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The Inverted T-Shaped Columellar Strut Graft: A New Technique for Tip Stabilization in Short or Shortened Caudal Septum

Aret Çerçi Özkan[1], Ahmet Mert Bilgili[2], Erol Kozanoğlu[3], Mehmet Melih Çiçek[4]

[1]Private Practice, Plastic Reconstructive and Aesthetic Surgery, Istanbul, Türkiye
[2]Department of Odiology, Cyprus International University Health Sciences School, Nicosia, Cyprus
[3]Department of Plastic Reconstructive and Aesthetic Surgery, Istanbul University Faculty of Medicine, Istanbul, Türkiye
[4]Department of Otolaryngology, Bahçelievler Memorial Hospital, Istanbul, Türkiye

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ABSTRACT

Background: Columellar strut grafts (CSG) are effective in providing the unity of the nasal tip with a weak,short, medial, or middle crura. However, its effect on tip stabilization is minimal. The CSG may be fixated to an autoextension at the caudal septum to augment the stabilization capacity of the strut. Septal auto-extension may not be applicable in cases with a short/shortened caudal septum, which can be solved by designing an extension in the middle of the CSG, which can be called an "inverted T-shaped CSG."

Methods: Patients who underwent tip stabilization with an inverted T-shaped CSG between January 2019 and November 2021 were selected for this research. All patients underwent open structural rhinoplasty. The inverted T-shaped CSG was prepared similarly to the standard strut. However, spike-like extension was preserved in the middle of the strut, branching out at a right angle. The T-shaped CSG was settled between the medial crura. Then, the extension was fixated to the caudal septum. Medial crura were sutured over the inverted T-shaped CSG, and stability was established. Preoperative, peroperative, and postoperative images were analyzed.

Results: This technique was used in 64 patients. The average age was 37 years (26-48 years). Thirty-five patients were female, and 29 were male. Forty-one patients had undergone primary rhinoplasty, and 23 had undergone secondary rhinoplasty. The mean patient follow-up was 14 months (8-22 months). Statistical analysis was used to compare tip projection ratios and nasolabial angle calculations. A statistically meaningful difference was observed between preoperative, immediate postoperative, and 1-year postoperative measurements of the projection ratio and nasolabial angle increase in all cases, and this projection was observed to be maintained at 1 year. The inverted T-shaped CSG provided satisfactory tip stabilization in all patients.

Conclusion: The inverted T-shaped CSG is a good alternative for tip stabilization with graft economy, without columellar retraction, overortation, stiffness, in short/shortened septae.

Keywords: Columellar strut, inverted T-shape, tip stabilization, rhinoplasty, tip rotation

Introduction

The floating columellar strut graft is an effective option for creating unity in the tip of the nose and maintaining its position.[1] These effects are needed in patients with weak medial/middle crura, asymmetric lower lateral cartilages, and short medial crura.[1] Although this graft may also be preferred to increase both tip projection and rotation, these last 2 effects have been found to be minimal in the long term.[2]

The columellar strut graft may be fixed to the septum through a tooth-like autoextension at the middle third of the caudal septal cartilage, and this maneuver may overcome the disadvantage of the floating strut by augmenting its stabilization capacity.[3] Thus, the long-term durability of the nasal tip's projection and rotation may be maintained. However, there is a disadvantage with this technique: The septal autoextension may not be feasible in various conditions such as a short innate caudal septum or a caudal septum that was shortened

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by previous surgeries.[3] Although some procedures have been described for such patients, there is no agreement on the final solution.[4] This drawback may be overcome by designing a tooth-like extension at the middle third of the columellar strut graft, which can be called "an inverted T-shaped columellar strut graft."

The aim of this study was to present a new configuration (the inverted T-shape) of the columellar strut graft to increase the stabilization capacity of the columellar graft in cases with short or shortened nasal septa.

