A Medical Approach for Rhinoplasty

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Abstract:
Rhinoplasty is one of the most commonly performed aesthetic surgical procedures in plastic surgery. Over the past 20 years, one of the most gratifying operations performed by facial plastic surgeons remains rhinoplasty. Both surgeries and patients may feel like they are running "home" when everything is running as scheduled, but mutual sadness may also occur when the outcome is different. Many of the typical complexities can be prevented with careful attention to particular operational maneuvers with intentional actions, extra grafts, or more conservative resections during the main rhino-plastic procedure. A view of these retrospective problems may reveal typical risks that are preemptive when the procedure is performed. Due to the subjective character of the esthetic outcome, the identification of problems in cosmetic rhinoplasty is challenging. One may expect rhino-plastic patients more critical of the outcomes, but our experience as well as those of others suggest that the surgeon is more likely than the patient to be satisfied. With a subsequent medial collapse, the ULCs might become destabilized. Moreover, the new dorsal septum produced by the excision of the hump is smaller than the original native dorsum. Even if the ULCs shrink solidly to the septum, a constricted middle vault region will be created.

Key words; Dorsal hump reduction, Dorsal augmentation, Twisted Dorsum, Tip Narrowing, upper lateral cartilage, Spreader graft, valve collapse

1. Introduction
Rhinoplasty can be a patient and doctor gratifying operation that impacts patient self-esteem and quality of life. If the results are good, it is simple and predictable to contemplate the operation. When problems occur, deformations can be exceedingly difficult to repair, and even the expert surgeon may get anxious (De Meurechty, Mommaerts, & surgery, 2018). The intricate interaction of soft tissue and the structural frame makes it challenging and at times unpredictable for surgical manipulation. Besides technical strictness, patients who desire esthetic rhinoplasty frequently are very conscious of their looks and even analyze tiny flaws (Choi, 2020). This combination of variables makes rhinoplasty surgery highly important. Although acute postoperative problems, the most complex and troublesome outcomes are discussed in this article. Due to the subjective character of the esthetic outcome, the identification of problems in cosmetic rhinoplasty is challenging (Alhussain et al., 2020). One may expect rhino-plastic patients more critical of the outcomes, but our experience as well as those of others suggest that the surgeon is more likely than the patient to be in satisfied (DeVictor, Ong, Sherris, & Surgery, 2021). The rate of revision or subsequent rhinoplasticism is one technique of identifying problems. Average revision chirurgical rate 8%-15%, certain specialist groups require revision in 5%-10% of initial cases, as reported in the literature (Hudise, Aldhabaan, & Aldosari, 2020).
Table 1: A summary of the risks and surgical concepts connected with the primary rhinoplasty goal

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<th>Goal of Rhinoplasty</th>
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<td>Ensure adequate resection of dorsal septum</td>
<td>(Hohman, Vincent, Anderson, Ducic, &amp; Cochran, 2020)</td>
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<td></td>
<td>Excessive resection</td>
<td>Scooping of cartilage or plunging osteotomies</td>
<td>Conservative resection and leave biplanar dorsal with slight hump under thin skin of rhinion.</td>
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<td>Internal valve collapse</td>
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<td>Dorsal augmentation</td>
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<td>Autogenous warping</td>
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<td>Carving central core of rib cartilage and rigid fixation</td>
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<td>Twisted Dorsum</td>
<td>Persistent Deformity</td>
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<td>Inter-Valve area Collapse</td>
<td>Contracture and collapse from binding sutures</td>
<td>Minimize resection; Strut grafting to straighten intrinsic recurvature of LLC</td>
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<td>Bossae</td>
<td>Contracture and buckling of LLC</td>
<td>Minimize resection; camouflage graft</td>
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<td>Pinched Tip</td>
<td>Over-aggressive narrowing from sutures and resection</td>
<td>Maintain adequate space between tip defining points</td>
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<td>Tip Ptosis</td>
<td>Loss of tip support</td>
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Complications such as buckling cartilage or soft tissue collapse may be categorized by their anatomical origin. While this anatomical grouping is important in characterizing the deficiency, it cannot define the principle of basic rhinoplasty (Ferraz & Sella, 2021). Another effective method to look at rhino-plastic complications is by considering technical errors in the original operation which might lead to unforeseen long-term consequences (Keyhan, Ramezanzade, Bohluli, Fallahi, Mirzahoseini, et al., 2021). Although this talk isn't about how any problems are corrected, it focuses on what complications arise following primary rhino-plastic surgery and how careful preparation and execution have prevented them. For simple reference, Table 1 highlights the major points of this debate (Heilbronn, Cragun, Wong, & medicine, 2020).

