

EVISCERATION AND ENUCLEATION IN THE UNESP SCHOOL OF MEDICINE AT BOTUCATU: A COMPARISON OF TWO DECADES

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ABSTRACT

The purpose of this study is to evaluate the changes occurred in the enucleation and evisceration treatment in the last 20 years. A retrospective study including 181 patients was performed at the Faculdade de Medicina de Botucatu (FMB) – UNESP. The patients were divided into 2 groups (G1: surgeries performed between 1979-1989 and G2: between 1990-2000). The age, sex, causes of eye loss and surgery performed (enucleation or evisceration) were evaluated. The data were submitted to the Goodman Test. The age between 21-60 years was statistically prevalent in both groups. The males were predominant in G1, but not in G2, when there was not observed prevalence between sexes. The causes of eye loss were phthisis bulbi, endophthalmitis, glaucoma and trauma and were similar in the both groups. The enucleation was the most indicated procedure in G1 and the evisceration in G2 group. The authors conclude the groups were similar in age and causes of eye lost. But they were different according sex (males mainly in G1 and both equal in G2) and surgery done (enucleation more in G1 and evisceration in G2).

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KEY WORDS: enucleation; evisceration; causes; frequency; occurrence.

INTRODUCTION

Despite the continued advances in medical and surgical treatment of eye diseases, enucleation continues to be performed more than necessary (HORNBLASS et al., 1995).

Removal of the eyes has a long history. In old Babylon and Sumeria surgeons who did not succeed in their operation had their eyes removed. The first enucleation was described some 400 years ago by Bartisch and was performed without anesthesia. It consisted in the introduction of two needles united by a rough cotton thread used to promote the prolapse of the eye and its further extirpation (RUEDEMANN, 1960). In 1817 James Bear reported the first evisceration, that is, the eye contents were removed by the scleral pouch (RUEDEMANN, 1960). Only in 1841 prosthesis was used to fill the lost volume. Mules in 1885 revolutionized the techniques with the introduction of a glass ball into the scleral cavity after an evisceration (HORNBLASS et al., 1995).

Despite the advances in the diagnostic and surgical techniques in ophthalmology and in the orbital-lid reconstruction, removal of the eye is still necessary, which is a tragedy both to patients and doctors. It is the final stage of an eye disease and is performed when all possibilities of sight function recovery are lost (OLIVALVES et al., 1975; CUNHA et al., 1987), which is a frustrating condition to ophthalmologists facing the failure of his efforts. The same applies to the patients whose psychological trauma and physical sequel may last forever.

Technological innovations in the reconstruction of the anophthalmic cavity have been modifying the orientation of doctors in the past years. The aim of this study is to evaluate modification in the profile of patients and in the indication for surgery in the last 10 years as regards the removal of the eye (enucleation) or the removal of its content (evisceration).

MATERIAL AND METHOD

A retrospective review was made on 181 patients with anophthalmic cavity from the Ambulatory of Ocular Plastic Surgery of the UNESP School of Medicine at Botucatu, including all



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cases submitted to surgery for enucleation or evisceration in the period 1970 – 2000.

Cases were allotted in two groups. Group 1 (G1) included patients operated from 1979 to 1989 and Group 2 (G2) included cases operated in the period 1990-2000.

Data collection included age at the moment of surgery, sex, reason for eye loss and type of operation (evisceration or enucleation). Data were submitted to the Test of Goodman. Letters in the Tables refers to the significance to the comparison among groups (low case) and comparison among parameters evaluated within a same group (upper case). Similar letter means equality and different letters indicate statistical significance.

RESULTS

The number of evaluated individuals in both groups was similar (52% in group 1 and 47% in group 2).

Males were predominant (64%) taking into consideration all cases that were submitted to surgery. The difference of sex was statistical significance for males in group 1 but not in group 2 (TABLE 1).

TABLE 1- Distribution of cases according to sex in both groups.

Groups	Sex		Total
	Male	Female	
G 1	65aB	30aA	95
G 2	50aA	36aA	86
TOTAL	115 (64%)	66 (36%)	181

Lower case letter compares columns; upper case letter compares lines.

In what concerns age, G1 and G2 were similarly involved in relation to age span. In both groups there was a greater number of individuals pertaining to the age span 21-60 years and beyond (TABLE 2).

Most frequent causes associated to eye loss were: phthisis bulbi (26%), endophthalmitis (21%), glaucoma (19%), trauma (17%) and others such as tumors (7%), corneal diseases (8%) and congenital alterations (2%). There was no statistical significant dif-

TABLE 2- Distribution of cases according to age span in both groups.

