

Clinical outcomes, patients' satisfaction and aesthetic results after lower eyelid blepharoplasty

Resultados clínicos e satisfação dos pacientes após blefaroplastia inferior

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A B S T R A C T

Objective: To evaluate the results of fifty patients undergoing transcutaneous lower eyelid blepharoplasty. **Methods:** We conducted a prospective, randomised, controlled trial between April 2005 and May 2007. Patients were randomly divided into two groups: Group 1 consisted of 25 surgical patients undergoing traditional lower blepharoplasty and routine lateral canthopexy; Group 2 consisted of 25 patients undergoing lower blepharoplasty with fat bags transposition and routine lateral canthopexy. We used the Rosenberg Self-Esteem Scale UNIFESP / EPM to assess patients' self-esteem. We also requested the participation of three independent surgeons, who examined the pre and postoperative photographs and quantified the results with the aid of a topographic scale. **Results:** The mean age was 48.8 years, predominantly females (96%). The analysis of photographs showed a 96% significant improvement. Self-esteem scores improved from a preoperative average of 5.1 (SD = 4.1) to a mean of 3.6 (SD = 3.5) six months after the operation ($p = 0.001$). **Conclusion:** Both procedures are safe and effective with low complication rates, causing improvement of self-esteem assessed six months after the operation.

Key words: Self-image. Patient satisfaction. Blepharoplasty. Aesthetics / surgery. Prospective studies

INTRODUCTION

Often the first signs of aging often appears in the periorbital area, characterized by changes in quality or quantity of skin, by fat herniation or by lengthening of the lower eyelid margin. Surgical treatment of the lower eyelid through the transcutaneous incision has traditionally involved the choice of a skin flap or a skin-muscle flap, with little difference in results between the two procedures^{1,2}.

Regarding lower blepharoplasty there are currently two currents, one tending to use more aggressive surgical technique to maximize results, while the other, more conservative, aims to minimize the risk of complications. Loeb³ was one of the first surgeons to preserve the fat during lower blepharoplasty, yet since de la Plaza and Arroyo⁴ reported the repair of the fat bags during lower blepharoplasty, the conservative approach and interest in preserving the fat cushions have generated great interest.

The evaluation of the results in plastic surgery is especially pertinent because patient satisfaction is the major factor in determining success. Typically, this assessment

should be based on subjective comparisons of selected images, however it would be considered unreliable. A more objective assessment of the results could provide more reliable guidance on the preferred standard in clinical daily practice. Thus, different assessment scores are being adopted in different situations to compare surgical outcomes⁵⁻⁷.

This study aims to evaluate the clinical outcome and satisfaction of fifty patients undergoing transcutaneous lower blepharoplasty.

METHODS

We conducted a prospective, randomized, controlled trial between April 2005 and May 2007 at the Federal University of Sao Paulo, Department of Ophthalmic Plastic Surgery.

Sample Population

Fifty consecutive patients were recruited from the Ophthalmic Plastic Surgery Clinic. All who agreed to participate signed a consent form approved by the Ethics

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Committee in Research of the Universidade Federal de São Paulo (UNIFESP/EPM) under number 01468/2004 and registered in the Australian New Zealand Clinical Trials Registry under the code ACTRN12609000732280. Participants were aged between 30 and 65.

Preoperative evaluation included a complete ophthalmologic examination and specific tests relating to any relevant medical condition. Patients with a history of injury to, or previous surgery in, the lower eyelid were excluded.

Blepharoplasty and follow-up

All 50 participants underwent transcutaneous lower blepharoplasty, being operated by the same surgeon (GAPV). They were randomly divided into two surgical groups (by lottery draw), each group consisting of 25 patients.

Blepharoplasty was performed under local anesthesia by infraorbital nerve block with lidocaine 2% and adrenaline diluted at 1:200,000. In surgical group 1 (GC1) we performed a traditional lower blepharoplasty with fat bags resection as needed. In surgical group 2 (GC2) we held a lower blepharoplasty with fat bags treated conservatively, with posterior transposition of the medial and mid bags, which were sutured to the periosteum with 6-0 Vicryl® (Ethicon® - Johnson & Johnson, São José dos Campos - SP, Brazil). After transposition, the marginal arc was set in its prior anatomical position with running sutures of 6-0 Vicryl® (Ethicon® - Johnson & Johnson, São José dos Campos - SP, Brazil).

