriorly, a laterally directed injury can cause a depression on the side of the impact, often with a corresponding outward displacement

on the opposite side of the nose. Traction and torsion injuries, though rare, also can cause cartilaginous disruption.⁴

Instruments

- 1) Instruments commonly used for closed treatment of nasal fractures are:
- 2) Asch septum-straightening forceps
- 3) Walsham septum-straightening forceps
- 4) Boies nasal fracture elevator
- 5) Mayo hemostat with rubber tubing
- 6 Killian nasal septum speculum

Diagnosis

Diagnosis of the nasal fracture are done by physical examination by palpating, a step like defect can be felt and clinically by the presence of swelling over the nasal bridge and a difference in the appearance or shape of the nose grossly apparent deviation of the nasal bones, periorbital ecchymosis. Radiography like - Para nasal Sinus Water's view , lateral ceph, CT - facial scans helps in the diagnosis of the nasal fractures and also associated facial fractures if present. Patient can be asked whether the external shape of the nose has changed since the fracture. This helps determine what corrective maneuvers to restore the patient's appearance through reduction of the nasal fracture.

Indications

Nasal bone fracture can be of Simple fracture or nasal- septal complex. Nasal obstruction

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or airway compromise from deviated nasal bones. Fracture of the nasal- septal complex with nasal deviation less than one half the widths of the nasal bridge⁵. In case of minimal edema in adult or children reduction can be performed can be done less than 3 hours after injury whereas in case of severe edema Reduction can be done after 6-10 from injury in adults and 3-7 days for children before the setting of fracture fragments⁶

Contraindications

In case of Severe comminution of the nasal bones and septum, associated with orbital wall or ethmoid bone fractures⁷. Nasal pyramid deviation that exceeds one half the width of the nasal bridge. Caudal septum fracture dislocation. Open septal fractures. Fractures examined 3 weeks or longer after the injury occurred.

Complications

The fractures that cannot be reduced via closed reduction are candidates for open reduction⁸. Open reduction, in most cases, should be delayed until approximately 3 months after injury in order to allow for complete resolution of swelling and settling of the nasal and cartilaginous fragments. This resolution allows for a more accurate evaluation of the pathology, and, therefore, a better cosmetic result after intervention such as open septorhinoplasty⁹. Bleeding in the subperichondrial plane of the septum can lift the perichondrium off of the cartilage and disrupt its blood supply. This disruption may cause irreversible damage to the underlying nasal cartilage within 3-4 days and may eventually result in a saddle nose deformity. Once detected, the septal hematoma should be drained immediately with several small incisions in the mucoperichondrium. Septal splints or intranasal packing should be used to prevent reaccumulation¹⁰. Despite application of topical vasoconstrictors, excessive bleeding may occur. Direct pressure and intranasal packing is the should be given .

Dysesthesia

Direct infiltration of local anesthesia carries the risk of nerve damage and may result in minor dysesthesias or paresthesias after the effects of the anesthetic diminish.

Adequate antibiotic prophylaxis should be done to prevent development of sinusitis, or, less commonly, a toxic shock – like infection; provided Preprocedural prophylaxis should be given to patients with coronary valvular disease.

Placement of intranasal packing is done in closed reduction and Asch or Walsham forceps can be used to elevate the dorsum and disimpact the displaced septum.

CONCLUSION

Fracture of nasal bone should be examined and the treatment should be planned ad executed accordingly to maintain the esthetic appearance of the patient and as well as treating the fracture .

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