

Rhinoplasty is a Common Procedure in Plastic Surgery

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ABSTRACT

Rhinoplasty is a surgical procedure that solves aesthetic and functional problems of the nose, such as a protruding nasal septum, humped nose or deviated septum. The nose is the most visible organ on the human body and is therefore the most exposed to the views of others, and for this reason an increasing number of people decide to correct it. In addition to the external deformation, there are also deformations of the internal structures of the nose that cause difficulty breathing.

Keywords: The Nose, Layers, Analysis, Surgery

Introduction

Careful nasal analysis is the important first step for a successful outcome [1]. If the healthcare professional fails to preoperatively become aware of a selected anatomic anomaly, long-time period consequences may be compromised. The perfect nostril is one this is balanced with different facial functions of the affected person. The perfect nose does now no longer draw interest to itself, however as a substitute attracts interest to the eyes. Proper evaluation starts off evolved with a radical records to become aware of the affected person's perceived complaint, motivation for surgical procedure, and surgical expectation following remedy. The healthcare professional should decide if the affected person's expectancies are reasonable, realistic, and obtainable. Men normally are extra proof against converting their outside look than women. It is throughout the records that the rhinoplasty healthcare professional evaluates the affected person's psychiatric status. The majority of people looking for rhinoplasty are psychiatrically ordinary, however one should usually be careful whilst managing a person with frame dysmorphic sickness. In addition, preoperative excessive degrees of hysteria may be a chance component for postoperative slight despair and should be taken into consideration withinside the session process.

Standard picturegraph documentation for all sufferers includes frontal view, left and proper lateral, left and proper oblique, and base view. All pics ought to be curious about the affected person withinside the Frankfort horizontal function (line from EAC to infraorbital rim).

Accurate preoperative evaluation and medical prognosis set the muse for a hit number one open rhinoplasty [2]. Open rhinoplasty lets in anatomic publicity, identification, and correction of nasal deformities. Component dorsal hump discount lets in correct and incremental discount of the nasal dorsum even as stopping troubles with inner valve crumble or dorsal irregularities. Nasal tip suturing strategies permit manage of definition with out negative the osseocartilaginous framework and compromising help. Knowledge of the ordinary route of healing and capability complications is fundamental to dealing with affected person expectancies withinside the postoperative period.

Nature is predictable - therefore, nasal phenomenology may be understood. Rhinoplasty has consistent "behavioral" guidelines, like every surgical procedure - therefore, the healthcare professional can manage the end result. Nasal deformities aren't endless or lawless however observe patterns - therefore, their answers observe patterns. Sequential intraoperative images teaches nasal conduct and structural interactions. Follow the technical guidelines that practice to all different surgical procedure: restrict dissection, morbidity, and anxiety on closure.

The Nose

The nose is the maximum prominent characteristic of the face with complicated curvatures and contours [3]. The intersecting concavities and convexities are distinct. Additionally, the overlying pores and skin of the nose varies in thickness and composition with the top two-thirds being skinny and the decrease third being thick and sebaceous. These outside traits in addition to amazing practical necessities make reconstruction of the nostril a full-size operative challenge. Currently, the

