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ORIGINAL ARTICLE

# The Difference between the Effect of Septal and Conchal Columellar Struton Nasal Aesthetics

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## ABSTRACT

**Background:** By contrasting the impacts of septal and conchalcollumellar strut on nasal aesthetics, this study sought to assess the capacity of conchalcollumellar strut to sustain nasal support. **Methods:** This study included 12 patients underwent a septal columellar strut (group A) compared to 12 patients underwent a conchalcolumellar strut (group B). **Results:** Among study participants, no statistically significant difference (p-value > 0.05) between studied groups (Ear cartilage and septal cartilage groups) was found as regard SHONS score before the intervention. Similarly, after the procedures no statistical significant difference (p-value > 0.05) between studied groups (Ear cartilage and septal cartilage groups) as regard SCHNOS score. **Conclusion:** The tip projection and rotation in patients with septal columellar strut and those with conchalcolumellar strut both exhibit the same changes with no significant differences between both groups when followed-up for 6 months postoperative. Also, no significant difference regarding patients satisfaction between the two techniques.

**Keywords:** Septal;Conchal;Columellarsturt; Nasal aesthetics.

## INTRODUCTION

The nose is a useful organ that helps warm, filter, and moisturize the air we breathe in. It aids in the development of voice and is connected to the nasoalveolar reflex. Furthermore, its dimensions -length, width, pyramidal form, and central position within the face- that resemble a clip joining the two facial regions, enhance an individual's aesthetic appeal [1].

"Functional rhinoplasty" is used with "aesthetic rhinoplasty" in nasal surgery to enhance nasal function and modify appearance [2].

In rhinoplasty, the nasal skeleton is supported by bone or cartilage grafts. For these cartilage and bone grafts, a variety of graft sources and

types are available, and they are chosen based on the patient's needs. Septal extensions, cap grafts, columellar struts, and spreaders are a few often used grafts [3].

Various cartilage grafts have been shown as successful means of modifying the nasal tip's rotation and projection. Septal cartilage is commonly utilized as an autograft in rhinoplasty due to its convenient harvest, abundant supply, and reliable and sturdy composition [4].

When a nose lacks septal cartilage, the conchal cartilage is frequently the first option for an alternative graft source. A comparatively large volume of tissue is transplanted, there is less chance of problems, and the tissue can withstand the body's absorption [5].

The conchal cartilage CSR graft is obtained by making a curved incision parallel to the antihelix, somewhat below it, in order to conceal the scar within the curve of the antihelix and its lower crus [6].

Drawbacks include its propensity to undergo calcification as it ages and its undesirable three-dimensional morphology. Although the cymba conchae can be used as a graft that is often flat and straight; however, the remaining portion of the concha is more distorted and is not appropriate for straight applications. By performing precise incisions on the transplant and securing it with sutures made of PDS, the entire concha can be straightened. Harvesting methods involve making an incision in the front part of the conchal base along the postauricular sulcus and another incision along the back part of the ear along the retroauricular sulcus [7].

This research's objective is to assess ConchalCollumellar'sstrut to maintain the nasal support and to compare between the effects of septal and conchalcolumellar strut on nasal aesthetics.

## METHODS

This randomized controlled clinical trial included 24 patients; Two groups of patients were created. Twelve patients in Group A underwent a septal columellar strut, while twelve patients in Group B underwent a conchalcolumellarsturt. This study was conducted at Plastic and Reconstructive department, Zagazig University Hospitals, Zagazig, Egypt and Otolaryngology Department, Alexandria University Hospitals, Alexandria, Egypt. All procedures had been explained for each patient. Each patient provided an informed written consent.IRB (number 10776-9-5-2023) approval was attained from Faculty of Medicine, Zagaziguniversity.

Allincluded participants in the study were required to provide their past, including their personal history and any history of nose trauma, medical and surgical history and SCHNOS score.

A routine preoperative clinical evaluation was done The examination window recorded observations of dynamic nasal examination, changes in the internal valve, and findings based on the classification of the septum and lateral nasal wall.

Routine preoperative laboratory investigations including CBC, LFT, KFT, Bleeding profile, Viral markers and ECG for above 40 years old were ordered for each patient.

