

Comparism study between internal & external lateral osteotomy in rhinoplasty operations

Keywords: lateral osteotomy, rhinoplasty, remodeling external, percutaneous osteotomy

Introduction

Lateral osteotomy is known as a major part of rhinoplasty for Remodeling external face of the nose and narrowing the nasal base and Dorsum after removal of the hump there are several approaches for Lateral osteotomy, namely percutaneous, intranasal, and intra-oral.¹ The two most common approaches are external percutaneous Osteotomy and the internal continuous endonasal technique. The osteotomies are performed blindly using tactile guidance.² Among the various step of rhinoplasty, surgeon has less control on the lateral osteotomy because of oedema and hematoma.³ There are many reports about the complications of lateral osteotomy, such as infection, bleeding, massive oedema, lacrimal duct injury, intracranial injuries disfigured appearance, narrow air way and nasal Obstruction.⁴

Materials and methods

A retrospective study was done of total 30 patients who were operated for rhinoplasty in AL-Yarmuk hospital All 12 patients who had undergone internal/endonasal continuous Lateral osteotomy were compared with 18 patients who had undergone External / percutaneous performing digital osteotomy. The scoring system for oedema and ecchymosis was following (as modified from Kara and Gokalan in 1999).⁵ Scoring system for edema. Grade I No coverage of iris with eyelids. Grade II Slight coverage of iris with swollen of eyelids. Grade III full coverage of iris with swollen of eyelids. Grade IV full closure of eyes. Scoring system of ecchymosis Grade I ecchymosis up to medial one third part of lower and /or upper eyelids. Grade II ecchymosis up to medial two third parts of lower and /or upper eyelids. Grade III ecchymosis up to full length and / or upper eyelids.

Operative procedure

The 12 of patients in this study had undergone endonasal High to Low to High continuous lateral osteotomy with 3mm. curved Guarded osteotome and the 18 patients had undergone percutaneous perforating digital osteotomy.

Continuous lateral osteotomy

The proposed line of osteotomy was marked with marking pen for the accurate path of osteotomy. The lateral osteotomy was done by giving small incision at pyriform aperture just above the level of attachment of inferior turbinate, periosteum was elevated only 2/3 of it is length by periosteum elevator' the osteotome was engaged and passed along sulcus of frontal process of maxilla (nasofacial groove) with tap stroke of mallet the purpose of first tapis to engage the osteotome and is done always with light force at short distance from the base of osteotome and second tap is done with more distance and force from the base of osteotome to introduce and move it further. The osteotome was gently curved medially as approaches the infra orbital rim and continue superiorly about level of intercanthalline.

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Percutaneous perforating digital osteotomy

A stab incision was given at midpoint between vestibule and medial Canthus. The tip of 2 mm osteotome was firmly press of disrupting the lacrimal sac or damage to the medial canthus ligament. It was incised cleanly with tip of osteotome by sweeping the osteotome up and down at the proposed line of osteotomy and perforation of bone was done with 2mm shape osteotome. The multiple site bone perforation was done by rotating the osteotome up and down from same sit of skin incision and bone was perforated at 2mm distance with tap stroke of mallet. Change of sound of tapping of osteotomy signals that internal cortical bone has broken. All 12 patients who had undergo endonasal continuous lateral osteotomy had periorbital oedema 2 patients (16.6 %) had grade I 3 patients (25 %) had grade II 6 patients (50%) had grade III 1 patients (8.3%) had grade IV.

Results

The ecchymosis of grade I was found in 9 patients (75 %) All patients were given the injectable dexamethasone 4mg three times daily for 1-2 days depending upon the response and grade of individual case along with oral anti-inflammatory. The 18 patients who had undergone percutaneous perforating digital Osteotomy 14 patients (77%) grade I 3 patients 16.6% grade II 1 patient grade III. The ecchymosis of grade I was found in 3 patients 16.6%.

Discussion

The external technique was used by coria in 1955⁶ and popularized by straitsms.⁷ This technique causes less tear of internal mucosa of nose as seen in cadaver studies. The preservation of periosteum in external technique provides control on bleeding , edema and ecchymosis . Only 8 patients had edema of grade II And 14 patients had edema of grade I and only 3 patients had ecchymosis. However y.⁸ in his study found the same score in both internal and external osteotomy groups for both edema and ecchymosis. Gvyskiewicz (9) carried out lateral osteotomy in 50 patients (25 patient's external

osteotomy + 25 patients internal) and found that external approach reduces post-operative ecchymosis and edema compared with internal one. Giacomarra et al.,¹⁰ also found perforating osteotomy an easy and precise approach reduced bleeding and edema formation around eye. Rohrich et al.,¹¹ performed anatomical study of 19 fresh cadavers head to compare lateral nasal osteotomies using internal and external Technique. They used direct nasal endoscope to evaluate the nasal mucosa after osteotomy and found mucosal tear 71% cases of external osteotomy as compared 74% mucosal tear in internal osteotomy.

Conclusion

External osteotomy is an easy approach to carry out and to make fracture with high precision along preset line. The fracture is greenstick type so the bone stump is stable. There is less bleeding less edema and ecchymosis around eye. The cutaneous scar at site of entry is invisible after the surgery.

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Conflicts of interest

Author declares there are no conflicts of interest.

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