1.1 Dorsal Hump Reduction
The most common particular objective for primary rhinoplasty may be reducing big dorsal bumps. Patients and sometimes surgeons often regard this work as straightforward and uncomplicated, but esthetic and functional problems. The dorsal dorsum is made up of a higher vault and a middle vault cartilage (Keyhan, Ramezanzade, Bohluli, Fallahi, Shakiba, et al., 2021). Patients with an elevated dorsal hump have typically excess of both, which often need osteotomies, grafting and/or grafting in attempts to decrease the hump (Figure 01). If you want to decrease the backbone you must be aware of the hazards that lead to every deformity (Nguyen et al., 2020).

1.1.1 Polly beak Deformity
One of the most prevalent deformations that occurred after primary rhino-plastic is a polly beak, with the majority of studies citing 40%-64% of cases when secondary rhino-plastic were used (Kim et al., 2021). When the super tip extends outside the tip of the nasal dorsal plane, the appearance of a polly beak is generated (Figure 02 A). This bulbous form and an illusion of tip ptosis because of a break without a super tip (Rossell-Perry, 2020). Numerous etiologies can lead to a polly beak defect, but the two most prevalent reasons are: insufficient resection of the super tip dorsum, especially the septal angles of the anterior one; and disturbing support of the tip leading to postoperative depression. For a polly beak to be prevented, the surgeon must guarantee an appropriate dorsal septum excision at the conclusion of surgery (Rossell-Perry, 2020).

The principal supporting mechanism of the nose, including its intrinsic integrity, must be reestablished throughout rhino-plastic processes, (Liang et al., 2018) (Figure 02 B). With cautious steroid injections into the dorsum this problem can be improved (Williams et al., 2020).
1.1.2 Excessive Resection

An inadvertent over-resection of the cartilage and osseous nasal dorsal may result in a "out-of-shooter" look from a lateral view of the middle third if a dorsal hump that encompasses both the cartilage and osseous nasal dorsal is attempted (Oliver et al., 2019). (Figure 3) The excessive septum resection may, over time, leave the same look due to the classical saddle nose deformation, but the main defect should be differentiated from over-resecting. 12 Excessive resection in addition to loss in dorsal height might lead to simultaneous V-invertebrates and anterior abnormalities in the open roof (Won & Jin, 2020).

These will be individually explored. This problem is particularly prevalent in short nasal individuals who are treated with simultaneous osteotomies: Following dorsal excision to lose upper levels (dorsal projection), the bones must medialize more to generate the right-angle hypotenuse (Vila et al., 2020). Excessive resection can be avoided due to the varied thickness of the skin in the nasal dorsum. The resection plane must be reduced when removing a bump be slightly biphasic, taking care to leave a slight hump at the rhenium where the skin is thinnest (Won & Jin, 2020).

1.1.3 Open Roof Deformity

The ostrich dorsal may have been over-resected, resulting in a roof overlap. The nasal bridge is wide and flat, which is abnormal. A cross section of the upper third would have a trapezoidal appearance rather than a smoothly curved triangle. The dorsal septum can be felt or even seen bulging between the nasal bones on rare occasions. It's because the nasal bones aren't adequately mediated, which is usually due to a bad osteotomy technique. Lateral osteotomies may or may not be complete at their cephalic end (Hohman et al., 2020).

![Figure 3: Excessive Resection (Won & Jin, 2020).](image)

![Figure 4: Open Roof Deformity (Yoo et al., 2019)](image)

It's possible to develop a greenstick fracture, which prevents full mobility. Alternatively, the dorsal decreases could have been caused by a wedge of nasals between the septum and the lateral wall of the cerebral portion. A medial oblique osteotomy may be required merely to reduce an open roof in patients with a small (figure 04 ) but broad nasal base (Yoo et al., 2019). To ensure appropriate medicalization of the noses following dorsal hump reduction and re-drape the soft tissue envelope to palpate with moistened gloved fingers in order to appreciate any "open" residue, the surgeon must sense that the nasal bones in-fracture are induced after lateral osteotomy and re-drape the soft tissue envelope to palpate with moistened gloved fingers (Hohman et al., 2020).