**Operative details**

Anaesthetic: Both local and general anesthetic were used throughout the treatment ;anesthetic (lidocaine) with the addition of 1/100,000 adrenaline injection, which was

mixed with lidocaine at a ratio of 1:5. Body Position: Lying on the back with a tube inserted through the mouth and directed towards the tailbone. (The process of infiltration involves injecting substances into specific anatomical planes that facilitate simpler dissection and minimize bleeding). These planes include:

1- The extra layer of periosteum situated at the same height as the intended lateral osteotomy.

The nasal bones and the top lateral cartilages are covered by the superficial musculoapo-neurotic system (SMAS), which has the supra perichondrial and supra periosteal planes on its deep surface.

2- The planes located beneath the perichondrium and periosteum, namely at the level of the nasal mucosa.

The initial step involved infiltrating the septum via submucoperidrial means. Next, the needle was moved in the dissection plane along the dorsum, closely trailing the periosteum and perichondrium. A small amount of tumescent solution was injectedas you pull the needle back to the place of insertion. The needle was then moved in a more medial or lateral direction, repeating the procedure. After that, the entire process was repeated on the other side. Next, we administer an injection into the nose tip's skin, namely between the domes to the anterior columella and the track of the marginal and infracartilaginous incisions, as well as the transcolumellar incision and dorsum of the nose. The tumescent solution is then positioned along the anticipated path of the lateral osteotomies .

Then the process of disinfecting the outside part of the nose and the nasal vestibules, as well as removing the vibrissae. Incision: An inverted V-shaped transcolumellar incision is performedfor an open rhinoplasty technique.

***Dissection:*** Sub-SMAS.

i) The cartilaginous dorsum and upper lateral cartilages (ULCs) were exposed during the dissection, which was carried out at the supraperichondrial/sub musculoaponeurotic plane. The dissection then proceeded in the subperiosteal plane in the direction of the radix at the level of the bony pyramid.

ii) The anterior septal angle was visible and the middle crurawas separated, exposing the cartilaginous septum through the incision of the interdomal suspensory ligament. To ensure that any dorsal anomalies hidden, the mucoperichondrial covering of the dorsum was carefully incised and sutured again following dorsal restoration.

***Graft Harvesting:***In septal cartilage cases: endonasal approach through hemitransfixion incision to harvest low strip ,The remaining dorsal cartilage strut should be located at least from the septum 1 cm of vertical height for sufficient support.

***In conchal cartilage cases:***Incision on the rear aspect of the ear to collect the conchal cartilage while preserving the curvature of the antihelix to avoid any deformation of the ear.

The concha will be folded into a double layered strut to strengthen it and to make it straighter.

***Columellar strut:***After dissection between the 2 medial crura, a pocket wasdone inferiorly until extending to the anterior nasal spine and premaxilla. Then the columellar strut graft measuring approximately 20mm by 3mm wasplaced into the pocket created and stabilized by 5-0 PDS sutures to the medial crura.

***Cephalic trimming*** of the lateral crura leaving 6-7mm to maintain support of the external nasal valve.

***Domalcreation :*** Using 5-0 polypropylene suture.

***Transdomalsutures :***The procedure involved utilizing the knots on the inside side of the domes and use a 5-0 polypropylene suture to stitch across the domes in the manner of a horizontal mattress. The ligament that suspends the interdomal, which separates the domes, was severed and then secured with interdomal sutures.

***Osteotomy:***All of our patients have received bilateral internal low-to-high lateral osteotomy at the inferior orbital rim and nasofacial junction, using an intranasal 3 mm guarded osteotome.

***Closure:***A straightforward interrupted suture made of 6-0 polypropylene was used to close the transcolumellar incision. After that, the marginal infractilaginous wounds were madetogether with 5-0 vicryl sutures.

Next, a gentle touch was delivered to the bridge of the nose, followed by the placement of a flexible metal splint over the same area.

Ultimately, a gauze drip pad was placed beneath the nose, to be regularly replaced as it became saturated with blood.

***Postoperative care:***The patient was administered broad-spectrum antibiotics as medicine. Anti-edematous medications, such as alpha chemotrypsin, were used to reduce swelling. A nasal spray used to alleviate congestion in the nasal passages. Patients were directed to maintain a 45° angle of elevation of the head in bed immediately following the surgery.

***Follow up:***Patients were discharged either on the same day as their surgery or, at most, they stayed for a maximum of 24 hours. The initial follow-up appointment took place 7 days following the operation to remove the stitches and splint. Subsequent appointments were scheduled at 3 months and 6 months post-surgery.