overpowering majority of nasal smooth-tissue defects end result from nonmelanoma pores and skin most cancers excision. The presence of the nose because the maximum distinguished characteristic at the face lends it maximum at risk of solar publicity with ensuing ultraviolet harm and next pores and skin most cancers. Currently, the nostril is the maximum not unusualplace site of pores and skin most cancers of the pinnacle and neck with almost a quarter million new instances of nasal nonmelanoma pores and skin cancers identified each year. The modern widespread of take care of pores and skin cancers at the nose includes Mohs histographic tumor excision and reconstruction through a healthcare professional. The apparent instantaneously blessings of a Mohs excision are a completely low recurrence charge and protection of the most quantity of local tissue. As against different regions of the face, a hit nasal reconstruction calls for reconstructive necessities that encompass specific insurance lining and framework. The maximum vital, and at instances the maximum confusing, is the idea of subunit as opposed to disorder reconstruction. Understand that the nose has 9 nasal subunits and those are primarily based totally on transitions withinside the shadows among herbal convexities and concavities of the nose. The arguments for both re-developing a partial subunit disorder or reconstruction of the complete subunit are primarily based totally each at the real technical execution and the very last end result. The decrease third subunits encompass the alar lobule, smooth triangle, the paired smooth triangles, and the single tip. The conversion of partial defects of the subunit that contains 50% or much less into general subunit defects will bring about the healthcare professional's incisions alongside natural crease lines, in addition to the legitimate argument that a practitioner who maintenance a whole ala or tip subunit again and again turns into adept at re-introduction of the complete subunit each time. Simplicity, repeatability, execution, and stepped forward very last aesthetic consequences are predicted from the exercise of subunit reconstruction. The arguments towards subunit reconstruction are various and argue towards resection of "ordinary tissue" with the consequent requirement of large donor sites with next morbidity. It is likewise vital to recognize that subunit reconstruction has in no way been endorsed for the top -thirds of the nose, this is, the dorsum or sidewalls. These regions are pretty flat and featureless. There isn't anyt any inherent gain to putting scars withinside the borders of those regions and actually the bulk of those defects may be repaired with full-thickness, disorder-handiast pores and skin grafting. It is prudent to be conscious and adept at subunit and disorder reconstruction, and be capable of exercise each.

Layers

It is useful to conceptualize the nose as a system of interrelated layers [2]. The outer layer, like a smooth, elastic sleeve, slides over the internal semirigid layer and incorporates the complete making an investment nasal smooth tissues plus the alar cartilages and their related lining. The internal layer incorporates the whole lot else (the bony and top cartilaginous vaults, the nasal septum, and their related linings). This -layer idea associates the ones systems that behave collectively anatomically and functionally, and presents an reason behind the "global" manifestations of a few surgical adjustments (e.g., the impact of dorsal discount or augmentation on nasal period). The inner nasal valve is shaped through the articulation of the caudal and anterior (or dorsal) edges of the top lateral cartilages with the anterior septal edge.

The outside nasal valve consists of the cutaneous and skeletal help of the mobile alar wall (the alar cartilage lateral crura with their related outside and vestibular pores and skin coverings).

Analysis

Although many elements play a function withinside the usual look of the nose, along with race, age, and ethnicity, numerous simple landmarks and relationships are not unusualplace to any evaluation of the nostril previous to beauty rhinoplasty [4]. Nasal evaluation consists of evaluation of pores and skin first-rate and texture, help (tip flinch), floor landmarks and functions, and facial stability.

Skin thickness and pathology together with rhinophyma or scarring are noted. The first-rate of the pores and skin has vital implications mainly regarding the nasal tip. For example, sufferers with thick pores and skin and bulbous tip systems are properly acceptable for sizable tip refinement. The thick pores and skin has a tendency to efface the pointy angles and moderate irregularities withinside the underlying cartilaginous framework created through such sizable paintings. The contrary holds real in skinny-skinned people, so cartilaginous paintings at the tip is typically extra conservative.

Tip flinch is essential to any exam of the nasal tip. By lightly miserable the nasal tip, the examiner can estimate resiliency and tip help. Poor flinch is gift whilst the spring withinside the nasal tip is significantly diminished, indicating attenuated underlying cartilaginous help. In those instances, the want for extra cartilaginous help withinside the shape of grafts or sutures ought to be anticipated.

Other situations that could motive tip projection abnormalities encompass a hypoplastic premaxilla ensuing in retropositioning of the complete nasal base. The nasolabial perspective is likewise typically much less than ninety degrees and there's a few degree of tip ptosis. This situation is maximum normally located in sufferers with a records of cleft palate and people with Binder's syndrome (maxillonasal dysplasia).

