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ORIGINAL ARTICLE

Assessment of Anatomical Variations and Surgical Techniques in Ethnic Blepharoplasty in the Hazara Community: A Cross-Sectional Study

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ABSTRACT

Background: Blepharoplasty aims to enhance the appearance and function around your eyes. Many people choose blepharoplasty worldwide since it helps improve droopy eyelids caused by dermatochalasis, fat protruding through the lid margin and ptosis. Ethnic blepharoplasty aims to address extra skin and fat, while also helping to keep or even enhance common Asian traits like the fold above the eyelid and the fullness beneath it.

Materials & Methods: A cross-sectional study was conducted from January 2023 to June 2023 under the guidelines of Hilinski declaration, after getting ethical approval from institutional review board of the Hospital. In this study, a total of 50 patients of Hazara ethnic group with the age range of 18 to 50 years of age undergoing for blepharoplasty were recruited after getting prior written informed consent.

Results: A total of 50 patients (35 females and 15 males) of Hazara ethnicity underwent blepharoplasty with the mean age of 34.7 ± 8.5 years. Study participants were assessed for anatomical variations, which included thick upper eyelid skin (76%, n=38), low supratarsal crease (62%, n=31), prominent medial epicanthal folds (54%, n=27), and lower eyelid fat herniation (48%, n=24). The mean GAIS score was 4.3 ± 0.5, indicating significant aesthetic improvement.

Conclusion: This study proves that using ethnic-specific knowledge and different surgical methods for Hazara patients in blepharoplasty achieves the best results. Mixing conservative fat removal with proper incisions and the support of extra techniques allows surgeons to make patients happy and avoid many complications.

Keywords: ethnic blepharoplasty, Hazara community, eyelid, suprasternal crease, epicanthal folds.

INTRODUCTION

Blepharoplasty aims to enhance the appearance and function around your eyes. Many people choose blepharoplasty worldwide since it helps improve droopy eyelids caused by dermatochalasis, fat protruding through the lid margin and ptosis[1,2]. With a focus on Western communities, blepharoplasty is practiced widely, but current efforts focus on how Asian populations require different surgical methods because of their unique eye shape[3].

People in the Hazara community of Pakistan show unique facial and eye area (periorbital) features, being part of a distinct ethnic group who mostly live in Balochistan. Hazaras often have a wide space between the eyes, a low bridge of the nose, folds over the eyelids and considerable periorbital fat[4]. Since these traits differ a lot from those found in Western people and are close to those in East Asians, surgeons should adapt their blepharoplasty methods to achieve a natural look and harmony[5]. Ethnic blepharoplasty aims to address extra skin and fat, while also helping to keep or even enhance common Asian traits like the fold above the eyelid and the fullness beneath it[6].

In the Hazara community, facial anatomy variations create particular problems for surgeons performing blepharoplasty. Patients with extra muscles, fat and an eyelid crease under the eyes usually require adjusted surgical techniques and planning[7]. The thicker, more oil-producing skin of the Hazara population means there is a higher risk of edema and scars after surgery if done without great care[8]. During closure, like in other Asian blepharoplasty, care must also be taken to make sure the placement of tension is symmetrical and the eyelid crease matches the eye's natural shape.

A lot of research is available for the East Asian methods used in eyelid surgery, especially among Korean, Chinese and Japanese people, but much less is known about the Hazara community in Pakistan. Most research is either based on larger Asian groups or doesn't consider the specific factors important to the Hazara[10,11]. A limited number of targeted studies prevent surgeons from learning the best ways to treat this group and inhibits the creation of guidelines suited to them. These findings suggest that we should look into the unique features in Hazara eye anatomy and identify how surgeons handle them during blepharoplasty. To bridge this gap, this study systematically evaluates the anatomy of the periorbital area in Hazara patients having blepharoplasty and looks at the outcomes of different surgical techniques used.

