Original Article

Clinical Indications for Evisceration and Orbital Implant Trends

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Purpose: To assess the demographic characteristics and indications for evisceration.

Material and Methods: This study was conducted in the Department of Ophthalmology, Khyber Institute of Ophthalmic Medical Sciences, Hayatabad Medical Complex, Peshawar from January 2004 to October 2006. The demographic characteristics and indications for evisceration were analyzed.

Results: A total of 77 eyes of 76 patients underwent evisceration. Male patients were 78.9% and female 21%. Right eye was involved in 50% of cases and left in 48.6%. One patient (1.3%) had bilateral evisceration. 25% patients were below 16 year of age, while 30.2% patients were between 17 and 40 years and 44.7% were above 41 years of age. The most common indication for evisceration was traumatic endophthalmitis in 54.5%, followed by painful blind eye in 18%, postoperative endophthalmitis following cataract surgery in 14.2%, perforated corneal ulcer in 7.7% and endogenous endophthalmitis in 5%. Spherical prosthesis implantation was carried out in 58.4%. Extrusion of implant occurred in 26.6%.

Conclusions: Trauma is the most common cause for evisceration followed by painful blind eye and postoperative endophthalmitis following cataract surgery. The victims are usually young males following ocular trauma and elderly following intra ocular lens implantation for age related cataract. Spherical implant extrusion remains the most common complication.

James Beer is said to have been the first person who performed evisceration in 1817. It is a form of mutilating surgery involving removal of intra ocular contents through an incision in the cornea or sclera. The remaining tissues containing optic nerve, sclera, extraocular muscle and periorbita are left undisturbed [1]. The major indication for evisceration is severe intraocular infection or suppurative endophthalmitis[2]. The advantages of evisceration over enucleation include superior final cosmetic outcome after fitting the prosthesis, minimally affects orbital contents and allows removal of infection without the potential risk of spread to subarachnoid space, where possibility of imeningitis is real[2]. Frequency of extrusion of orbital implants appear[3] also lower after evisceration. However Sympathetic Ophthalmia may be encountered after evisceration. The objectives of our study were to determine the demographic characteristics and clinical indications for evisceration and the orbital implant trends in our set up.

MATERIAL AND METHODS

This study was a cross-sectional descriptive case study. It was carried at Khyber Institute of Ophthalmic Medical Sciences, Hayatabad Medical Complex, Peshawar from June 2004 to December 2006. The patients requiring evisceration were admitted and their particulars entered into a proforma. The sex, age and indication for evisceration were noted. The type of trauma - blunt or penetrating was acquired from history. Whether the trauma was associated with a foreign body was also determined. History of present or past intraocular surgery was also taken, especially cataract surgery with and without intra ocular lens implantation. If history pointed towards corneal ulcer – type and duration were looked for and in case of painful blind eye its cause was determined. B – Scan was carried out to rule out intraocular tumour. In cases of endogenous endophthalmitis source of septicemia was investigated and blood cultures were taken. The type of surgery performed – with and without spherical ball implant was determined and their complications assessed.

RESULTS

A total of 76 patients underwent evisceration with one patient requiring bilateral evisceration. There were 60 male patients (78.9%) and 16 female (21%). Right eye was eviscerated in 39 cases (50%) and left in 37(48.6%). Nineteen patients (25%) were less than 16 years of age, with 23 patients (30%) between 17 and 41 years of age and remaining 34 patients (44.7%) were above 41 years of age. The indications for evisceration are given in Table 1 with traumatic endophthalmitis as the most common indication in 42 eyes (54.5%). The causes for traumatic endophthalmitis are listed in Table 2. All patients with postoperative endophthalmitis had cataract surgery with intraocular lens implantation. No association could be found for endogenous endophthalmitis. The various procedures offered are listed in Table 3. Extrusion of implant was observed in 12 eyes (26.6%).

DISCUSSION

The controversy regarding the advantages and disadvantages of enucleation versus evisceration continues unabated. In the past, enucleation was preferred for the fear of sympathetic ophthalmia after evisceration[4]. There are some recent studies that has demonstrated the high safety of evisceration and low risk of sympathetic ophthalmia[5].

During a period of 2 years and 7 months 77 eyes of 76 patients underwent evisceration in our Department. Su and Yen reported a total of 2,779 primary orbital implants, comprising 1,919 (69%) enucleations and 860 (30.9%) eviscerations[6]. Saeed et al[7] traced 285 histopathology results from 1984 to 2003; 161 and 124 were evisceration and enucleation specimens respectively. Comparison of the two 10 year periods (1984 – 93, 1994 – 2003) showed a preference for eviscerations over the 20 years period.