Methods

Patients whose nasal tip surgery were performed with an inverted T-shaped columellar strut graft and who were operated on by the senior author between January 2019 and November 2021 were included in this research. All patients were informed of the intervention and their written informed consent was received. The ethics committee of the Bahçelievler Memorial Hospital affiliated with Arel University approved the trial for a retrospective study (protocol number: 31.10.2023/104).

Surgical Technique

The open rhinoplasty approach was preferred, and structural rhinoplasty was performed on all patients. The inverted T-shaped columellar strut graft was prepared similarly to the standard technique. However, a small cartilaginous tooth-like extension was preserved in the central part of the classic strut, branching off at a right angle (Figure 1). The length and width of the strut graft and extension have been tailored to the needs of each patient. The length of the extension of the graft varied according to the length of the space between the caudal septum and the columellar strut after it had settled properly. The dimensions of the grafts were measured and recorded for each patient.

A groove was formed between the medial crura in order to position the T-shaped columellar strut graft, and the graft was placed similar to the classical floating columellar strut graft. After the settlement, the length of the tooth-like extension was trimmed if more projection was required. The extension was then fixed end to end to the caudal margin of the septum with a 5.0 polydioxanone suture. Either a figure of 8 sutures or a dual knot fixation technique was performed as the first suture.[5] Then, a U-shaped suture was performed as a secondary fixator and the graft was connected with the caudal septum (Figure 2). Stability of the tip was achieved by suturing the medial crura of the lower lateral cartilages over the main body of the inverted T-shaped columellar strut graft. Finally, the tip plasty was completed with a lateral steal and intradomal and interdomal sutures (Figure 3).

Main Points

- Columellar strut graft (CSG) is effective in providing unity of the nasal tip when the medial and middle crura are weak or short. However, it has minimal effect on tip stabilization. To enhance the stabilization is minimal.
- The columellar strut graft may be fixed to the septum through a tooth-like autoextension at the middle third of the caudal septal cartilage, and this maneuver may overcome the disadvantage of the floating strut by augmenting its stabilization capacity.
- The septal autoextension may not be feasible in various conditions such as a short innate caudal septum or a caudal septum that was shortened by previous surgeries.
- The aim of this study was to present a new configuration of the columellar strut graft (the inverted T-shape) to increase the stabilization capacity of the columellar graft in cases with short or shortened nasal septa.

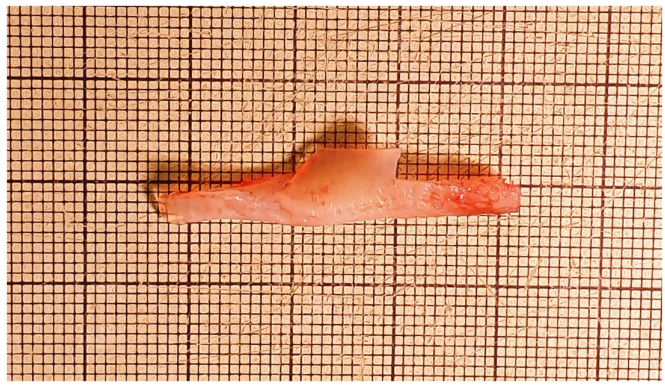

Figure 1. Peroperative design of an inverted T-shaped columellar graft. The main body of the graft is designed from the basal septum (34 mm in length). The tooth-like extension is located at the middle portion of the main body (3 mm in height).

Figure 2. Peroperative fixation of the inverted T-shaped columellar strut graft to the caudal septum.

