

TITANIUM MINI-PLATE FOR SECURING SEPTAL CARTILAGE- A CASE OF HIGH IMPACT NASAL TRAUMA.

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Introduction

- Nasoethmoid fractures require complex management to minimise functional and cosmetic deformity^{1,2}.
- Nasal septal reconstruction is commonly overlooked.
- Where underlying structural deformity is not properly addressed up to 50% patients with nasal deformity following trauma require a further rhinoplasty or septorhinoplasty³.

To achieve a good aesthetic result, management of naso-orbital ethmoid fractures should include:

- rigid fixation of the nasal pyramid
- restoration of the height and length of the nose
- projection of the tip
- reconstruction of the nasal septum
- augmentation of the lateral nasal wall⁴

- In nasal septal reconstruction post trauma, restoration of dorsal profile often takes the form of calvarial bone⁵ or rib graft⁶.
- Septal reconstruction, if undertaken, may involve Kirschner wires⁷ to restore dorsal projection.
- We present a case utilising titanium mini-plates to secure the dorsal quadrilateral cartilage to the nasal bones obviating the need for augmentation graft or wire fixation.
- This technique has not been described in this setting previously.

Case Report

- A 20 year old female was the unrestricted car passenger involved in a high impact RTA. Injuries sustained included an open, comminuted Type 1 nasoethmoid fracture with internal impaction of the cartilaginous external nose.
- A joint ENT / Maxillo-Facial approach was performed. Pre, peri and post-operative photographs illustrate the technique.
- A titanium mini-plate was used to secure the dorsal quadrilateral cartilage to intact nasal bones, as demonstrated in figure 2.



Figure 1: Pre-operative appearance



Figure 2: Peri-operative appearance with Titanium Mini-Plates *in situ*



Figure 3: Layer of Permacol™ applied prior to skin closure



Figure 4: Two weeks Post-operative appearance

Discussion

- The mini-plate may be removed in the future for optimising the final cosmetic outcome.
- Septal stability has been retained with resultant change in the dorsal nasal projection and reduction of the functional impact of the injury.
- This technique allows for primary wound closure.

Summary

- The use of titanium mini-plates, in post traumatic craniofacial reconstruction, has been found to be both safe and effective⁸.
- However, this technique of utilising a titanium mini-plate to secure the dorsal quadrilateral cartilage has not been described in this setting previously.
- We would advocate its use in similar injuries to minimise the functional and cosmetic effects of septal impaction.

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