1.1.4 Inverted-V

The V-deformity is a noticeable transition of nasal caudal bones between the cephalic margins of an enclosed middle vault, sometimes known as an inverted pyramid deformity (Yeolekar, Qadri, Head, & Surgery, 2018). The inverted V-deformity has a number of causes, but the underlying anatomical
cause is the same: the upper side cartilage (ULK) is frequently surgically displaced from the nasal bones. The inverted-V effect is created by the bones' caudal border and their shadow (Hohman et al., 2020) and disturb the esthetic line of the brow. (Fig. 5)

This inverted-V issue appears to be disposed of in patients with small nasal bones and lengthy top lateral cartilages. The development of this anatomical defect is due to two major factors. The first reason is because nasal bones have not been mediated after dorsal decrease so that they are lateral and visible. Secondly, the ULCs' connection to the septum dorsal (Robotti, Daniel, Leone, & Surgery, 2021). With a subsequent medial collapse, the ULCs might become destabilized. Moreover, the new dorsal septum produced by the excision of the hump is smaller than the original native dorsum. Even if the ULCs shrink solidly to the septum, a constricted middle vault region will be created (Hyun, Woo, & Baek, 2021).

![Figure 5: Inverted-V (Hyun, Woo, & Baek, 2021)](image)

Preventing these frequent deformities is done after the upper third resection by completing lateral osteotomies and properly closing the open roof. After reducing the dorsal septum, the restoration of the middle vault is essential. The muco perichondrium at the confluence of the ULC and the dorsal septum is supported by this (Robiony et al., 2019). The direct saturation suspension of the ULCs back to the dorsal septum is another reinforcement. After a forceful dorsal resection, it is necessary to restore the natural flare in the dorsal dorsal septum after prophylactic spreader giraffes (Ansari, Asaria, Hilger, Adamson, & Surgery, 2008).

1.1.5 Internal Valve Collapse/Hourglass Deformity

The junction between the ULC and the back septum is known as the internal nasal valve. Any operation that weakens support for the ULC and dorsal septum, such as resecting a back hump, may result in progressive displacement and the squeezing of a central void, as previously mentioned (Rivkin & Medicine, 2021). This is the same anatomical problem that causes an inverted V, although the constricted middle vault is less visible and is frequently referred to as hourglass deformity in those who have a normal kidney dorsal region width (Bergeron & Chen, 2009).

The collapse of the ULC may result in a blockage of the airway's functions at the inner valve area, in addition to creating an hourglass aesthetic deformity due to an esthetic line disorder of the brow tip. Preserving the muco perichondria's ventral envelope will help to avoid this problem once more. (Muslu & Demir, 2019). To ensure that the envelope of the inner nasal valve is preserved, some surgeons choose to separate the ULC from the dorsal septum prior to dorsal reduction. The ULC must be replaced in the back with a spreader of grafts, butterfly grafts, or sutures in order to complete this treatment (Bergeron & Chen, 2009).
1.2 DORSAL AUGMENTATION

The surgeon might pick alloplastic grafts, allogenic graphs or autogenic graphs for an increase in the back. Surgeon choice might be based on increased anatomical region, availability of donors, or anecdotic know-how, however there are many possible problems in each class (Daniel, 2013).

1.2.1 Alloplastic Grafts

There are a variety of alloplastic implants available for plastic face surgery. The most commonly used compounds include Gore-Tex (WL Gore, Newark, DE), Silastic (Dow Corning Corp, Midland, MI), and Medfor (Porex Medical, Newnan, GA). Expanded polytetrafluoroethylene (Gore-Tex) had been used as a face plastic surgery implant for the past 25 years (Liang et al., 2018). Its specific pores allow for tissue input yet inhibit bacterial invasion theoretically. The material is flexible and hence more suitable than structure for smooth soft tissue imperfections (figure 07). It does not absorb, furthermore (Farrior, Farrior, Cook, & Mosby, 2005).

