Print ISSN: 2321-6379
Online ISSN: 2321-595X
DOI: 10.17354/ijss/2017/581

Case Report

A Case Study on Repair and Reduction of Infraorbital Rim Fracture

Anirban Sengupta[1], Subir Kumar Das[2], Monimoy Banerjee[3]

[1]Clinical Tutor and Demonstrator, IPGMER, SSKM Hospital, Kolkata, West Bengal, India, [2]Professor and Head, Department of Dentistry, IPGMER, SSKM Hospital, Kolkata, West Bengal, India, [3]Ex Professor and Head, Department of Oral and Maxillofacial Surgery, Dr. R. Ahmed Dental College, Kolkata, West Bengal, India

Abstract

Orbital fracture forms a major portion of the facial trauma cases, caused due to road traffic accidents. These fractures can be managed by multidisciplinary team consisting of faciomaxillary surgeons, plastic surgeons, general surgeons, and ophthalmologists. The management of these fractures can be done under general anesthesia as well as local anesthesia. There are many advantages which can be taken into consideration when the repair procedure is done under regional or local anesthesia. Here, presenting a short case of orbital rim fracture management in dental chair under local anesthesia.

Key words: Fracture repair, Local anesthesia, Orbital rim fracture

INTRODUCTION

Facial trauma constitutes a major portion of general traumatic cases. 30–40% of the cases of facial trauma involves orbit.[1] Zygomatic bone, maxillary bone, and palatine bones which make the floor of the orbit, fracture of this infraorbital rim can majorly affect the infraorbital nerves and blood vessels as it involves the infraorbital groove.[2] Various approaches are used for the repair with the help of transcutaneous and transconjunctival approach. Orbital fractures can be managed by multidisciplinary team consisting of ophthalmologists, faciomaxillary surgeon, and plastic surgeons. Introduction of newer materials such as porous polyethylene and titanium have improvised the treatment outcome.[3,4] The preliminary goal of the orbital fractures remains to reposition the herniated fat of orbit and restore the bone contours.

Access this article online

www.ijss-sn.com

Month of Submission : 10-2017
Month of Peer Review : 11-2017
Month of Acceptance : 10-2017
Month of Publishing : 12-2017

CASE REPORT

The patient came to the outpatient department after accident with swelling of the right periorbital region [Figure 1]. Informed consent has been obtained from the patient to use the photographs for record and data sharing purpose. The diagnostic radiograph was obtained. The main aim was to perform reduction and repair of infraorbital rim to maintain anatomy of fractured region from esthetic and functional point of view by rigid fixation and to avoid the parasthesia of infraorbital nerve on dental chair (backrest position was 15° angulated to the base of dental chair) under sterilization and asepsis after local anesthesia (infraorbital nerve block and infiltration of related area) with xylocaine with adrenaline (1:80000) infraorbital incision was done on the scar due to previous trauma. After blunt dissection of orbicularis muscle and after elevation of periosteum, the fractured part of infraorbital rim was clearly exposed and the operative field was extended for rigid fixation. Rigid fixation was done by six holes titanium mini orbital plate with 2 mm (four) titanium screw maintaining the law of fixation [Figure 2] and radiograph was obtained [Figure 3]. Periosteum and inner muscle layers were closed with 3–0 vicryl and superficial skin sutured by 4–0 proline. Healing was satisfactory with reduced pain after 1 week postsurgery [Figure 4] and 2 weeks [Figure 5].

Corresponding Author: Dr. Anirban Sengupta, IPGMER, SSKM Hospital, Kolkata, West Bengal, India.
E-mail: dentalresearchjima@gmail.com

Figure 1: Presurgical image

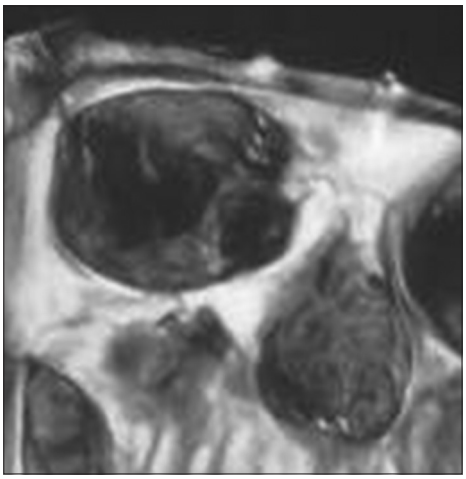

Figure 2: Pre surgical radiograph (Diagnostic)