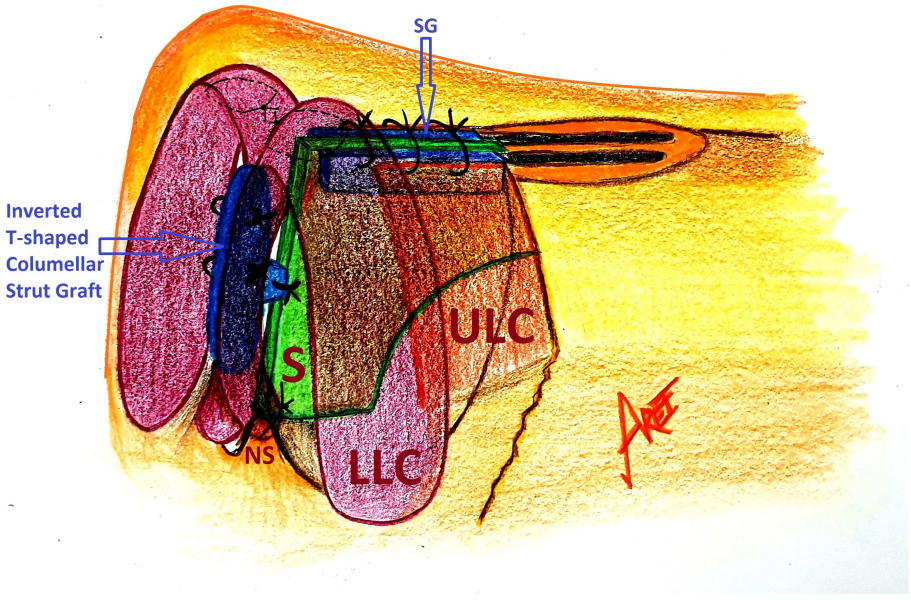

Figure 3. Illustration of nasal tip stabilization with inverted T-shaped columellar graft. S, septum; LLC, lower lateral cartilage; ULC, upper lateral cartilage; SG, spreader graft; NS, nasal spine.

Patient Evaluation

Preoperative and postoperative first year photographs were taken in the clinic. Preoperative photographs were analyzed together with intraoperative and postoperative first year photographs. All patients gave informed consent to be photographed and analyzed. All photos of the patients were taken with a 50 mm Canon Macro lens and Canon EOS 550D camera (Canon Inc. Japan). The stool was placed on a fixed sign in front of the background while the photographs were taken. This sign also contained warnings to guide the patient's position. Standard preoperative, intraoperative, and postoperative first year left lateral photographs were used for the study. Standardized left lateral photographs were obtained by placing the patient in the Frankfurt horizontal position. The apex of the tragus was in line with the infraorbital rim.[6] During the photographic shooting of all preoperative and postoperative images, 2 flashing lights and blue background were set in place. The camera was used in manual position with 1/160 shutter speed, F11, ISO 200. In the course of the photographing of the surgical images, the ceiling lighting was turned off and the operating room lighting was used for illumination. The camera was used in automatic mode in the flash-off position. While the patients were in the prone position, their heads were elevated.

Adobe Photoshop program, version 13.0.1 version (Adobe Systems Inc, San Jose, Calif, USA) was used to determine the nasolabial angles, nasal projection ratios, and the nasal tip rotation in both patient groups.[6] The nasal projection ratio was obtained by dividing the vertical range between the tip definition point and the line between the nasion and the alar fold by the length of the nose (Goode method).[7] A line parallel to the anterior edge of the vermilion and a second line parallel to the lower edge of the columella were drawn to measure the nasolabial angle. Nasal tip projection and nasolabial angle calculations were finalized using Adobe Photoshop program. The tip projection ratio and tip rotation angle calculations of both groups were determined by these measurements.[8]

Statistical Analysis

Statistical analysis was performed using NCSS (Number Cruncher Statistical System). The study data were evaluated using descriptive statistical methods (mean, standard deviation, median, frequency, percentage, minimum, maximum). The Shapiro–Wilk test and graphs were used to test the conformity of quantitative data to the normal distribution. The projection ratio and the nasolabial angle measurements demonstrated normal distribution; however, due to the number of cases in the groups, the Kruskal–Wallis test and the Dunn–Bonferroni test were used to compare the quantitative variables by group. Repeated measurements analysis of variance (Repeated Measures test) in nasolabial angle measurements and Bonferroni test in post hoc evaluations were used in evaluations according to within-group follow-ups. In the groups with a small number of cases, the Friedman test and the Bonferroni corrected Dunn test of post hoc comparisons were used for intragroup comparisons. Statistical significance was accepted as $P < .05$.