The literature cites infection rates in big numbers from 2.5% to 3.2%. In initial Rhinoplastic (1.2% – 1.4%), the rate of infection differs significantly from the rate of rhinoplastic revision (4.6% – 5.4%). Most infections are delayed (>6 months) and virtually every infected transplant needs removal (Fanous et al., 2017) (Figs. 6 and 7). Silastic is a methyl-crosslinked silicone-oxygen organic polymer. Implant stiffness is affected by the amount of crosslinking. Unlike Gore-Tex, it does not resorb with time. Unlike Gore-Tex, which prevents tissue formation, it is a solid, non-porous material (Farrior et al., 2005). It is hence likely to be mobile and export higher. If it is utilized in the columella, the extrusion rate can be as high as 50% and 10% in the dorsal nasal system. Medpor is a stiff, high-density, porous polyethylene implant. It has an average of 200 microns of pores and is organized in a grid configuration (Downs, 2017). Bone and soft tissue can therefore be integrated, offering the
surrounding tissue stability. The extrusion rate is close to Gore-Tex. In the case of extraction of or infection by an alloplastic implant and removal, rapid restoration with an allogenic or autogenously rib was effective (Hyun et al., 2021).

1.2.2 Allogenic Grafts

Tissues derived from an animal of the same species are allogenic grafts, some of which are known as homograft. Used in rhizogenic grafts, irradiation homogapher costal (IHCC) and Allo Derm are included (Life Cell Corp., Woodlands, TX) (Brandel, D'Souza, Reid, Dobke, & Gosman, 2017). Irradiated ribs have fewer infections than alloplastic, but have greater resorption rates, with a cosmetically significant resorption of 3%-11% of the grafts (Choi, 2020) (figure 08). AlloDerm is an acellular, dermal, skin derivative transplant. It is commonly utilized in thin-skin individuals for contour problems (Daniel, 2013).

1.2.3 Autogenous Grafts

Autogenous material is the optimum choice for immunogenicity and infection. Although they have the apparent drawback to the morbidity of the donor site, warping also plagues the bigger greys. Septal cartilage, atrial cartilage, costumes and calvary bone are the most frequent origins of rhinoplasty (Michelena, 1988). Auricular and severalal cartilage are particularly fast absorbing, and the use of fibrosis and scarring should grow over time. In big nose reconstructions that need considerable dorsal and columnelary support, costa cartilage is typically chosen. (Graphic 8A) The resorption rate of the radiated homograft rib is significantly less, although it has a propensity to be twisted over time. This is avoidable when the graft is concentrated from the rib of the donor. The graft can also be reserved for its warping potential in sterile saline throughout the procedure (Daniel, 2013), (Ors, Ozkose, & Ors, 2015).

1.3 TWISTED DORSUM

One of the most challenging difficulties with esthetic rhinoplasty is the management of the twisted nose. A persistent after-operative deviation is the most prevalent consequence of this kind of rhinoplasty. It generally results from either an inherent nasal deformity, frontal deviation, or the twisting of the middle vault (Suszyński, Serra, Weisser, Amirlak, & surgery, 2018). It remains controversial whether a chronic deformity is regarded as an operating complication or the lack of accurate recognition of the underlying anatomical defect (figure 10). Some conditions may lead to serious twisting and deviations, and repeated "touch-up" could be predicted (Patel et al., 2020).

1.3.1 Intrinsic Deformity of Nasal Bones

If the nasal bones are ignored for underlying intrinsic deformation before to rhinoplasty, the conventional osteotomies will fail universally because the moving bones will tweak. It is essential that the bones are palpated thoroughly and that they are symmetrical and straight. Intrinsic abnormalities
such as previous nasal fracture are discovered and will often require several osteotomies, including medial-lateral osteotomies (Tanna et al., 2014) (figure 11).

1.3.2 Frontal Beak Deviation

The frontal beak is also possible from past traumas to the side. The usual flare media osteotomies will not mobilize the triangle section and prevent a full coughing up. This section requires the entire movement through a direct nasal fracture, generally carried out with a percutaneous osteotome of 2 mm (Santos, Daar, Paydar, & Wirth, 2018). The "rocker distortion" is produced via osteotomies, which stretch too far superior. In the normal diagnostic plane, where the nasal bone develops slowly in both the cerebral and media planes, osteotomies can be avoided (figure 12). In order to generate smaller osseous segments for secondary correction, percutaneous osteotomies are required (D. M. Toriumi & Dixon, 2011).

1.3.3 Middle Vault Twisting

The decrease in the middle vault might potentially cause a twisted malformation after the hump. This happens when you decrease your hump and develop a new dorsal septum. It was formerly intranasal and represented the septum intranasal (Peleman et al., 2020). Following an active hump reduction, an occult, twisted septum may be disguised and a twisted, iatrogenic nose may be created. This is best predicted by a comprehensive check intra-nasal and the possibility of straightening the septum with scratches or concealment. If septum twisting is significant, excision and reimplantation may be required. Asymmetry with the ULC is rare, but can be subtle (Toriumi, 2005).