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MATERIALS AND METHODS

A cross-sectional study was conducted for the assessment of anatomical and surgical variations in patients undergoing blepharoplasty of Hazara community at the department of Plastic surgery and aesthetic medicine, Bolan Teaching hospital, Quetta from January 2023 to June 2023 under the guidelines of Hilinski declaration, after getting ethical approval from institutional review board of the Hospital. In this study, a total of 50 patients of Hazara ethnic group with the age range of 18 to 50 years of age undergoing for blepharoplasty were recruited after getting prior written informed consent. While the patients who has previous ocular surgeries, thyroid disease, ptosis, myasthenia gravis and coagulation and bleeding disorders were excluded from the study.

A detailed sociodemographic and previous medical history was taken and recorded including name, age, gender, educational level, history of smoking and exercise and previous medical illness. Preoperatively detailed ocular examination was done including detailed eyelid anatomy, recording crease height, tarsal platform and epicanthal fold and lower lid prominence. Based on examination and anatomical variations, surgical technique was chosen for every patients including incisional design including supra-tarsal crease incision, transconjunctival technique followed by adjunctive procedures like epicanthoplasty and fat repositioning where required. Intraoperative findings and complications were also recoded and postoperatively reactionary and seconday complications were also noted. Postsurgical aesthetic improvement was assessed by employing the Global Aesthetic Improvement Scale (GAIS) after 4 weeks of procedure. For the assessment of patient satisfaction, a pre-validated and reliable questionnaire was used and responses were compared.

Statistical Analysis: Cross-verified anonymized data was entered into Microsoft Excel version 2019 and were assessed for errors and omissions. Afterwards, data was imported to Statistical Package Software for Social Sciences (SPSS) version 26. Descriptive statistics summarized demographic and anatomical data and were presented in frequencies and percentages.

Associations between anatomical variations, surgical techniques, and outcomes were analyzed using chi-square tests, with significance set at $p<0.05$. Similarly, assessment of global aesthetic scale was done by employing independent sample t test. For significance, p-value was used at 0.05.

RESULTS

A total of 50 patients (35 females and 15 males) of Hazara ethnicity underwent blepharoplasty with the mean age of 34.7 ± 8.5 years and age range of 18 to 50 years. Study participants were assessed for anatomical variations, which included thick upper eyelid skin (76%, n=38), low supratarsal crease (62%, n=31), prominent medial epicanthal folds (54%, n=27), and lower eyelid fat herniation (48%, n=24) as depicted in bar chart (figure 1) and on appliance of chi-square it showed positive association of thick upper eyelid skin with a p-value of 0.003.

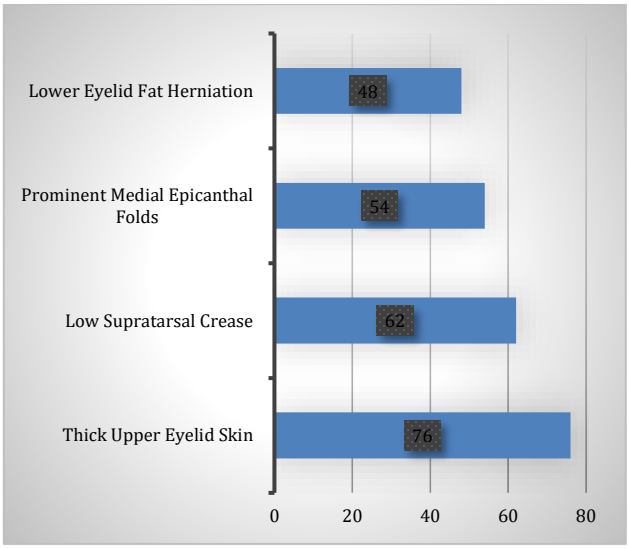

Figure 1: Assessment of Anatomical Variation of in patients undergoing Ethnic Blepharoplasty.

Assessment of surgical techniques employed was made which included supratarsal incision with conservative fat excision in 60 percent (n=30) of cases, epicanthoplasty was performed in 40 percent (n=20) of the cases, and transconjunctival approach for lower lid was employed in 30 percent (n=15) of cases and additionally fat repositioning was done in 20 percent of cases (n=10). On appliance of chi-square test on these techniques it was observed that conservative fat excision was predominately safest and most commonly employed technique with a p-value of 0.001 as explained in table 1.