***Postoperative evaluation and follow up:***Evaluation of Tip projection by Goode's proportion Using before and after images and evaluating the tip rotation through the nasolabial angle, the results of the surgery were assessed 6 months later. After a period of 6 months following the surgery, a comparison was made utilizing images taken before and after the procedure. Evaluation of patient satisfaction according to SCHNOS score 6 months after the surgery

***Statistical analysis***

Version 24 of the Statistical Program for Social Science (SPSS) was used to analyze the data. The qualitative data were presented in terms of frequency and percentage. The quantitative data were represented as the mean value plus or minus the standard deviation (SD), along with the range. The mean, also known as the average, is the middle value of a set of numbers. It is calculatedby dividing the total number of items by the sum of all the values. A statistical tool used to quantify the degree of variation or dispersion within a set of values is the standard deviation (SD). When the standard deviation (SD) is low, it indicates that the values in the set are concentrated around the mean; when the SD is large, it indicates that the values are more widely distributed throughout a larger range.

The further tests were conducted: Paired sample t test (T): When making comparisons between Goode's ration and nasolabial angle

before and after surgery. Independent sample t test (T): when comparing between Goode's ration and nasolabial angle between studied groups. When comparing the SCHNOS score before and after surgery, the chi-square test was employed. Probability (P-value): A statistically significant P-value was defined as one that was less than 0.05. An extremely significant P-value was defined as one that was less than 0.001. A statistically insignificant P-value was defined as one that was higher than 0.05.

## RESULTS

No statistically significant difference was seen (p-value= 0.148)between the groups that were tested (Ear cartilage and septal cartilage groups) as regard Good ratio (before). It was 0.62 ± 0.04 with range of 0.54 – 0.73 in ear cartilage group versus 0.65 ± 0.06 with range of 0.55 – 0.77 in Septal cartilage group. Also, between the groups, there was no statistically significant difference (p-value = 0.519) under study (Ear cartilage and septal cartilage groups) as regard Nasolabial angle (before). It was 89.1 ± 11.7 with range of 73 – 112 in ear cartilage group versus 85.7 ± 13.6 with range of 60 – 107 in Septal cartilage group.Between the groups, there was no statistically significant difference (p-value > 0.05) that were tested (Ear cartilage and septal cartilage groups) as regard SCHNOS score (before).Between the groups under study, there was no statistically significant difference (p-value = 0.216)(Ear cartilage and septal cartilage groups) as regard Good ratio (after). It was 0.57 ± 0.04 with range of 0.51 – 0.6 in ear cartilage group versus 0.59 ± 0.02 with range of 0.55 – 0.66 in Septal cartilage group. Also, Between the groups under study, there was no statistically significant difference (p-value = 0.828) (Ear cartilage and septal cartilage groups) as regard Nasolabial angle (after). It was 99.5 ± 10.2 with range of 85 – 123 in ear cartilage group versus 98.7 ± 5.7 with range of 90 – 105 in Septal cartilage group. Between the groups, there was no statistically significant difference (p-value > 0.05) being analyzed (Ear cartilage and septal cartilage groups) as regard SCHNOS score (after).

**Table (1):**Goode's Ratio & nasolabial angel Measurements before and after 6 months for group A (Septal Cartilage group)

| | |
|---|---|
| **N** | Nasion |
| **AC** | Alar Crease |
| **T** | Tip |
| **N-AC** | Line between nasion& Alar crease |
| **AC-T** | Line between Alar crease & tip |
| **Goode's Ratio** | Ratio between N-AC : AC-T |
| **Measurement method** | AutoCAD 2021 |

**Table (2):** Comparison of Goode's ratio (before) between studied groups

| (before) | | Ear cartilage (N = 12) | Septal Cartilage (N = 12) | Stat. test | P-value |
|---|---|---|---|---|---|
| **Good ratio** | *Mean ±SD* | 0.62 ± 0.04 | 0.65 ± 0.06 | T = 1.5 | 0.148 NS |
| | *Range* | 0.54 – 0.73 | 0.55 – 0.77 | | |
| **Nasolabial angle** | *Mean ±SD* | 89.1 ± 11.7 | 85.7 ± 13.6 | T = 0.65 | 0.519 NS |
| | *Range* | *73 – 112* | *60 – 107* | | |