Important floor landmarks in simple nasal evaluation encompass the supraorbital ridges; medical domes; nasal lobule; alar margins, grooves, and creases; medial canthi; radix nasi; rhinion; nasal tip; subnasale; columellar break; top vermilion; pogonion; glabella; alar fold; columella base; and medial crural footplates. These landmarks are used to outline systems and aesthetic relationships which are vital in nasal evaluation. The nostril is to start with assessed from 3 perspectives: anteroposteriorly (portrait view), laterally (profile view), and inferiorly (basal view). The portrait view consists of evaluation of the nasociliary lines, alar-lobule contour, nasal width, nasal width-to-period ratio, and usual symmetry. The profile view consists of evaluation of the contour of the dorsum and supratip, columella-lobule-tip configuration, radix peak, nasofrontal perspective, nasolabial perspective, nasal tip projection, chin projection, columellar function, and alar fold function. The basal view consists of evaluation of footplate flaring, caudal septal deviation, nostril form, lobule width-to-base ratio, and lobule peak-to-columellar peak ratio.

Techniques

The nostril is an essential aesthetic unit of the important face [5]. Rhinoplasty may be one of the maximum hard methods in plastic surgical procedure, however if achieved properly it is able to definitely enhance each facial aesthetics and feature. The nasal exam, and any capability surgical modifications, move element and parcel with the cephalometric assessment and orthognathic methods. A targeted preoperative assessment is important to elicit the affected person's dreams and preferred adjustments, and to appropriately diagnose pre-current anatomic troubles. A hit rhinoplasty consequences from the application of the correct strategies from the healthcare professional's armamentarium to exactly cope with the affected person's unique anatomical troubles. When thinking about rhinoplasty for a affected person, it's far fairly endorsed that the healthcare professional unusual and unpracticed with the strategies ought to take a graduated method, first taking part with a extra skilled colleague previous to trying the manner independently. This is secondary to the issue of the manner, the excessive degree of visibility of the surgical end result, and the alteration of a shape essential to the affected person's facial identity – the rhinoplasty affected person should usually be approached with the precise degree of care and caution.

While the closed rhinoplasty method stays a quick and green manner of addressing sure nasal deformities, it's far our opinion that the open rhinoplasty method is extra versatile - taking into consideration entire visualization, meticulous correction of cartilaginous anatomy the use of discount and repositioning strategies, and specific and stable placement of graft material. The open method is desired in orthognathic sufferers to accurate the tip, alar, and vault deformities that could get up or persist following Le Fort I development of the maxilla, to soundly vicinity any cartilage grafts needed, and stabilize the bottom and posterior septal perspective, because the septum is not connected to the anterior nasal spine (ANS).

Perioperative Evaluation

In the orthognathic affected person requiring rhinoplasty, it's far vital to element their preceding or upcoming orthognathic methods as this will make a contribution to, or ameliorate, the nasal troubles requiring correction [5]. When thinking about each orthognathic methods and rhinoplasty withinside the equal affected person, rhinoplasty ought to now no longer be achieved previous to orthognathic surgical procedure because of the changes of the nasal base that arise with Le Fort I actions that could full-size have an effect on alar base width, dorsal profile, and tip projection and rotation. While rhinoplasty can theoretically be achieved together with or after orthognathic surgical procedure, one should recall the reality that in a Le Fort I manner the cartilaginous septum is indifferent from the ANS and the maxillary crest, reducing its balance. If the deliberate rhinoplasty would require septal harvest it's far prudent to remember delaying the rhinoplasty for 6 months to twelve months after orthognathic surgical procedure to limit the chance of fracturing the septal L-strut on the keystone area, that is its sole final factor of attachment. Lastly, skeletal boom issues might also component into remedy timing, with the overall consensus being that each rhinoplasty and orthognathic methods ought to be behind schedule till skeletal boom is entire.

