Our Experience with Eyelid – Sparing Orbital Exenteration

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**Purpose:** To describe the technique, results and advantages of eyelid-sparing orbital exenteration. **Methods:** Retrospective interventional case series. **Results:** The records of 6 patients who underwent Eyelid –sparing orbital exenteration were reviewed. Of these 5 were male and 1 was a female patient. Classification of the 6 patients showed that 2 had recurrent adenoid cystic carcinoma of the lacrimal gland, 1 had recurrent squamous cell carcinoma of the caruncle, 1 had conjunctival squamous cell carcinoma, 1 had a conjunctival amelanotic melanoma and 1 had an extraocular choroidal melanoma. Following eyelid sparing exenteration all patients underwent radiation. With the eyelid-sparing technique, the mean time from exenteration to wound healing and readiness for a prosthesis was 5 weeks. At the end of 20 months, one patient died due to metastasis and 5 patients were alive and well with a healthy exenterated socket. **Conclusions:** Various malignant tumors of the orbit, often require exenteration. Exenteration is still a morbid surgery with a long process of wound healing. Advantages of the eyelid-sparing method are more rapid healing and allowing the patient earlier fitting of a prosthesis with reduced morbidity and gratifying cosmetic results.

**Orbital Exenteration** is the surgical removal of all the orbital contents including the periorbita and eyeball and is considered a mutilating procedure with a long process of wound healing. Exenteration aims at local control of disease invading the orbit that is potentially fatal or relentlessly progressive¹

**Types of Exenteration**
- Total or Eyelid sacrificing exenteration²
- Subtotal or Eyelid sparing exenteration
- Extended exenteration – with removal of diseased bone

**Indications of Exenteration**
- Malignant orbital tumors: Primary, Secondary or Metastatic. Commonest malignant tumours are Eyelid Tumours 43.3%, Ocular tumours 24.2%,
 Conjunctival tumours 13.1% and Paranasal sinus (nasal Cavity and lacrimal fossa tumours).

- Benign tumors: Painful or life threatening orbital inflammations.
- Life threatening infections: fungal infections of the orbit.
- Secondary orbital tumours were most common tumours.¹
- Malignant epithelial tumors of the lacrimal gland may require additional brachytherapy or radiation after exenteration to prevent metastasis.

The reconstruction that follows is challenging and aims to both restore boundaries between the orbit and adjacent spaces (sinuses and intracranial cavity) and to maximize the aesthetic results. Reconstruction of the exenterated socket can be done by local, regional and distant solutions. With the eyelid-sacrificing method (Total Exenteration), the orbital cavity can be lined by temporalis muscle, forehead flaps or grafts. Some surgeons advocate spontaneous granulation, pointing out that it is an easier procedure and offers comparable cosmetic results. Complete healing by spontaneous granulation (local reconstruction) however takes months, requires intensive postoperative care and results in a delay in final cosmetic outcome.³

In our study we describe the technique of Eyelid Sparing Exenteration as described by Goldberg et. al.³ (modification of the eyelid sparing method by Coston and Small). Though this surgical technique has been described in the literature, most surgeons end up reconstructing the orbit either by granulation or by a free flap. We would like to demonstrate in our study that by doing the technique of Eyelid sparing exenteration, this morbid surgery is less emotionally taxing on the patient in terms of early healing and good cosmetic outcomes and yet achieves clinically acceptable results.

Purpose of our study: To describe the technique, results and advantages of eyelid-sparing orbital exenteration.

**MATERIALS AND METHODS**

- Single centre retrospective, interventional case series.
- Study Period : 2009 to 2012.
- Study Location : P.D.Hinduja National Hospital and Medical Research Centre, Mumbai.

**RESULTS**

6 patients underwent Eyelid–sparing orbital extenteration. Of these 5 were male and 1 was a female patient. The patients age ranged from 19 years to 55 years. Classification of the 6 patients showed that 2 had recurrent adenoid cystic carcinoma of the lacrimal gland, 1 had recurrent squamous cell carcinoma of
the caruncle, 1 had conjunctival squamous cell carcinoma, 1 had a conjunctival amelanotic melanoma and 1 had an extraocular choroidal melanoma following eyelid sparing exenteration all patients underwent radiation. All patients had the exenterated tissues evaluated histopathologically and intraoperative frozen section was done to achieve clear margins before. One patient had a wound dehiscence which healed by granulation without any intervention. With the eyelid-sparing technique, the mean time from exenteration to wound healing and readiness for a prosthesis was 5 weeks. At the end of 20 months, one patient died due to metastasis and 5 patients were alive and well with no metastasis and a healthy exenterated socket.

All patients had either a CT scan/MRI of the orbit preoperative and postoperative at 6 months and one year follow up. No patient was found to have any metastatic disease on investigation. All patients were fitted with a high index polycarbonate protective glasses after Surgery

Several approaches to provide better cosmesis and more rapid recovery after exenteration have been tried. With the Eyelid sparing exenteration the healing was substantially more rapid and cosmetic results were excellent. Overall, this technique has yielded reasonable to good result. The successful use of this procedure in these 6 cases emphasizes the need to customize the orbital exenteration procedure to particular situations so that as far as possible, eradication of the orbital lesion can be achieved with minimal deformity. Conjunctival, eyelid and lacrimal gland tumors were the frequent tumors in our case series.

Eyelid-sparing exenteration can be used for cases of primary orbital malignancy and orbital invasion of conjunctival tumours or eyelid tumours without significant involvement of the skin of the eyelid.

Advantages of the eyelid-sparing method are rapid healing (mean 5 weeks), well lined exenterated cavity and earlier fitting of a prosthesis with acceptable cosmetic results.

REFERENCES