**T: Independent sample T test.** **NS: p-value > 0.05 considered non-significant.**

**Table (3):** Comparison of SCHNOS score (before) between studied groups

| (before) | | Ear cartilage (N = 12) | | Septal Cartilage (N = 12) | | $X^2$ | P-value |
|---|---|---|---|---|---|---|---|
| **Q6** | **Moderate problem** | 1 | 8.3% | 0 | 0.0% | 2.52 | 0.470 NS |
| | **Severe problem** | 3 | 25.0% | 1 | 8.3% | | |
| | **very severe problem** | 1 | 8.3% | 1 | 8.3% | | |
| | **Extreme Problem** | 7 | 58.3% | 10 | 83.3% | | |
| **Q7** | **No Problem** | 1 | 8.3% | 2 | 16.7% | 6.9 | 0.139 NS |
| | **Moderate problem** | 2 | 16.7% | 0 | 0.0% | | |
| | **Severe problem** | 0 | 0.0% | 1 | 8.3% | | |
| | **very severe problem** | 0 | 0.0% | 3 | 25.0% | | |
| | **Extreme Problem** | 9 | 75.0% | 6 | 50.0% | | |
| **Q8** | **Mild Problem** | 1 | 8.3% | 0 | 0.0% | 6.2 | 0.183 NS |
| | **Moderate problem** | 1 | 8.3% | 0 | 0.0% | | |
| | **Severe problem** | 0 | 0.0% | 2 | 16.7% | | |
| | **very severe problem** | 2 | 16.7% | 0 | 0.0% | | |
| | **Extreme Problem** | 8 | 66.7% | 10 | 83.3% | | |
| **Q9** | **Severe problem** | 1 | 8.3% | 2 | 16.7% | 4.8 | 0.088 NS |
| | **very severe problem** | 4 | 33.3% | 0 | 0.0% | | |
| | **Extreme Problem** | 7 | 58.3% | 10 | 83.3% | | |
| **Q10** | **No Problem** | 0 | 0.0% | 2 | 16.7% | 4.6 | 0.323 NS |
| | **Moderate problem** | 2 | 16.7% | 0 | 0.0% | | |
| | **Severe problem** | 1 | 8.3% | 2 | 16.7% | | |
| | **very severe problem** | 2 | 16.7% | 1 | 8.3% | | |
| | **Extreme Problem** | 7 | 58.3% | 7 | 58.3% | | |

**$X^2$: Chi-square test.** **NS: p-value > 0.05 considered non-significant.**

**Table (4):** Comparison of Goode's ratio (after) between studied groups

| (After) | | Ear cartilage (N = 12) | Septal Cartilage (N = 12) | Stat. test | P-value |
|---|---|---|---|---|---|
| **Good ratio** | *Mean ±SD* | 0.57 ± 0.04 | 0.59 ± 0.02 | T = 1.27 | 0.216 NS |
| | *Range* | 0.51 – 0.6 | 0.55 – 0.66 | | |
| **Nasolabial angle** | *Mean ±SD* | 99.5 ± 10.2 | 98.7 ± 5.7 | T = 0.22 | 0.828 NS |
| | *Range* | 85 – 123 | 90 – 105 | | |

**T: Independent sample T test.** **NS: p-value > 0.05 considered non-significant.**

**Table (5):**Comparison of SCHNOS score (After) between studied groups

| (After) | | Ear cartilage (N = 12) | | Septal Cartilage (N = 12) | | $X^2$ | P-value |
|---|---|---|---|---|---|---|---|
| **Q1** | **No Problem** | 9 | 75.0% | 8 | 66.7% | **3.05** | **0.548 NS** |
| | **Mild Problem** | 2 | 16.7% | 2 | 16.7% | | |
| | **Moderate problem** | 0 | 0.0% | 1 | 8.3% | | |
| | **Severe problem** | 0 | 0.0% | 1 | 8.3% | | |
| | **very severe problem** | 1 | 8.3% | 0 | 0.0% | | |
| **Q2** | **No Problem** | 8 | 66.7% | 10 | 83.3% | **3.55** | **0.314 NS** |
| | **Mild Problem** | 1 | 8.3% | 2 | 16.7% | | |
| | **Moderate problem** | 2 | 16.7% | 0 | 0.0% | | |
| | **very severe problem** | 1 | 8.3% | 0 | 0.0% | | |
| **Q3** | **No Problem** | 9 | 75.0% | 9 | 75.0% | **0.0** | **1.0 NS** |
| | **Mild Problem** | 2 | 16.7% | 2 | 16.7% | | |
| | **Moderate problem** | 1 | 8.3% | 1 | 8.3% | | |
| **Q4** | **No Problem** | 10 | 83.3% | 9 | 75.0% | **1.05** | **0.591 NS** |
| | **Moderate problem** | 0 | 0.0% | 1 | 8.3% | | |
| | **Severe problem** | 2 | 16.7% | 2 | 16.7% | | |
| **Q5** | **No Problem** | 9 | 75.0% | 10 | 83.3% | **1.05** | **0.591 NS** |
| | **Mild Problem** | 2 | 16.7% | 2 | 16.7% | | |
| | **Moderate problem** | 1 | 8.3% | 0 | 0.0% | | |
| **Q6** | **No Problem** | 10 | 83.3% | 9 | 75.0% | **3.05** | **0.384 NS** |
| | **Mild Problem** | 1 | 8.3% | 0 | 0.0% | | |