All patients were discharged at the same day. At the first return, five days after the operation, the wounds were checked and any complications were recorded in a specific form, any signs of infection, hematoma, malposition of the eyelid margin or other unspecified complications having been researched. The second and third returns were planned for the 1st and 3rd months after blepharoplasty, unless there was a need for early return. The fourth return was planned for 6 months, when the questionnaire of self-esteem should be applied. The last follow-up was scheduled to one year after the operation.

Analysis of Results

To achieve some level of quantification, a topographic scale was used to evaluate pre and postoperative results (0 - best result, 3 - worst result)⁸. Each patient underwent a photographic assessment before and after surgery at each visit. Six standardized digital photographs were taken: one frontal with open eyes, one frontal with closed eyes, one left lateral, one right lateral, one with 45° rotation to the left and one with 45° rotation to the right. The pictures of before and after were analyzed by three surgeons who were not involved with the patients. Data provided by surgeons were grouped and the averages were used in all comparisons.

Questionnaire used in the study

To evaluate and quantify the result of the operation, all 50 patients were evaluated for their self-esteem by the Rosenberg Self-Esteem Scale. This scale was translated to Portuguese and validated by Dini⁹, being called the Rosenberg Self-Esteem Scale UNIFESP / EPM (RSES-EPM). The scale consists of ten questions, each with four alternatives. Each question varies between zero (totally agree) and three (strongly disagree). The total score can vary between zero and 30 points; the lower the score, the higher self-esteem.

To better analyze the results, we created a control group of self-esteem (GCon), composed of 25 employees of the institution, who did not wish to undergo any surgery (plastic) in the period of at least six months.

Participants in Group 2 responded to the RSES-EPM preoperatively and at six months after blepharoplasty, while the control group volunteers were evaluated at two different times, at intervals of six months between the two assessments.

Complications were classified into two types: early, when occurring within the first 15 days, and late, happening after this period.

Statistical Analysis

A nonparametric test (Wilcoxon test) was used to compare the results of the questionnaire of self-esteem in two separate stages. The Mann-Whitney test was used to analyze the importance of the subjective evaluation of the photographs. Differences were considered significant if the probability was less than 0.05.

RESULTS

The socio-demographic characteristics of both surgical groups are shown in table 1. The average age of the population was 48.8 years (34-65), with female predominance (96%). There was no difference in surgical time between the two groups and the follow-up period was at least one year (364-547 days).

The analysis results by three independent observers using a topographic scale are shown in table 2.

The descriptive analysis showed that the average preoperative self esteem evaluation was 5.1 (SD = 4.1), whereas postoperatively it was 3.6 (SD = 3.5). The median was 4.5 and the first time after six months, 3.0. The confidence interval (95%) for the preoperative questionnaire was 3.99 - 6.21, while in the postoperative it period was 2.64 - 4.92.

The analysis of the RSES-EPM showed that 31 (62%) subjects had improved self-esteem after surgery, 12 (24%) patients had their scores unchanged and in seven (14%) cases it worsened. On average, there was a reduction of 1.5 in the postoperative score (Figure 1).

Table 1 - Socio-demographic Aspects.

Variable	Surgical Group		p-value
	GC1(N=25)	GC2(N=25)	
Age (years)			
Average (SD)	49.5 (6.6)	48.1 (5.9)	0.433
Range	34 – 65	40 – 65	
Age – N (%)			0.074
30 - 39 years	2 (8.0%)	0 (0.0%)	
40 - 49 years	10 (40.0%)	18 (72.0%)	
50 - 59 years	11 (44.0%)	6 (24.0%)	
≥ 60 years	2 (8.0%)	1 (4.0%)	
Gender– N (%)			1.000
Female	24 (96.0%)	24 (96.0%)	
Male	1 (4.0%)	1 (4.0%)	
Surgery duration (hours)			0.078
Average (SD)	1.47 (0.51)	1.57 (0.41)	
Median	1.25	1.50	
Range	1.0 – 3.0	1.1 – 3.0	

SD-standard deviation.

The complications are listed in table 3. Five patients had lower eyelid malposition after one year follow-up, characterized by apparent lateral sclera. Two patients presented with chemosis, and no patient had orbital hematoma, blepharitis, lagophthalmos or ectropion of the lower eyelid.

