

Role of Ocular Evisceration in Present Scenario: A Study of 50 Patients from India

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Abstract

Background: To analyse the demographic profile, indications and surgical outcomes of ocular evisceration over a period of four years and to compare it with Indian and global data. **Materials and Methods:** It was a prospective study conducted from January, 2021 to December, 2024 on patients undergoing evisceration due to multiple etiologies. The data collected included age, sex, surgical indications and postoperative complications. **Results:** A total of 50 patients underwent evisceration during this period, out of which 33 were males. The mean age was 44.2 years and right eye was more commonly removed. Trauma was overall the most common etiology and also was leading indication for surgery in males. Infection including endophthalmitis and panophthalmitis were most common indications in females. The postoperative period was uneventful with minimal complications rate. **Conclusion:** Evisceration is distressing surgery both for the patient and their relatives. Although with advancement, the indications for evisceration are limited still the numbers can further be reduced by increasing awareness and preventing trauma.

Keywords: Evisceration, ocular trauma, ocular infection, surgical outcomes, India.

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INTRODUCTION

Surgery for removal of eye is the therapeutic measure for many end stage ocular diseases.^[1,2] Methods of surgically removing eye are enucleation, evisceration and exenteration. In Enucleation the whole eyeball is removed, whereas in evisceration sclera and extraocular muscle are left intact, exenteration is the removal of globe, including all or part of orbital soft tissue.^[3] So basically, in evisceration all intraocular contents are removed while preserving the scleral shell and extraocular muscles. This procedure is primarily indicated for managing painful blind eyes, severe ocular trauma, endophthalmitis, phthisis bulbi, and other end-stage destructive ocular conditions.^[1,2] It offers several advantages over enucleation, including better preservation of orbital anatomy, improved cosmetic results, and typically less surgical trauma as it requires less manipulation.^[4,5]

Historically, evisceration was approached with caution due to concerns over the potential risk of sympathetic ophthalmia. However, contemporary evidence indicates that the incidence is extremely low and comparable to other intraocular surgeries, making evisceration a safe and effective option in appropriate cases. Careful preoperative assessment, including ruling out intraocular malignancy, is essential as enucleation remains the preferred option if malignancy is suspected.^[4,6]

The indications for evisceration vary globally but are heavily influenced by regional prevalence of ocular trauma and infections, particularly in developing countries such as India. Ocular trauma is a significant cause of visual impairment and often leads to painful blind eye requiring surgical intervention. Infectious causes, including severe

endophthalmitis refractory to medical therapy, also constitute major indications. Other causes such as phthisis bulbi and advanced glaucoma contribute to the surgical caseload.^[7,8] Despite advances in ocular trauma management and antimicrobial therapies, evisceration remains relevant to prevent serious complications such as sympathetic ophthalmia and to improve patient comfort and cosmesis. This study aims to analyze indications, demographic profiles, and postoperative complications of evisceration performed over a four-year period on 50 patients at a tertiary eye centre in India and to compare the data with published Indian and global literature.

MATERIALS AND METHODS

This was an observational study conducted on all patients undergoing ocular evisceration from January 2021 to December 2024 at a tertiary eye care center in Northwestern part of India. The study was conducted after obtaining permission from Institutional Ethics Committee and Research Review Board of the Hospital.

The patients included were those undergoing evisceration for painful blind eye, trauma, endophthalmitis, phthisis bulbi, or

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any other destructive ocular conditions.

Detailed clinical history was taken for every patient including demographic data, and clinical indications. The preoperative status, intraoperative findings, and postoperative complications were noted and analyzed. The standard evisceration technique was performed, involving removal of intraocular contents and preservation of the sclera and ocular muscles. All patients were called for follow-up at two weeks and four weeks after surgery.

Data analysis was performed using IBM SPSS version 21.0 for Windows. All variables are presented as mean ± standard deviation (SD). They were compared using the independent samples t-test and the chi-square test. P < 0.05 was considered significant.

RESULTS

During the study period, a total of fifty patients underwent evisceration due to different ocular conditions. Among 50 patients, there were 33 males (66%) and 17 females (34%), with a male to female ratio of 1.94:1. The mean age was 44.2 ± 18.3 years with age ranging from 8 to 78 years. Right eye was involved much more commonly than left eye (29:21).

