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# Orbitofacial rehabilitation of IED blast injury using spectacles retained silicone prosthesis – A multidisciplinary approach

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## ABSTRACT

Facial deformity may cause functional and psychological impairment. Surgical, prosthetic or combinations are the available rehabilitative option in restoring proper form and aesthetics. In most situations, surgical reconstruction alone may not be feasible. When prosthetic rehabilitation is planned, the prosthesis should be indiscernible as much possible from the surrounding natural tissue. Proper treatment planning entitles the right selection of material and retentive aid for the prosthesis. This case report presents rehabilitation of facial defect secondary to surgical correction of blast injury.

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## 1. Introduction

The formidable nature of counter insurgency operations tends to produce dreadful amount of maxillofacial injuries. Facial region is one among the least protected and more prone to injuries caused due to splinters. Management of maxillofacial trauma due to gunshot wounds, improvised explosive device (IED) blasts and road traffic accidents involves greater maxillofacial surgical skill and prosthetic rehabilitation.<sup>1</sup> Since surgical correction of large defect is not always feasible, prosthetic rehabilitation remains the cornerstone for providing succour to such patients. Loss of an eye along with associated facial tissue causes great psychological trauma which can adversely affect a patient's quality of life.<sup>2</sup> Prosthetic rehabilitation of these defects requires utmost care in

providing closely matching prosthesis. Not being able to use maxillofacial implants further complicates the retention of extraoral prosthesis.<sup>3</sup> This paper presents an integrated approach in rehabilitation of maxillofacial defect caused due to IED blast with surgical reconstruction coupled with a spectacles retained orbitofacial prosthesis.

## 2. Case report

A 33 year-old male, was referred to prosthodontic OPD from the division of oral and maxillofacial surgery for the prosthetic rehabilitation of orbitofacial defect. History revealed the subject sustained injury to left zygomatico-orbital complex (ZOC) in an IED blast 05 years back. The maxillofacial injury was

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**Fig. 1 – Pre and post tarsorrhaphy left eye.**

managed with evisceration left eye and rigid fixation of ZOC in the tertiary hospital. He was subsequently provided with prosthetic eye shell. Individual was then referred to oculo-plastic surgeon for review and was referred to the Department of Dental surgery, for removal of bone plates and prosthetic rehabilitation. In the department, complete evisceration of remaining orbital content along with lacrimal gland and permanent tarsorrhaphy was done as there was very less space available for ocular prosthesis [Fig. 1]. Thereafter the patient was taken up for spectacles mounted Orbito-facial prosthesis.

The eyebrow and eyelashes were lightly lubricated with petroleum jelly and facial impression was made using irreversible hydrocolloid (Algitex, DPI), which was reinforced

externally with plaster bandage. Subsequently, a model was poured in dental stone [Fig. 2]. Boley Gauge callipers was used to measure the size of the unaffected eye. A stock eye shell was selected and shade was matched with the opposite eye after which a spectacles frame was selected [Fig. 3]. Wax pattern was made for the Zygomatico-orbital defect and the position of iris shell was determined by asking the patient to look at fixed distant point at the level of his eyes. Normal facial characteristics over the defect area were sculpted in modelling wax using the non-defect side as a guide [Fig. 4]. After trial of wax pattern the position of spectacles on the wax pattern was marked. To maintain the position of the iris a small plastic rod was attached on the tissue surface of the eye shell



**Fig. 2 – Facial moulage and working cast.**

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