DISCUSSION

The evolution of lower blepharoplasty resulted in divergent concepts, where some authors would be in favor of the preservation of fat bags, while others avoid damaging the orbicularis oculi muscle and still others recommend the use of musculocutaneous flap with a large detachment below the orbicularis muscle^{8,10-15}.

The authors compared the surgical outcomes between two groups of patients undergoing traditional lower blepharoplasty and lower blepharoplasty with fat bags mobilization and mobilization of the marginal arc. In deciding to perform blepharoplasty with preservation and mobilization of the fat bags, it is assumed that the volume

of these bags is not increased and their preservation is important to maintain the youthfulness of the projection of the eyeball^{10,13}. When the authors compared the operating time between the two groups, they found no statistically significant difference between them, similar to that observed by Hamra *et al.*¹⁴.

The goals of plastic surgery would be to reshape normal structures and restore the youthful appearance, improving the patient's self image. A growing number of studies have reported that the motivation for plastic surgery could not be explained solely by a simple causal relationship between personality and deformity. They have stressed the importance of interpersonal and social aspects¹⁶⁻²⁰.

Traditionally, the method of outcome assessment used in most plastic surgeries has been based on the comparison of photographs of pre and postoperative periods. Another possibility would be used by surgeons to assess the incidence of complications in each intervention. Unfortunately, none of these methods has been proven useful in the evaluation of results because they would not be reliable and validated.

Table 2 - Independent analysis.

	Analysis		p-value
	Before	After	
Average (SD)	1.54 (0.44)	0.86 (0.36)	< 0.001
Range	0.6 – 2.3	0.3 – 1.6	
Confidence interval (95%)	1.42 ; 1.66	0.77 ; 0.96	

SD-standard deviation.

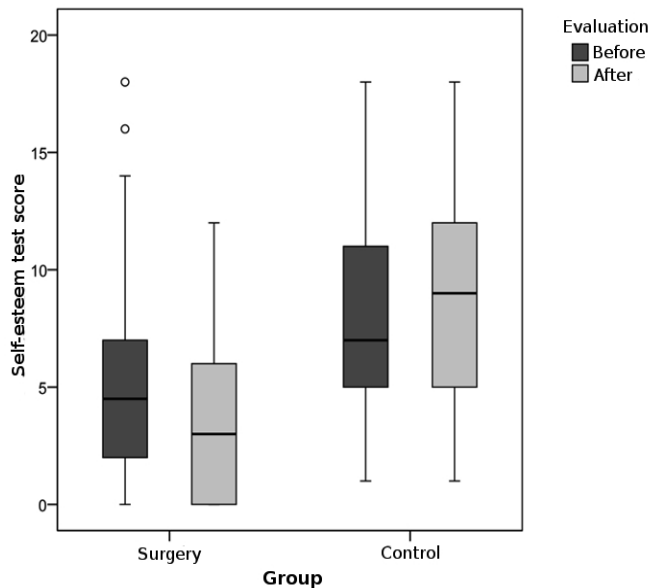


Figure 1 - Box-plot demonstrating self-esteem at two different times in the surgical X control groups.

The authors compared the surgical results of transcutaneous lower blepharoplasty not based on subjective analysis of pre and postoperative photographs, but through two modes, the first based on the assessment of patients' self-esteem and the second based on independent evaluation of three guest surgeons, who were not involved with these patients, to evaluate the photographs through a topographic scale, as proposed by Barton *et al.*⁸.

It was observed that most patients (96%) had improvement of the lower eyelids after surgery in the independent evaluation, which is consistent with the studies of Barton *et al.*⁸.

The overall result of the RSES-EPM in the preoperative period was on average 5.1, while in the postoperative period it was 3.6. Although all participants reported positive changes in their social lives and

relationships, it was observed that seven (14%) patients had worsening of self-esteem. Among these patients, the authors sought an explanation for this worsening and found some special situations: three patients were divorced, three had problems with their children and one had become a widow after the operation. Figueroa showed that pain and loss would be responsible for the rupture with significant change in body image self-esteem, which could last up to one year after the event²¹.

The independent review showed an overall end result of 0.84 on a scale of 0 to 3 ("0" being the best possible result), that the authors considered to be an acceptable level of improvement, which is consistent with results reported by Barton *et al.*⁸.