The majority patients were those with age more than 40 years. The most frequent indication was ocular trauma (32%), followed by ocular infection including endophthalmitis (24%). Phthisis bulbi accounted for 14% and painful blind eye for 10%. While for patients below 20 years the most common cause was trauma, for age more than 40 years' infection including pan- and endophthalmitis were the most common cause. [Table 1] shows etiological distribution in different age groups.

Table 1: Etiological Distribution as Per Age Groups

Etiology	Age ≤20	Age 21–40	Age >40	Total
Trauma	7	6	3	16
Infection (incl. Endophthalmitis, Panophthalmitis)	1	5	6	12
Phthisis bulbi	1	1	5	7
Neovascular glaucoma	0	0	4	4
Spontaneous perforation	0	1	2	3
Painful blind eye	1	2	2	5
Malignancy	1	0	2	3
Total	11	15	24	50

Table 2: Etiological Distribution by Sex

Etiology	Male	Female	Total	p value*
Trauma	13	3	16	0.02
Infection (incl. Endophthalmitis, Panophthalmitis)	7	5	12	0.29
Phthisis bulbi	4	3	7	0.62
Neovascular glaucoma	2	2	4	0.39
Spontaneous perforation	2	1	3	1.00
Painful blind eye	3	2	5	0.68
Malignancy	2	1	3	1.00
Total	33	17	50	

[Table 2] shows etiological distribution by sex. In males, the most common etiology was trauma accounting for nearly 40% cases. The trauma cases included road traffic accidents, sharp object injuries, and work-related accidents. In comparison, the most common etiology in females was infection (29%), which involved severe endophthalmitis resistant to maximal medical therapy and panophthalmitis. All patients underwent successful evisceration. Postoperative complications were minimal. Two patients (4%) developed socket infections which was managed conservatively. No cases of sympathetic ophthalmia or severe postoperative haemorrhage were observed. Overall, the follow-up period was uneventful and pain relief and cosmetic improvement were achieved in all cases.

DISCUSSION

Although, the incidence of enucleation/evisceration i.e. eye removal was a common procedure in the past, there is a decreasing trend of these surgeries over past two-three decades. Although there are multiple conditions requiring eye removal but the indications differ between developing and developed countries. In developed countries

the two most common causes of eye removal are tumors and painful blind eyes, whereas in developing countries trauma and infections predominate.^[9] The dominance of trauma and infection as indications aligns closely with findings from large Indian cohort studies, including studies reporting trauma in 21–41% and infections in 34–78% of respective cases.^{4,6,7} In the present study, the overall incidence of trauma was 32% while infection was 24%. Male patients predominate in terms of ocular trauma, being more prone to such trauma than female patients. Therefore, the study corroborates the common indications of evisceration in India and surrounding regions, predominantly trauma and infection-related end-stage eye diseases. The demographic profile is consistent with previous literature showing increased vulnerability of middle-aged males to ocular trauma and infections.^[4,6] Similar trends were observed in regional studies from Nepal and other developing countries.^[4,10,11,12]

Evisceration remains preferred when the sclera is intact, and no suspicion of malignancy exists, balancing surgical risks against functional and cosmetic outcomes. Reported complication rates, primarily socket infections and wound issues, ranged from 5–20%.^[4,5] Overall it is considered that evisceration as a procedure is safe and is usually associated with low risk of sympathetic

ophthalmia. In the present study also there were no any major complications reported. Also, the complication profile remains manageable with modern surgical technique and postoperative care.^[4,8]

Balta et al,^[13] were of the opinion that most eye injuries can be prevented by simple measures implemented at home, at work, and in traffic; children must be kept away from dangerous toys and substances; workers must use protective eyewear; and traffic rules must be obeyed. These measures can significantly reduce the number of patients undergoing eye surgeries including evisceration. The authors agree with Imam et al,^[14] that many causes/diseases leading to evisceration are preventable and avoidable with eye health education and early consultation with eye specialist.

This limitations of the present study include a small sample size, still the results are consistent with larger published studies supports its relevance. Increased awareness, early intervention in traumatic injuries, and optimal infection control could decrease the need for evisceration in the future.

CONCLUSION

In this study of 50 evisceration cases, ocular trauma and infection were the predominant indications in an Indian tertiary care setting. The procedure demonstrated safety with minimal complications, aligning with contemporary Indian and global literature. This study contributes valuable insights on the current clinical profile of evisceration in India.

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Conflicts of interest

There are no conflicts of interest.

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