A centered overview of structures is conducted, specially asking approximately nasal obstruction and problem respiratory (via the left nare, proper nare, or bilaterally), mouth respiratory throughout workout or exertion, loud night breathing, obstructive sleep apnea, common sinus infections, common sinus congestion, a records of allergic rhinitis, and a records of preceding nasal trauma or nasal surgical procedure. If the affected person has a records of loud night breathing or sleep apnea, a preoperative sleep examine will also be a part of the assessment. The affected person is requested approximately conservative control in their nasal symptoms, in the event that they have tried use of nasal sprays, for a way long, and whether or not or now no longer their use has stepped forward their symptoms.

Preoperative assessment of the affected person's emotional balance ought to additionally arise. A better occurrence of frame dysmorphic sickness can be preferred in sufferers looking for rhinoplasty. A frank dialogue to recognize the effect of the nasal deformity at the affected person's livelihood ought to be carried out, along with the unique nasal substructures they desire to have altered. Discordance withinside the degree of deformity perceived through the affected person as compared to the real deformity documented on goal evaluation can also additionally imply a mental aspect to the affected person's worries. This ought to create pause withinside the healthcare professional, and that they ought to cautiously remember whether or not rhinoplasty will meet the expectancies and desires of the affected person. In intense instances, a proper outside mental assessment can be warranted.

Orthognathic Surgery

A dentofacial deformity exists whilst the tooth do now no longer in shape collectively because of incompatibility of jaw length and/or relationship [6]. Functional and look troubles accompany the dentofacial disharmony, along with problem with incising, chewing, respiratory, speaking, smiling, ultimate the lips, and strong, weak, or uneven facial systems. This mixture of practical and look worries is bothersome, and motivates sufferers to are trying to find remedy. The conventional awareness of orthognathic surgical procedure is to impart a ordinary occlusion to enhance masticatory feature, with viable secondary considered necessary advantages of different practical and aesthetic associated enhancement. However, it's far not unusualplace now that sufferers are extra driven (or at the least as much) through the beauty possibility that jaw surgical procedure permits.

The first-degree goal in orthognathic surgical procedure is to attain a stable, practical magnificence I occlusion. However, this simple end result, whilst straightening and aligning the jaws and tooth, may be executed in any countless vertical, sagittal, side-to-side, roll, and yaw positions in area. For instance, a category I occlusion may be executed, but the jaws nonetheless left poor sagittally (with persevered airway obstruction); or a category I with yaw or cant discrepancies may be gift, which confers a full-size and great unaesthetic look. As such, the following-degree goal in orthognathic surgical procedure is to vicinity the maxillomandibular unit now no longer handiest in a category I, however withinside the maximum aesthetically optimized function in area. This additionally has a tendency to contain right practical improvement (e.g. airway), through facial skeletal expansion. As in nature, the maximum balanced and attractive

morphology is likewise regularly the maximum practical (shape and feature are intertwined).

Similarly, surgical balance and aesthetics also are complimentary. Rigid fixation, and liberal use of interpositional grafts, permit for almost any 3-dimensional motion in area with improved balance. The aesthetic-minded orthognathic healthcare professional must be snug with huge significance and complicated actions, which will attain each a Class I occlusion, and additionally premiere facial stability, feature, and harmony. The final degree of intervention is interest to the form and morphology of the maxillomandibular skeleton and the encircling areas and tissues. Augmentation and/or discount or different change of the zygoma, orbits, nostril, lips, mandibular angles, chin, and submental area want to be taken into consideration and integrated into the remedy plan.

Bleeding

Inappropriate bleeding is one of the maximum not unusualplace complications of nasal surgeries, which could cause negative visibility and healthcare professional's frustration [7]. Additionally, immoderate bleeding can motive notably extra edema, ecchymosis, and extended anesthesia time.