1.4 TIP NARROWING

Many procedures for surgical alteration of the nose tip are available. The intricate interaction of the soft tissue with the underlying structure of the tip area is thought to have developed. Consequently,
more potential problems occur in the tip than in any other nostril. With appropriate surgical strategy, many of these problems can be prevented (Patel et al., 2020).

### 1.4.1 Alar Retraction

The most typical cause of alarm retraction scars the LLC, resulting in a form irregularity over the whole alarm band (Fig. 9). Excessive aggression by existing LLCs in an attempt to improve the tip lobule is the most common cause. The lateral crucible and the alarm rim are susceptible to long-term, continual constriction and eventual withdrawal in this dead area (figure 13). Rhino plastic incisions used to get access to the nose, particularly the incision in the rim or a poorly positioned side, are other possible causes. To avoid this distinct reputation, it's critical to maintain strong support for the alarm rim (Patel et al., 2020).

### 1.4.2 Intervolve Area Collapse

The internal nasal valve and the participation of the ULCs are the subject of a lot of research on nasal blockage after rhinoplasticism. The region between the external and internal valves, which is lateral to the side equal to the hollow of the supra alarms, is known as intervolve. Because this vital area lacks cartilage, it is vulnerable to tip operations such as cartilage-save dome suture, which might cause it to collapse. The bulk of successful batten grafts are found here (Abdelwahab, Neves, Patel, & Most, 2020).

If attempts are made to improve tip rotation or to minimize the bubble with a cerebrospac trim, it is necessary to keep 7 to 9 mm of side crusts. Common tip-narrowing methods like dome-binding sutures may induce iatrogenic nasal impediments because of a modest lateral crura deformity. To occult recurrence of the lateral crus or a paradoxical concavity might promote an interval zone blockage following the tip sutures (Moon, 2018). The degree of LLC curvature must be evaluated in advance and if the intended tip motion mediates or exacerbates the curvature of the lateral crus (Figure 14). Similarly, during the initial examination, the concave crus should be observed. Vertically oriented lower lateral crusts can also cause the patient to fall in at the interval zone, frequently known as a parenthesis deformity. The intrinsic weakness of these individuals in the lateral wall is reduced with every excision of the side, as little cartilaginous support is available (Bertossi et al., 2019).

**Figure 14: Intervolve Area Collapse (Moon, 2018)**

**Figure 15: Bossae (Hakimi et al., 2020)**

### 1.4.3 Bossae

The bossae are conspicuous deformities of the nasal end caused by anomalies of the lower lateral cartilage. The bossae is second only to polo beak as the most common reason of a review operation in

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**Frontiers in Chemical Sciences (FCS) 2022; 3(2); 32-45**
one significant series of lower third anomalies (Khan et al., 2019). In up to 4% of patients, it is one of the most common problems following primary rhinoplasty. Bossae are divided into two types by some surgeons: first and second. The LLC abnormalities create early bossae, which can be seen right after the operation. Due to fibrosis and scarring over a weakened cartilage structure, late bossae generally develop after a few years of surgery (Hakimi et al., 2020).

Some patients are at greater risk of postoperative bossae formation. Women, young patients, thin-skinned and bidden nasal tips likely to grow bosses when the procedures of other patients are the same (Harb, Brewster, & surgery, 2020). Early bosses are more likely to occur when the dome of the LLC at the conclusion of the first rhino plasticity is asymmetrically aligned (figure 15). The intermodal ligament can be recreated with the suture and a transdermal suture for the equalization in height can be used. If spiking leads to the LLC buckling or a sharp bending at the intermediate crura, early bossae are likely to be noted (Ishii et al., 2017).

Late bosses are harder to prevent, particularly owing to circumstances that are outside the control of the surgeon: thin-skin and weak LLCs patients that are externally exposed. A careful degradation in a supraperichondrial plane to prevent postoperative contracture is the greatest way of preventing patients from late bossae. Every incorrect tip grafting will also lead to the development of an artificial bossae, albeit technical defects are not because of an LLC anomaly (Hakimi et al., 2020).