Figure 3: Surgical approach

Figure 4: Repair of the fracture of infraorbital rim

Figure 5: Healing after 1 week of postsurgery

Figure 6: Healing after 2 week of postsurgery

DISCUSSION

Esthetic disfigurement is one of the important concerns with any road traffic accidents (RTA) and RTA is one of the leading causes for facial trauma. Faciomaxillary surgeons are in constant attempts to improve eyes and best attempts to maintain both esthetics and function. Orbital rim fractures are usually managed by exposing the lower orbital rim by various types of incisions such as subciliary infraorbital and transconjunctival. There are various complications after the treatment including scarring, ectropion, epiphora, and pigmentation. Conjunctival incisions avoid external scar

compared to skin muscle flap incisions.[5,6] Although there were options of subciliary and transconjunctival incisions which were preferred due to esthetic point of views. However, in this case, already the previous scar was there on infraorbital rim due to trauma. Hence, we preferred here infraorbital incision due to the previous scar on incision site and ease of surgery along with more exposed area of operative field. Periorbital edema with ecchymosis, parasthesia on the area supplied by lower palpebral, lateral nasal, and superior labial due to compression of nerve due to fracture were found in this case. Mainly to avoid permanent nerve damage, the fracture of infraorbital rim was repaired and the step on infraorbital rim was also corrected. In post-operative follow-up, the improvement of the patient was very significant, and the areas supplied by lower palpebral, lateral nasal and superior labial on that particular site was normal after 2 weeks that means no neuropraxia on that particular region was found. There are few cases reported to be managed under regional anesthesia and their results are compatible to the cases done under general anesthesia. The patient under regional anesthesia along with the light medication feels relaxed and comfortable during the entire procedure.[7] In nerve block always remains better than general anesthesia, due to the low-stress induction and less incidence of complication, there are reports of orbital rim fracture management with local anesthesia, but are few.[8]

CONCLUSION

If the immediate step was not taken then permanent damage of aforesaid nerves, permanent damage of those nerve could be occurred. There was no case study till revealed the infraorbital rim fracture repaired done under local anesthesia on dental chair. To save patient from neuropraxia of those particular nerve, the immediate step was taken on dental chair under local anesthesia.

ACKNOWLEDGEMENT

This case documents has been received from Saltlake Dental Foundation and Research Centre (EC-61).

REFERENCES

1. Boyette JR, Pemberton JD, Bonilla-Velez J. Management of orbital fractures: Challenges and solutions. Clin Ophthalmol 2015;9:2127-37.
2. Campbell AA, Grob SR, Yoon MK. Novel surgical approaches to the orbit. Middle East Afr J Ophthalmol 2015;22:435-41.
3. Subramanian B, Krishnamurthy S, Suresh Kumar P, Saravanan B, Padhmanabhan M. Comparison of various approaches for exposure of infraorbital rim fractures of zygoma. J Maxillofac Oral Surg 2009;8:99-102.
4. Kushner GM. Surgical approaches to the infraorbital rim and orbital floor: The case for the transconjunctival approach. J Oral Maxillofac Surg 2006;64:108-10.
5. Shirania G, Vaezib T. Application of endoscope and conventional techniques in management of orbital floor and infra-orbital rim fracture reduction. J Craniomaxillofac Res 2015;2:122-7.
6. Park HJ, Son KM, Choi WY, Cheon JS, Yang JY. Use of triamcinolone acetonide to treat lower eyelid malposition after the subciliary approach. Arch Craniofac Surg 2016;17:63-7.
7. Friedberg BL. Anesthesia for cosmetic facial surgery. Int Anesthesiol Clin 2003;41:13-28.
8. Salam GA. Regional anesthesia for office procedures: Part I. Head and neck surgeries. Am Fam Physician 2004;69:585-90.

How to cite this article: Sengupta A, Saha A, Banerjee A, Das SK, Biswas PS, Roy S. A Case Study on Repair and Reduction of Infraorbital Rim Fracture. Int J Sci Stud 2017;5(9):185-187.

Source of Support: Nil, **Conflict of Interest:** None declared.