Table 1: Assessment of Surgical Techniques used in Ethnic Blepharoplasty employing Chi-Square Test.

Surgical Techniques	N	%	p-value
Supratarsal Incision	30	60	0.001
Epicanthoplasty	20	40	
Transconjunctival Approach	15	30	
Fat Repositioning	10	20	

The mean GAIS score was 4.3 ± 0.5, indicating significant aesthetic improvement. Patient satisfaction scores were high, with 90% of participants rating their outcomes as 'satisfied' or 'very satisfied'. Independent sample t-test was used for the assessment of these scores and it showed, a significant positive scores with a p-value of 0.0001. Postoperative complications were minimal, with mild ecchymosis in 16% (n=8), transient chemosis in 10% (n=5), and under-correction in 4% (n=2) of cases and chi-square was employed which established ecchymosis with most common complication of ethnic blepharoplasty in Hazara community with a p-value of 0.026.

Table 2: Assessment of Complications in Ethnic Blepharoplasty employing Chi-Square Test.

Surgical Techniques	N	%	p-value
Ecchymosis	8	16	0.026
Chemosis	5	10	
Under-correction	2	4	

DISCUSSION

The study showed that it is important to understand the unique anatomy of the region and use ethnic-specific surgical methods to perform successful ethnic blepharoplasty among Pakistan's Hazara community. The analysis points out that the upper eyelids are thicker in most Hazara (76%) and their supratarsal crease is usually absent (62%). Medial epicanthal folds are also noticeable in 54% of Hazara. These findings correspond to characteristics already recognized in East Asian people such as a low or absent supratarsal crease and lot of subcutaneous fat[1,10]. Due to the thick skin, surgery in these patients causes a higher chance of edema taking a long time to go down and patients are more likely to develop noticeable scarring which has also been found in Asian subgroups[3,11]. Since the medial epicanthal folds are very clear in these patients, care must be taken during surgery and afterward to avoid making the folds too small and ensure the surgery looks natural[12].

Our results back up the effectiveness and safety of using a supratarsal incision and conservatively removing fat in most of our patients. Through this method, nearly all patients were pleased (90%) and signification improvement in looks was seen from a mean GAIS score of 4.3. Just like in other studies about Asian blepharoplasty, the conservative methods have been preferred because aggressive fat removal may cause the eyes to appear hollow and uneven[5,13]. Additionally, the addition of epicanthoplasty in about 40% and fat repositioning in about 20% reveals a complete effort to manage various anatomy changes and improve both the way the eyes look and perform[14].

Because of the low rate of complications in this study—just mild bruising, brief redness and minimal refractive error—it seems clear that specialized surgical approaches reduce the dangers for patients. Ecchymosis often happens after blepharoplasty and is usually the main postoperative difficulty, though it disappears on its own without problems[15]. As with the wider Asian blepharoplasty literature, we found standard minor complications but highlight that proper care during surgery and after help reduce these issues[16].

This research also looks at the social and cultural factors that affect how surgery is planned and what patients in the Hazara community hope for. Patients from the same region as other Asians usually prefer maintaining their cultural identity as well as achieving a pleasing appearance[17]. Lee et al. suggest that noticing ethnic differences helps blepharoplasty surgeons achieve results that meet patient expectations[11]. Based on our observations, we suggest that every patient needs full preoperative information to help them understand what to expect and so they comply with treatment guidelines necessary for good outcomes[12].

CONCLUSION

This study proves that using ethnic-specific knowledge and different surgical methods for Hazara patients in blepharoplasty achieves the best results. Mixing conservative fat removal with proper incisions and the support of extra techniques allows surgeons to make patients happy and avoid many complications. These results can be expanded through more research to design precise guidelines for Hazara ethnic blepharoplasty.

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