| (After) | | Ear cartilage (N = 12) | | Septal Cartilage (N = 12) | | $X^2$ | P-value |
|---|---|---|---|---|---|---|---|
| | Moderate problem | 1 | 8.3% | 1 | 8.3% | | |
| | Severe problem | 0 | 0.0% | 2 | 16.7% | | |
| Q7 | No Problem | 8 | 66.7% | 11 | 91.7% | 2.47 | 0.290 NS |
| | Moderate problem | 3 | 25.0% | 1 | 8.3% | | |
| | Severe problem | 1 | 8.3% | 0 | 0.0% | | |
| Q8 | No Problem | 8 | 66.7% | 11 | 91.7% | 3.47 | 0.324 NS |
| | Mild Problem | 1 | 8.3% | 1 | 8.3% | | |
| | Moderate problem | 2 | 16.7% | 0 | 0.0% | | |
| | very severe problem | 1 | 8.3% | 0 | 0.0% | | |
| Q9 | No Problem | 8 | 66.7% | 12 | 100% | 4.8 | 0.091 NS |
| | Mild Problem | 3 | 25.0% | 0 | 0% | | |
| | Moderate problem | 1 | 8.3% | 0 | 0% | | |
| Q10 | No Problem | 8 | 66.7% | 8 | 66.7% | 4.8 | 0.187 NS |
| | Mild Problem | 0 | 0.0% | 2 | 16.7% | | |
| | Moderate problem | 4 | 33.3% | 1 | 8.3% | | |
| | Severe problem | 0 | 0.0% | 1 | 8.3% | | |

**$X^2$: Chi-square test. NS: p-value > 0.05 considered non-significant.**

## DISCUSSION

The nose serves as the primary passage for air and houses the organ responsible for both smelling and breathing. The nose performs three physiological tasks during respiration: humidification, filtration, and heat transmission of inspired air [8].

Despite its tiny size, the major focus point of the face requires a deep understanding of the intricate relationship between form and function [9].

Rhinoplasty utilizes a variety of surgical methods tailored to fulfill the unique requirements of every nostril. Various surgical procedures can be employed to address different sections of the nose, each with potentially distinct functional outcomes [10].Rhinoplasty offers a diverse range Various grafting techniques and materials that can be applied to produce changes that are both aesthetically pleasing and practical. To get the greatest results possible, choosing the most appropriate grafting procedure is essential patient outcome [11].

To modify the middle part along the lower margin of the cartilaginous septum, a columellar strut graft (CSG) can be made and placed between the medial crura [12].

The primary objective of this approach is to strengthen the tip's support and the projection of the nose. However, it is commonly employed when the main objective enhancing nasal rotation is the goal of rhinoplasty. This is because strengthening the lower middle part of the nasal tripod is believed to result in an upward rotation of the tip, especially in situations where the nasal tip droops due to weak medial crura or longer lateral crura [13].

The Submucosal Extended Graft (SEG), initially presented by connecting a graft to the nasal septum's lower edge in 1997, Byrd et al. extended the septum. It sits in between the medial crura, which control the nose's projection, rotation, and length [14].

Septal extension grafts and columellar strut grafts (CSG) (SEG) have been utilized in rhinoplasty for a significant duration, with their usage mostly dependent on the surgeon's preference. There is a lack of sufficient data about the acceptability of either tip support, patient-perceived cosmesis, or graft for airway function [15].

The Standardized Cosmesis and Health Nasal Outcomes Survey (SCHNOS) was created in 2017 as a patient-reported outcome measure (PROM) [16].