Group	Age span				Total
	< 10	11- 20	21- 60	> 61	
G 1	10aA	5aA	57aB	23aAB	95
G 2	7aA	8aA	41aB	30aAB	86
TOTAL	17(9%)	13 (7%)	98 (54%)	53 (29%)	181

Lower case letter compares columns; upper case letter compares lines.

ference between G1 and G2 in what regards the causes for eye loss (TABLE 3).

Enucleation was done in 60% of patients and evisceration in 40%. Enucleation was more indicated in G1 with statistical significance and the same applies to evisceration to G2 (TABLE 4).

TABLE 3 - Distribution of causes for eye loss according to the groups.

Gr.	Causes for eye loss							Total
	Phth. bulbi	Glaucoma	Trauma	Tumor	Endophtal.	Cornea	Congen.	
G1	24aB	19aB	18aB	6aA	20aB	6aA	2aA	95
G2	23aC	16aB	13aB	7aA	18aBC	8aA	1aA	86
Total	47(26%)	35(19%)	31(17%)	13(7.1%)	38(21%)	14(7.6%)	3(1.6%)	181

Lower case letter compares columns; upper case letter compares lines


TABLE 4 - Distribution of type of operation for eye removal according to groups.


Group	Type of operation		Total
	Evisceration	Enucleation	
G 1	13aA	82bB	95
G 2	59bB	27aA	86
TOTAL	72 (40.0%)	109 (60.0%)	181

Lower case letter compares columns; upper case letter compares lines.

DISCUSSION

The indication for eye removal by evisceration or enucleation, is one of the most difficult decisions the ophthalmologist has to take. Many factors have to be taken into consideration before a final option for such surgeries, which indication regards the comfort

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of patients in cases of painful sightless eyes, preservation of life in cases of tumors or for cosmetic reasons.

Males between 20 and 60 years old, usually family heads, appeared as those mostly submitted to surgery in both groups. This finding is in accordance with some studies showing a high prevalence of eye loss among young and age-productive males (OLIVALVES et al., 1975; CUNHA et al., 1987). Patients beyond 60 years were the second group more affected in which indication were due mostly by posttraumatic infection or intraocular surgery.

Despite the present advances in ophthalmology the pathologies leading to eye loss are still similar to those in the past. In both groups the most frequent causes for eye loss were phthisis bulbi, endophthalmitis, glaucoma and trauma. Endophthalmitis secondary to surgery or trauma is one of the worst diseases faced by ophthalmologists and it is an important case for sight morbidity. Even with improved methods for detection and follow up, absolute glaucoma is still a frequent cause for removal of the eye, most probably due to patient's tardiness in looking for help. Despite campaigns in health education, trauma is the cause of many sight losses.

In group 1 males were more affected; in group 2 there was a similar affection of both sexes that can be explained by the increasing participation of women in society in the last years, exposing themselves to factors predisposing to eye loss.

In group 1 enucleation was the most frequent indication in the Ambulatory where this study was conducted. However, in the last 10 years the preference relied on evisceration. Presently, enucleation is indicated only in cases of malignant tumors, in situation at risk of developing sympathetic ophthalmia or excessive contraction of the scleral pouch making difficult the introduction of an orbital implant (SOLL, 1992; MOSHFEGHI et al., 2000).

If compared to evisceration, enucleation may induce a greater contraction of the cavity due to damage to the orbital structures, leading to awkward cosmetic results and poor mobility of an external prosthesis. Cosmetic results in evisceration are better than in enucleation, as well as showing less enophthalmia and less chance to alteration in the upper lid sulcus due, most probably, to reduced loss of orbital fat; there is also protection against the spread of infection in case of endophthalmitis, as well as a better psychological effect on patients. The chance for sympathetic ophthalmia is minimal but care should be taken to achieve complete removal of eye contents.

Recently, with the development of integrative eye prosthesis, the greater availability of biomaterial for prosthesis manufacture, improved surgical techniques that include suture of extra-orbital

muscles in the outer layer or in the prosthesis itself, closure of tissues by planes and by the frequent judicial claims against doctors, there has been a certain preference towards enucleation since in this sort of operation the risk for sympathetic ophthalmia and persistence of tumors is rare (SOLL, 1992). Confirmation of this tendency needs some additional time.

However, there is still a significant number of individuals that need eye removal. Besides the adoption of new technologies to the treatment of eye diseases capable to lead to blindness and the incentive to preventive measures, the surgeon should be up-dated to provide the best treatment to those bearing an anophthalmic cavity.

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