In this work we observed improved self-esteem after blepharoplasty, showing that the disapproval of the body is directly related to low self-esteem, as demonstrated by other authors^{21,22}. These results have pointed out that society and the labor market have required a more youthful appearance today, showing that since the first time Narcissus saw the reflection of his face in the lake, humanity is obsessed with appearance.

However, some limitations are present in this study. Even being an instrument of psychometric measurement, it remains difficult to establish causal relationships between variables. Important aspects of physical and psychological dysfunction may have been missed by the questionnaire used. The independent variable (surgery) could not be manipulated because of ethical and practical constraints. Therefore, a prospective research design, where the participants themselves would serve as controls too, was the most feasible and appropriate to test the hypotheses of the study. In the future, it will be necessary to consider how additional psychometric measures of body image will allow improved understanding of the results of quality of life and self-esteem routinely experienced by plastic surgery patients.

Another idea for a future study would be to hold a prospective analysis of patients undergoing plastic surgery, comparing the results of the Rosenberg Self-Esteem Scale UNIFESP / EPM with the results of the psychological domain

Tabela 3 - Complicações precoces e tardias

Complicação	Grupo Cirúrgico		Total (n=50)
	GC 1 (n=25)	GC 2 (n=25)	
Precoces			
Equimose	19 (76%)	13 (52%)	32 (64%)
Quemose	0	2 (8%)	2 (4%)
Tardias			
Esclera aparente	3 (12%)	2 (8%)	5 (10%)
Cicatriz Inestética	3 (12%)	0	3 (6%)
Edema Prolongado	1 (4%)	1 (4%)	2 (4%)
Granuloma/Exérese Cisto	1 (4%)	1 (4%)	2 (4%)
Bolsa Residual	0	1 (4%)	1 (2%)

(self-esteem facet) of the WHOQOL-BREF and verify if both results were be similar. The pros of this study include the low data loss over this period, a relatively large sample size and statistical analysis.

This study demonstrated that both surgical techniques showed good results, with a low incidence of complications. Our results confirmed the hypothesis that the lower eyelid plastic surgery improves physical

appearance, producing a positive psychological effect by improving self-esteem, this improvement being noticeable six months after blepharoplasty.

Acknowledgements

The authors thank the three independent surgeons: Angelino Júlio Cariello, Daniel Nunes e Silva and Renato Wendell Damasceno.

R E S U M O

Objetivo: Avaliar os resultados de cinquenta pacientes submetidos à blefaroplastia inferior transcutânea. **Métodos:** Estudo prospectivo, randomizado e controlado realizado entre abril de 2005 e maio de 2007. Os pacientes foram alocados aleatoriamente em dois grupos: Grupo Cirúrgico 1 composto por 25 pacientes submetidos à blefaroplastia inferior tradicional e cantopexia lateral de rotina e Grupo Cirúrgico 2 composto por 25 pacientes submetidos à blefaroplastia inferior com transposição das bolsas adiposas e cantopexia lateral de rotina. Para avaliar os resultados obtidos foi utilizada a avaliação da autoestima dos pacientes, através da Escala de Autoestima de Rosenberg UNIFESP/ EPM. O outro método utilizado foi solicitar a participação de três cirurgiões independentes que avaliaram as fotografias de pré e pós-operatórias e com o auxílio de uma escala topográfica, quantificaram os resultados. **Resultados:** A média de idade foi de 48,8 anos, com predomínio do sexo feminino (96%). A análise das fotografias mostrou que 96% dos pacientes apresentaram melhora significativa. A autoestima melhorou de um escore médio no pré-operatório de 5,1 (desvio padrão = 4,1) para um valor médio de 3,6 (desvio padrão = 3,5) seis meses após a operação ($p = 0,001$). **Conclusão:** Os autores concluíram que ambos os procedimentos seriam seguros e eficazes, com baixo índice de complicação, apresentando melhora da autoestima, avaliada seis meses após a operação.

Descritores: Auto-imagem. Satisfação do paciente. Blefaroplastia. Estética/cirurgia. Estudos prospectivos.

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Received on 12/10/2010
Accepted for publication 15/12/2010
Conflict of interest: none
Source of funding: none

How to cite this article:

Viana GAP, Osaki MH, Nishi M. Clinical outcomes, patient's satisfaction, and aesthetic results after lower eyelid blepharoplasty. Rev Col Bras

Cir. [periódico na Internet] 2011; 38(5). Disponível em URL: <http://www.scielo.br/rcbc>

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