The Goode ratio is utilized for tip projection. The term refers to the ratio of nasal height to the length of the nose. Nasal length is measured from the tip-defining point to the root of the nose, or nasion, whereas nasal height is measured from the alar-facial groove to that same point [17].

This study sought to assess the efficacy of a conchalcollumellar strut in maintaining nasal support. Specifically, it wanted to compare the effects of a septal collumellar strut and a conchalcollumellar strut on nasal aesthetics.

This study included 12 patients underwent a septal columellar strut (group A) compared to 12 patients underwent a conchalcolumellar strut (group B).

Prior to the intervention, the individuals in this study did not exhibit any statistically significant variation between the groups under study (p-value = 0.148) (Ear cartilage and septal cartilage groups) as regard Goode ratio. It was 0.62 ± 0.04 with range of 0.54 – 0.73 in ear cartilage group versus 0.65 ± 0.06 with range of 0.55 – 0.77 in Septal cartilage group. Also, post-surgery no statistically significant difference was seen (p-value = 0.216) as regard Goode ratio (after). It was 0.57 ± 0.04 with range of 0.51 – 0.6 in ear cartilage group versus 0.59 ± 0.02 with range of 0.55 – 0.66 in septal cartilage group.

As far as we are aware, this was the first research to compare patients underwent a septal columellar strut with those underwent a conchalcolumellar strut.

In concordance with this study Abdel Azeem et al. [18] study found that tip projection in patients underwent columellar strut was 29.35±3.34mm preoperatively, 29.14±2.7mm on operating table, 28.73±2.57mm early postoperatively (T2 at 3 months), and 29.39±3.2mm late postoperatively (T3 at 6 months). While for Septal extension group, tip projection was 29.92±4.55mm at T0, 29.64±3.22mm at T1, 29.39±3.2mm at T2, and 28.99±3.15mm at T3.

Sawh-Martinez et al. [19] had similar results in their study. They revealed that Tip projection was quantified for the group with a columellar strut 32.3±3.1mm and 35.7±7.3mm postoperatively. They reached a decrease in value between early (6 weeks) and late postoperative (12 months) by about 1.7 percent while in our study the decrease was 2.1 percent. Also, The measurement of tip projection in the septal extension graft was obtained 31.2±4.1mm preoperatively,

33.8±6.4mm postoperatively. They reached a decrease in value between early and late postoperative by about 2.2 percent. Comparing that decrease between both groups was not significant, which was the same result in our study.

Bellamy and Rohrich[20] A total of 40 patients underwent treatment got a septal extension graft, while 37 patients underwent columellar strut therapy. The columellar strut group had a projection loss of 4.7% at 1 year, while the septal extension graft group had a projection loss of 0.2% ($P < 0.0001$) [20]. The disparity in results between these two studies may be ascribed to the extended duration of follow-up in the former trial, which spanned one year, as opposed to the six-month follow-up period in the latter study.

Bilgili and ÇerçiÖzkan[21] revealed a significant statistical difference between the measurements of tip projection preoperative and 1-year follow-up post-operative in patients with septal strut graft.

Acil et al. [22] study findings showed that on comparing Boththe columellar strut graft and septal extension graft groups saw some initial loss of projection during the healing period. However, This reduction of projection in the septal extension graft group was seen ceased during the sixth month following the surgery. Furthermore, the preservation when it came to nasal projection, the SEG group outperformed the CSG group over an extended period of time. Furthermore, both groups experienced a certain level of rotation loss until one month following the surgery. However, after this time period, the SEG group did not experience any further rotation loss, suggesting that SEG provides stronger long-term support for rotation compared to CSG. The disparity observed in this study is believed to be associated with the fact the cleft lip nose rhinoplasty is a particular kind of rhinoplasty that needs more robust tip support and stability when using SEG. This is because individuals with cleft lip and nose have a predisposition to congenital anatomical defects and scarring.

The study found no statistically significant difference (p-value = 0.519) between the groups being evaluated (Ear cartilage and septal cartilage groups) as regard Nasolabial angle before the intervention. It was 89.1 ± 11.7 with range of 73 – 112 in ear cartilage group versus 85.7 ± 13.6 with range of 60 – 107 in septal cartilage group. Also, after surgery Regarding the Nasolabial angle, there was no statistically significant difference (p-value = 0.828) between the groups under study. It was 99.5 ± 10.2 with range of 85 – 123 in ear cartilage group versus 98.7 ± 5.7 with range of 90 – 105 in septal cartilage group.