Table I: Clinical indications for evisceration n = 77

Clinical indications	No. of eyes n (%)
Traumatic endophthalmitis	42 (54.5)
Painful blind and disfigured eye	14 (18.1)
Postoperative endophthalmitis	11 (4.2)
Perforated corneal ulcer	6 (7.7)
Endogenous endophthalmitis	4 (5.1)

Table 2: Causes of traumatic endophthalmitis n = 42

Inciting agent	No. of eyes n (%)
Bomb blasty injury	9 (21.4)
Iron piece	7 (16.6)
Wood	4 (9.5)
Stick	3 (7.1)
Firearm injury/air gun injury	3 (7.1)
Stone	3 (7.1)
Thorn	3 (7.1)
Scissors	2 (4.7)
Nail	2 (4.7)
Mine blast	2 (4.7)
Knife	1 (2.3)
Unknown	3 (7.1)

Table 3: Procedures performed n = 77

Procedures	No. of eyes n (%)
Evisceration with spherical implant	45 (58.4)
Large to medium size	27 (60)
Small size	18 (40)
Evisceration without implant	32 (41.5)

Tanuj et al[4] electronically reviewed medical records of 52 patients who underwent evisceration. Female patients outnumbered male counter parts [29 (55.8%) versus 23 (44.2%)]. In contrast males were predominently involved in the study by Babar et al[8]. Similarly in our study male patients were more than female [(78.9%) versus 21.0%].

The mean age at surgery was 52.8 $\pm$ 24.0 years in Tanuj et al[4] study while the most common age encountered was above 60 years in 52% in Babar et al[8] study. In our study 25% patients were in paediatric age group, 30% between 17 and 40 years while 44.7% were above 41 years of age.

The main indication for evisceration was traumatic endophthalmitis in 54.5% in our study. The common causes were bomb blast injury leading to irrepairably damaged globe with and without endophthalmitis and iron piece, wood, stick, firearm injury, stone, thorn etc causing severe endophthalmitis unresponsive to conservative regimen. Painful blind eye was the second common indication for evisceration in 18%. This was followed by postoperative endophthalmitis following cataract surgery in 14%, perforated corneal ulcer in 7.7%. Four cases (5.1%) had endogenous endophthalmitis, the cause which could not be ascertained. In Tanuj et al[4] study of comparing outcomes of enucleation and evisceration the bacterial Keratitis and two (2.5%) mycotic corneal ulcer most common indications of eviscerations were blind painful eye in 58%, trauma 21%, endophthalmitis 20% and suprachoroidal haemorrhage in 2%. In Babar et al[8] study postoperative endophthalmitis was the most common indication for evisceration in 46.3% cases followed by trauma in 28.3% and corneal ulcer in 25.4%. Shah Desai et al[9] studied the effectiveness of enucleation or evisceration in relieving pain from painful blind eyes and concluded that both are excellent in relieving pain. However, complications of surgery and orbital implants can cause recurrent pain.

The procedures performed in our study were evisceration with spherical implant in 58.4%, and evisceration without implant in 41.5%. Most implants inserted were spherical, sized 14 – 18 mm in diameter. The most common complication encountered was extrusion of implant in 26.6%. Viswanathan et al[10] evaluated current clinical practice in the United Kingdom in the management of the anophthalmic socket. Consultant Ophthalmologists were surveyed by postal questionnaire. Only 53% did enucleations or eviscerations. 92% inserted an orbital implant after primary enucleation, 69% after non-endophthalmitis evisceration, whereas 43% did so after evisceration for endophthalmitis. Implant extrusion rates varies from surgeon to surgeon and range from 0% to 20% as concluded by Liu[11]. Alwitry et al[12] analysed long term follow up of porous polyethylene spherical implants after enucleation and evisceration and revealed a significantly higher incidence of implant exposure after evisceration than after enucleation. In their opinion enucleation should be the procedure of choice when removing an eye to minimize the risk of subsequent complications, particularly orbital implant exposure.

CONCLUSIONS

Ophthalmic trauma and painful blind eye are the leading indication for evisceration. Evisceration for postoperative endophthalmitis still persists even in the new millennium. Corneal ulcer and endogenous endophthalmitis although reversible can be an indication for evisceration.

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