Although it isn't viable to prevent all sudden bleeding, sure preventive measures ought to be taken to lessen its likelihood. All sufferers ought to be evaluated for viable underlying bleeding disorders. A cautious and targeted records and bodily exam ought to be achieved on all surgical applicants with unique interest to immoderate bleeding after preceding surgical procedure or trauma and own circle of relatives records of bleeding disorders. All surgical sufferers ought to be wondered approximately taking anticoagulants or any drug that could intervene with hemostasis. Aspirin is one of the maximum normally taken medicine that notably inhibits platelet aggregation. Patients ought to additionally be specially requested approximately natural medicinal drug together with ginkgo and ginseng, that have proven to growth coagulation time. Aspirin, in addition to different anticoagulants and all natural medications, ought to be discontinued 14 days previous to manner after suitable session with affected person's number one care physician. In addition, suitable preoperative injection the use of nearby anesthetic combined with epinephrine into the subcutaneous tissue and topical Afrin (oxymetazoline) at the mucosa, with adequate time given for the onset of those capsules can drastically lessen intraoperative bleeding.

Hypertension is any other not unusualplace motive for intraoperative bleeding and may be resulting from insufficient intensity of anesthesia after preliminary painful stimulus and on the time of emergence. Patients present process rhinoplasty ought to commonly be normotensive pre- and postoperatively which will limit bleeding. It is vital to don't forget that nearby anesthetic with epinephrine, and topical Afrin(oxymetazoline), can increase the blood pressure.

Early postoperative epistaxis may be controlled with topical oxymetazoline, or with ice, virtual pressure, and head elevation. In case of chronic bleeding regardless of conservative interventions, the bleeding supply ought to be recognized through getting rid of all clots and direct exam of surgical sites. Epinephrine soaked cotton rolls can limit the bleeding to assist with a radical and direct exam. Anterior or posterior packing, relying at the vicinity

of bleeding, is the following step of intervention. Packing ought to be lined with antibacterial ointment and ought to be stored in vicinity for 24-48 h, and on occasion longer. The affected person ought to be told to hold the packing wet with saline drops broad-spectrum oral antibiotics ought to be prescribed, even as affected person has packing in vicinity to save you the improvement of poisonous surprise syndrome. Nasal packing ought to be eliminated slowly to save you rebleeding.

In the uncommon state of affairs of uncontrollable bleeding whilst the maxillary artery or posterior ethmoid artery are concept to be the supply, interventional radiologist session ought to be acquired for embolization. A go back journey to the running ought to additionally be taken into consideration withinside the case of chronic profuse bleeding that is refractory to all referred to interventions.

Procedure

Nasal surgical procedure, or rhinoplasty, can adjust a affected person's nasal look and accurate nasal obstructive symptoms [8]. When the nasal septum is likewise modified, the manner is referred to as a septorhinoplasty. Appearance adjustments can also additionally encompass enhancing the nasal profile, the nasal bridge width, getting rid of a dorsal hump, or enhancing nasal tip definition. Patients of every age can also additionally go through nasal surgical procedure. Younger sufferers typically are trying to find to stability their nasal proportions with their current facial functions and dispose of nasal obstructive symptoms. Older sufferers regularly have rhinoplasty to rejuvenate a drooping nasal profile. With getting older the top lateral cartilages can separate and glide farfar from the nasal bones above them, inflicting an obvious nostril lengthening and drooping nasal tip. This happens extra normally in men.

Nasal surgical procedure is achieved most customarily with all inner nasal incisions. More sizable nasal surgical methods can also additionally require an open method, which makes use of a further columellar pores and skin extension incision. During nasal surgical procedure, the nasal tip cartilages are delicate and the dorsal profile is stepped forward with hump discount and thinning. This is performed with a mixture of trimming the nasal cartilages and shaping of the nasal bones, with rasping and bony osteotomies. Nasal dressings postoperatively encompass an outside supportive splint and inner packing as required. These dressings are eliminated in three to 7 days relying at the surgical procedure.

Initial healing is 7 to ten days, with very last consequences extra absolutely preferred in approximately three months. Potential complications encompass bleeding, asymmetry, contamination, septal hematoma, and overcorrection or undercorrection.