In agreement with the present study Abdel Azeem et al. [18]Preoperatively, when comparing the use of a columellar strut and a septal extension graft (T0) and immediately postoperatively (T1), the nasolabial angle was utilized to evaluate tip rotation on operating table), early postoperatively (T2 at 3 months), and late postoperatively (T3 at 6 months), tip rotation was assessed. The group of individuals with a columellar strut had an average nasolabial angle of 94.5±5.24° at T0, 99.29±5.08° at T1, 98.85±5.18° at T2 and 98.54±5.37° at T3. While in Septal extension graft group, the mean nasolabial angle was 93.80±6.34° at T0, 97.9±4.55° at T1, 97.45±4.374° at T2 and 97.24±4.29 degrees at T3. A non-significant p-value was noted comparing tip rotation changes between both groups.

Sawh-Martinez et al. [19] study comparedthe septal extension graft and columellar strut as

surgical procedures techniques used to enhance the structure and support of the nose, as regards the tip rotation, the average nasolabial angle for the columellar strut group was 107.3±17.3 degrees preoperatively and 112.5±11.0 degrees postoperatively. The average nasolabial angle in the septal extension graft group was 115.1±13.1 degrees preoperatively and 115.8±15.0 degrees after the surgery. There was a negligible disparity between the two groups after the surgery.

Against this study Bucher et al., [23] reported that on comparing patients underwent columellar strut with those underwent columellar strut there was significant difference in terms of nasolabila angle.

In contrast to this study Bellamy and Rohrich[20] ;A study found a notable distinction in rotation loss between the septal extension graft group and the columellar strut group. The group who had a septal extension graft saw an average rotational loss of 4.9 degrees, whereas the group that received a columellar strut had an average rotational loss of 1.3 degrees ($P < 0.0001$). The difference from this study might be attributed to the longer follow up period (1 year) compared to 6 month follow up in this study.

Brandstetter et al., [24] conducted a study to assess and analyze the lasting impact of SEG and to evaluate various methods of graft fixation. The nasolabial angle was assessed at two time points: 2 weeks after the operation and during the final appointment, which occurred approximately 11 months after the surgery (with a range between five and forty-four months). The nasolabial angle decreased from 97.53 to 95.30 throughout that time, which is consistent with the study's findings.

The results of Brandstetter et al., [24]A study demonstrated a temporal alteration in the nasolabial angle, but nasal length remained same. Therefore, it is most likely that the change in the nasolabial angle is primarily caused by the reduction in edema, rather than the sagging of the tip. Thus, this investigation affirms the dependability of the SEG in relation to the tip position.

Among this study participants , between the two groups, there was no statistically significant difference (p-value > 0.05) that were tested in (Ear cartilage and septal cartilage groups) as regard SHONS score before the intervention. Similarly, after the procedures no statistical Between the tested groups, there was no statistically significant difference (p-value > 0.05) (Ear cartilage and septal cartilage groups) in terms of SCHNOS score.

Lathif et al., [15] agreed with the results of our study partially. They demonstrated that both surgeons and outcome measures reported by patients for function were similar between septal extension graft and columellar strut graft subpopulations; nevertheless, cosmoses were worse in CSG patients than in SEG patients. Additionally, they claimed that the CSG and SEG subpopulations' changes in airway analysis results were comparable which is concordant with our study regarding breathing issues.

Castro-Govea et al., [25]implemented an extended columellar graft that is angulated to support and project nasal tip grafts, enhancing the ability to manage and anticipate the position and impact of these grafts. The outcomes achieved were deemed satisfactory by patients in terms of the aesthetic aspect of the nose.

Akkus et al.,[1] A study has shown that, unlike the columellar strut, the SEG is more dependable in preserving the nasal tip's location throughout time. Patients with a midvault or weak lower lateral cartilages

should be especially aware of this.

**Conclusions:**

The tip projection and rotation differ between patients with a septal columellar strut and those with a conchalcolumellar strut both exhibit the same changes with no significant differences between both groups when followed-up for 6 months postoperative. Also, no significant difference regarding patients satisfaction between the two techniques.

More studies are warranted including larger sample size and longer period of follow up to further confirm the results obtained.

***Competing interests***

The authors declare that they have no competing interest.

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