1.4.4 Pinched Tip

The emergence of a pinched tip deformation is automatic. Although following tip work, it is required to approximate the domes, the look of a pinned tip will become excessive narrowing. In the age of vertical dome division, it was observed more often, but nevertheless can take place despite current rules of the conservation of the tissue with excess dome suture (figure 16). Due to the soft tissue contracture, the squeezed tip may also create an inadequate tip frame (Gode, Ozturk, Kismali, Berber, & Turhal, 2019). For example, a vertical dome split breaks the LLC, which leaves the tip to mend itself and hence to the expense of contractile scar development (Kontis, 2017).

The tripod’s cartilaginous structure must be restored at the end of the operation to guarantee that minimal, if any, long-term treatment is required to prevent pinched tip appearance. Tips are the best candidates for restorative procedures, and cartilage removal is not required. If it becomes necessary to resect parts of the LLC, however, tip support methods such as columns, intermodal sutures, and tip-grafts may be used (Manahan et al., 2021).

1.4.5 Excessive Cephalic Rotation

Overrotation is also known as excessive cephalic turning. According to the tripod hypothesis of the support of the nasal tip, an operational technique that lengths or shortens the medial crura would result in overrotation. (Figure 17) Cephalic overrotation at the time of initial rhinoplasty is not generally evident to the surgeon. Any side crura which needs shortening might arrive at that time to give the alarms of the triangle with an adequate length (Most, 2006).

The tip of the lateral crura vector will eventually overrotate due to scarring and rigidity. Excessive LLC cephalic trim and a vertical dome division are the most common problems, both of which can be avoided by lateral crural strut grafts. It's possible to prevent this. By rotating the LLC cephalically, the LLC's septal angle is reduced, resulting in an over-rotation effect (Esteves, Gonçalves Ferreira, Almeida, Abrunhosa, & Sousa, 2017). Excessive caudal septum excision can cause the medium crura to rotate cephalically inadvertently. When doing one of these maneuvers, make sure to re-establish the
medial crura's link with the residual septum: The last must govern the new connection (Palma et al., 2013).

1.4.6 Tip Ptosis

When tip support is lost, tip ptosis (under-rotation) occurs. Figure 18 A transfixion incision, medial crura shortening, LLC severance from the ULC at the scroll area, and seven or columnary support loss are all procedures that cause the tripod tip to descend. Any critical tip support systems that must be disrupted in order to perform a rhinoplasty must be restored to an unnatural state and maintained at the conclusion of the procedure (Suszynski et al., 2018). Depending on what kind of support mechanism is needed for rebuilding, there are numerous different greys, stitches, or sutures to choose from. The surgeon should not be afraid to use grafts to replace the structural support cartilage that has to be removed for the primary rhinoplasty goal. Although it may appear to contradict the original excision, the in situ cartilage is frequently distorted, and a surgeon can better anatomically regulate the location and size of the substitute graft (Palma et al., 2013).

1.4.7 Inadequate Definition

The structure of the tip is the main part of the aforesaid problems. Structural manipulation is a workshop of tip rhinoplasty, although there are occasionally patients with excessive soft tissue envelope as the major concern. Despite excellent operating movements aimed at reducing the tip, the thick skin is structured enough to leave a continuously bulbous tip because the skin does not flex to follow the planned structural adjustments (Bocciere, Marianetti, & Pascali, 2018). The problem is typically predicted in the operation room. The main part of the recognized rhinoplasty instruction consists in changing the structure beneath this soft tissue envelope's draped appearance (Tuncel, Aydogdu, & surgery, 2019). Excess soft tissues which surround the structure negate the goal of the structural procedures, and this is one area where the surgeon occasionally has to respect the tissue in order to get the desired result. In the lobules and lateral supertip areas this can be carried out
methodically. Note that the distal part of the column flap may demand accuracy as the length after tip retrodisplacement becomes excessive (Bektas, Cinpolat, & Rizvanovic, 2020).

2. Conclusion
Rhinoplasty is one of the most commonly performed aesthetic surgical procedures in plastic surgery. Over the past 20 years, one of the most gratifying operations performed by facial plastic surgeons remains rhinoplasty. Both surgeries and patients may feel like they are running "home" when everything is running as scheduled, but mutual sadness may also occur when the outcome is different. The anatomical study identifies and measures the important anthropometric angles of the nasal bones. These help surgeons to better understand the prereduction nasal profile as well as where the pathology lies when creating the ideal nasal dorsum.

3. References


