

Plastic Surgery Conf 2019: Esthetic and functional result of crooked nose treatment; internal microperforating osteotomy and subtotal septal reconstruction- Hadi Nural-Mediface Medical Center, Turkey

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Crooked nose is mostly characterized by a deviation of both the bony and the cartilaginous parts of the nose. In order to obtain proper functional and improved aesthetic results, both of these parts have to be corrected.

Introduction: In rhinoplasty surgical operation, management of the bony vault and lateral walls is most often finished with mechanical gadgets: saws, chisels, osteotomes, and rasps. Over the years, those devices had been subtle to decrease damage to the surrounding tender tissues and to maximize precision. However, the ongoing lack of precision and the associated uncontrollable fracture traces caused a search for greater particular surgical equipment. Subsequently, electric contraptions with reciprocating heads had been advanced to triumph over the constraints of guide contraptions. Three, Power-assisted rasps, burrs, and saws have been designed in particular for use in rhinoplasty surgical treatment with appropriate outcomes. However, limitations exist together with the cost, accelerated operative time, hazard of soft tissue harm, extra considerable exposure, and difficulty appearing lateral osteotomies. Recently, surgeons have begun the use of piezoelectric-powered ultrasonic contraptions for the control of the bony vault and lateral osteotomies.^{5,6} These gadgets limit tender tissue damage, due to the fact a frequency of 25 to 29 kHz is utilized to cut bone, although a frequency greater than 50 kHz is essential to cut neurovascular structures. Piezoelectric inserts have the potential to selectively act on bones and/or hard cartilage, with out injuring tender tissues: skin, mucosa, and flimsy cartilages along with the top lateral cartilages (ULCs) and lower lateral cartilages. Importantly, the fracture lines created by PEIs are very correct and dispose of the hazard of radiating fracture strains encountered with traditional instrumentation. This paper will gift the evolution of our cutting-edge operative method based on 185 medical cases accomplished over an 19-month length from June 2013 to December 2014. Piezoelectric surgery is based on piezoelectric vibrations generated via an electrically provided piezoceramic transducer that may then be utilized to cut bone through various recommendations. Essentially, an electric powered current passes across the ceramic, resulting in an oscillation of ultrasonic frequency that is then amplified and transferred to a vibrating insert.^{7,eight} Bony tissue is emulsified and removed by means of suction irrigation without thermal or mechanical harm to the encompassing tissue. The ultrasonic frequency is about at a low stage, which causes the metallic insert to oscillate for slicing difficult tissues (bones, stiff cartilages), whilst leaving smooth tissues (vessels, nerves, mucous membranes) untouched. The insert's tip vibrates inside a variety of 60 to 200 μm , permitting a completely unique bone incision. Water irrigation is supplied via a distal port of the operating tip thru a hydraulic circuit inside the handpiece. A peristaltic pump permits differential water flows. A foot pedal permits the doctor to govern all of the parameters (power, mode, and irrigation). For simplification of the text, we can talk over with piezoelectric surgical treatment as PE and

the numerous piezoelectric contraptions as PEIs, so that you can consist of the numerous inserts: saws, rasps, burrs, and scalpels. PE is appropriate for all bony surgical procedure, however it's far in particular precious while get right of entry to is constrained and/or the bones are near delicate gentle tissues (vessels, nerves, pores and skin, mucosa, dura, and pleura). It permits the health care provider to perform osteotomy, ostectomy, and osteoplasty. PE is properly established clinically, with evaluation articles detailing its evolution over the last two decades.⁹ Initially, PE was applied in dental and oral surgical tactics together with excision of cysts, 1/3 molar extraction, preparation of implant websites, creation of a gap into the maxillary sinus, and elevation of endosteum. Subsequently, PE became applied in maxillofacial surgical operation with extension to maxillary LeFort I osteotomies, mandibular sagittal break up osteotomies, and cranial bone harvesting. PE is especially beneficial in craniofacial surgical treatment, as it allows massive osteotomies without harm to the underlying dura and adjoining neurovascular structures. Eleven Concurrently, packages were observed for the usage of PE in otological surgery (stapedectomy and chain replacement as well as facial nerve decompression) and hand surgical treatment (osteotomy and hardware removal). Histologic examination of bony reduce surfaces suggests that coagulative necrosis does now not arise.

The first software of PEI in rhinoplasty surgical treatment changed into reported by means of Robiony⁵ in 2004 and posted in 2007. The preliminary booklet mentioned on using a piezo scalpel for appearing lateral osteotomies via a percutaneous approach. The vibrating scalpel become passed constantly alongside the suitable osteotomy line, resulting in a non-stop osteotomy in preference to a perforating osteotomy. A greenstick transverse fracture became then executed to reap the desired motion. Several months later, Robiony¹⁵ published a preliminary report on extra programs in rhinoplasty surgical procedure inclusive of management of the bony vault as well as medial and lateral osteotomies. Hump elimination changed into finished en-bloc, with an incision of the cartilaginous hump being made along the proposed profile line using a scalpel followed with the aid of a piezoelectric noticed to cast off the whole thing cephalic to the keystone junction. Medial osteotomies have been accomplished as vertical cuts on the junction among the septum and the nasal bone, and lateral osteotomies accomplished via the aforementioned percutaneous technique. In 2013 Cochran and Roostaeian⁶ said five instances of lateral, continuous low to low osteotomies using a PE aspirator thru an intranasal lateral technique.

Objectives

The objective of this study is to evaluate the aesthetical and the functional results by correcting the bone pyramid through internal micro perforating technique and the cartilaginous part through subtotal septal reconstruction technique.

Methods

The medical records of 158 patients who have undergone through primary septorhinoplasty for crooked nose treatment during the period of 21.06.2016 and 31.07.2017 have been reviewed. Functional results have been evaluated using NOSE scores and the aesthetical results using ROE scores. The observation times have been arranged as preoperatively, 6 months-1 year (Group 1) and 1 year-2 years (Group 2).

Results

Septorhinoplasty has been performed on 158 patients with crooked nose. Out of this number 104 of the patients (□ 65,8 %) were women and 54 were males (□34,2 %). Average age of the patients was 31,59 (□9,3 %) all of who have undergone through this procedure. There was a significant improvement in the NOSE and the ROE scores of Group 1 and Group 2 and statistically significant ($P < 0,001$). There is no difference between Group 1 and Group 2.

Conclusion

In crooked nose treatments, correction of the deviated bone pyramid using internal microperforating osteotomy and correction of the severe deviated septum using subtotal septal reconstruction yields improved functional and aesthetic results

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