

Traumatic telecanthus management by medial canthopexy using transnasal wiring: a case report.

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Abstract

The orbit of eye is a complex structure made up of several facial bones. The medial part of the orbital complex has attachments for support of the eye and lacrimal collecting system. The deformity in the Medial canthas can result from nasoethmoidal trauma, cancer resection, craniofacial exposure, congenital malposition, or with age-related changes leading to poor esthetic and functions. The surgical management of traumatic telecanthus is one of the most difficult tasks to be done for which various techniques have been used for medial canthus reconstruction specifically to achieve bony fixation of the medial canthal tendon. Most common method used to perform medial canthopexy is Trans-nasal wiring which is technically very difficult to perform and may cause damage to contralateral orbital structures. In our case report we present a case of a 17- year male patient having traumatic telecanthus which is managed by medial canthopexy by using stainless steel wire. This technique

can be used for noe fractures with expected telecanthus. This method has shown predictive results with minimal intervention.

Keywords: Traumatic telecanthus, medial canthopexy, transnasal wiring.

Introduction

The naso-orbito-ethmoid (NOE) complex consists of Medial canthal tendon (MCT), which provides supports, to the canthus, enables proper apposition between the eyelid and the globe, and performs as the lacrimal pump [1]. The facial trauma causes MCT rupture leading to telecanthus, causing esthetic and functional impairments. The objective of the surgery is to reposition the medial canthal area to its correct place and preserve the function and esthetics [2]. In the past various techniques like transnasal wiring, titanium screws [3], titanium miniplates cantilevered from the nose [4], have been used for this purpose. In this report we present a case of 17 year old

child with traumatic telecanthus managed by transnasal wiring.

Case report

A 17-year-old male child was reported to the department of Oral and Maxillofacial Surgery, Trauma Center, IMS-HU, Varanasi. The patient has alleged history of road traffic accident with no any history of loss of consciousness, no history of seizure, vomiting. Patient is having positive history of nasal and mouth bleed.

On inspection Generalized swelling over face with lacerated wound of 10 cm was present [Figure 1]. On palpation bony crepitation over fronto-nasal and medial side of orbit both side was present. Clinical examination revealed medial telecanthus of the both eye and the pre-op intercanthal distance measured was approximately 45mm [Figure 2]. Computed tomography images showed noe fracture [Figure 3]. Imaging confirmed the diagnosis of hypertelorism of the both eye because of the increased intercanthal distance.

Treatment

On basis of clinical and radiological examination open surgery is planned. All routine examination was done and after clearance from anesthetics, surgery under General Anaesthesia was planned. under complete aseptic condition surgery (Medial Canthopexy) under General anaesthesia started. 'H' shaped incision was marked [Figure 4a] and layerwise exposure of noe complex was done and MCT was identified. MCT was released from the nasal bone and fixed to the cribriform plate and part of the nasal bone in a superomedial direction with 26 gauge stainless steel wire [Figure 4b]. Intraoperatively, ophthalmologist consultation was taken. Closure of the exposed side with absorbable suture was done in layers followed by prolene (4-0). Extra-oral Sutures were removed after 8 days post-operatively and patient called for regular follow up [Figure 5a, 5b]. After post-op follow up

of 15 days of surgery thorough clinical examination was done and there is normal intercanthal distance of 35mm was noticed with minimum scar [Figure 6]. The patient was advised to use silicone gel and coconut oil to minimize the scar.

Discussion

In adults, NOE fractures accounts for approximately 5% of all facial fractures [5] while in children, the incidence is much higher and accounts for nearly 15% of all facial fractures [6, 7,].

The most common complications arising from NOE fractures is traumatic telecanthus due to injury and the avulsion of the medial canthal ligament [8,9,10]. The anatomical complexity and scarcity of tissue of the NOE region makes surgical treatment of telecanthus one of the most challenging tasks in facial reconstruction [11, 12]. Correction of the deformity requires adequate dissection and mobilization of the MCT, subperiosteal exposure of the medial orbit, precise identification of the correct anatomical location for tendon placement, and secure fixation of the tendon to the bone [13]. The most common methods used to perform medial canthopexy is Transnasal wiring [4, 5].

Converse and Smith in their article [16] favours early treatment of naso-orbital fractures and open reduction and fixation using transnasal wiring. With advancement and development of various surgical approaches, and computed tomography (CT), more emphasis is given to open reduction and fixation. In 1964, Mustarde and Dingman [17, 18] found superior results with open reduction and internal fixation using interfragmental wiring. Later, in 1970, Stranc [19] favours anterior transnasal wiring through existing laceration or local incision in cases of medial canthal tendon avulsion.

In Terry's report, the transnasal wiring was done after adequate exposure via coronal incision, and fixation of

bony fragments through transnasal wiring was done in accordance to correct position of mct attachment[14]. Kim *et al* [15] reported an oblique transnasal wiring that was performed by a Y-V epicanthoplasty incision rather than the well-known classical bicoronal approach, which could assist in minimizing unsightly scar formation.

In our case we used 'H' shaped incision to expose the surgical site and used 26 stainless steel wire to fix fractured fragments.

Result

Postoperatively, results showed symmetry in the intercanthal to lateral canthal width. Nasofrontal angle and nasal prominence was established to the expected position. Postoperative photographs are reviewed with the patient opinion regarding pretrauma status. This method has shown predictive results with minimal intervention.

Conclusion

This technique can be used for noe fractures with expected telecanthus. This method has shown predictive results with minimal intervention.

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Figure 3: CT images showing noe fracture.

Legend Figures



Figure 1: pre-op photograph showing lacerated wound of 10 cm.



Figure 4 a : 'H' shaped incision.



Figure 2: clinical examination showing Medial telecanthus of both eyes, Pre-op intercanthal distance -45mm.



Figure 4 b : MCT identification, Reduction and fixation by 26 gauge stainless steel wire.



Figure 5 a: Post-op (follow up 8 days)



Figure 5 b: Suture removal.



Figure 6: Post op (follow up 15 days) intercanthal distance =35mm with minimum scar.

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