Postoperative Infections

Infection after rhinoplasty is a unprecedented event [9]. However, the trouble calls for instantaneously interest, because the severity of contamination can also additionally variety from localized erythema to bacteremia, with the latter capable of motive poisonous surprise syndrome, cavernous sinus thrombosis, or maybe mind abscesses. Rhinoplasty is taken into consideration a clean-infected manner. Preoperative antibiotic use has been endorsed withinside the following situations: sufferers with immunosuppression, the ones at excessive chance for infectious

endocarditis, instances of complicated nasal surgical procedure with the presence of hematoma, the usage of implants or grafts, or the prolonged use of nasal packing past 24 h.

Postoperative contamination following rhinoplasty is maximum regularly minor, and the affected person normally affords with localized erythema or cellulitis. After ruling out an allergic reaction, antibiotics and intranasal bacitracin ought to be initiated. In the case of an abscess, which could gift as much as numerous years after as a suture abscess, incision and drainage is indicated.

Some rhinoplasty applicants with aesthetic court cases might also have practical troubles, together with allergic rhinitis or persistent rhinosinusitis. Performing rhinoplasty in those sufferers can get worse rhinosinusitis because of adjustments withinside the ostiomeatal complicated. Therefore, it's far vital to shape a complete remedy plan with antiinflammatory medications, practical endoscopic sinus surgical procedure, and concurrent rhinoplasty.

Toxic surprise syndrome (TSS), maximum normally located with the usage of tampons, is likewise related to nasal packing in rhinoplasty. Although extraordinarily uncommon following rhinoplasty, TSS can also additionally gift as a life-threatening situation that incorporates a excessive mortality charge. TSS happens whilst *Staphylococcus aureus* micro organism launch poisonous surprise syndrome toxin 1 into the bloodstream of a prone and formerly colonized individual. The trouble affords early, throughout postoperative days 3–5, with fever, nausea, vomiting, diarrhea, hypotension, and erythema, which fast cause multi-organ failure. TSS calls for competitive hemodynamic help in an extensive care unit setting, together with instantaneously elimination of the nasal packing/splint, systemic antibiotics, and infectious sickness session.

Manipulation of the nasal septum or median osteotomy throughout septorhinoplasty can motive a annoying fracture of the cribriform plate or a dural tear, which can also additionally cause cerebrospinal fluid (CSF) leak and intracranial complications. Although infrequent, life-threatening situations do end result, together with cavernous sinus thrombosis, meningitis, subdural empyema, mind abscess, subarachnoid hemorrhage, or pneumocephalus. When complications are recognized, broadspectrum antibiotic insurance and a multidisciplinary method with neurosurgery are endorsed.

Reconstruction of nasal shape calls for meticulous surgical competencies to attain each ok airway efficiency in addition to an aesthetically eye-catching outcome. Although autologous grafts offer for decrease contamination rates, alloplastic augmentation of the nasal structure has received reputation because of its simplicity, shorter operative time, and shortage of donor-site morbidity. As with every other implant material, nasal alloplastic implants are at risk of contamination and extrusion.

Conclusion

Rhinoplasty is an operation that reshapes the nose and is a common procedure in plastic surgery that can be performed for

aesthetic or reconstructive purposes. The aim of rhinoplasty is to improve the proportions and appearance of the nose and to improve the overall balance of the face. The nose can be enlarged, reduced or flattened. The shape of the tip, back and nostrils can be reshaped and it is possible to correct the angle between the nose and the upper lip. It is also possible to shorten the nose and reduce the large tip of the nose by removing part of the cartilage from the end of the nose. The position of the bone and cartilage that separates the nasal cavity can be adjusted to facilitate nasal breathing. Properly planned and precisely performed rhinoplasty should give good aesthetic results and allow patients to breathe easier. The size of the nose as the central characteristic of the face depends on the proportions of other characteristics, such as the chin and cheekbones. Sometimes it is necessary to change these characteristics in order to harmonize the appearance.

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