Results

Between January 2019 and November 2021, this technique was applied to 64 patients by the first author. The mean age of patients was 37 years (26-48 years). Thirty-five patients were female, whereas 29 patients were male. Forty-one patients had primary rhinoplasties and 33 of these patients had short innate septae, and 8 of them had severe septal deviation treated with extracorporeal septoplasty (The extracorporeal septoplasty caused some degree of shortening of the septal length). Twenty-three patients had secondary rhinoplasties and their caudal septae were shortened in their initial operations. Patients were followed for a mean of 14 months (8-22 months). The postoperative first-year results of 2 patients are depicted in the figure (Figure 4 and 5).

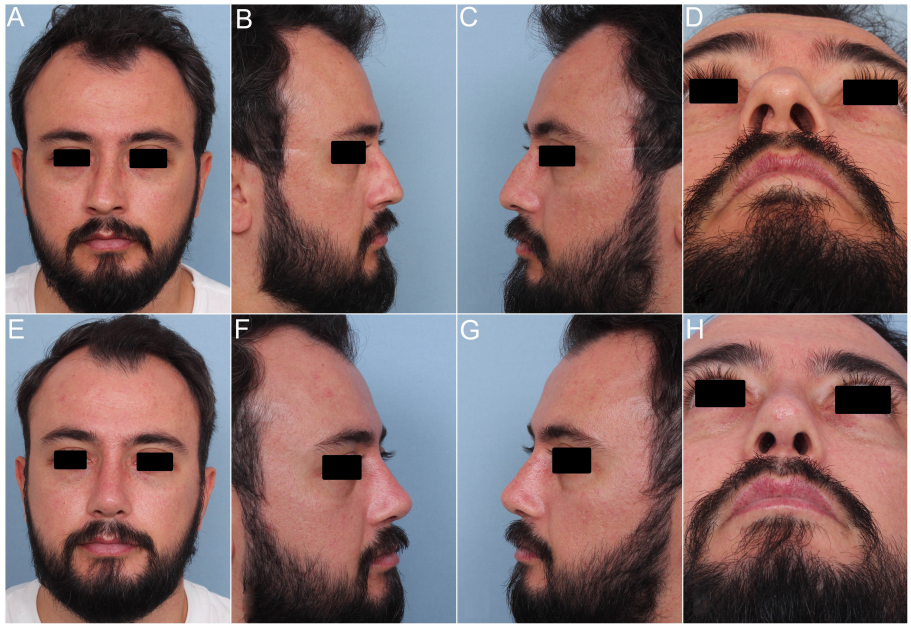

Figure 4. One of the male primary rhinoplasty patients with a severe high septal deviation and a normal tip rotation. The septum was extracorporeally corrected and it was fixated to the dorsal cartilaginous stump in a side-to-side fashion. Thus, the septum was shortened due to the current settlement. An inverted T-shaped columellar strut graft was preferred in his operation for tip stabilization. (A) Preoperative front view, (B) Preoperative right side view, (C) Preoperative left side view, (D) Preoperative base view, (E) 12 months postoperative front view, (F) 12 months postoperative right side view, (G) 12 months postoperative left side view, (H) 12 months postoperative base view.

Preoperative, immediate postoperative, and first-year postoperative projection ratio measurements of the cases showed no statistically significant difference between the groups ($P > .05$).

A statistically significant difference between the preoperative, immediate postoperative, and first year postoperative projection ratio measurements was found in all cases ($P = .001$; $P < .01$ According to the pairwise comparison calculations). a mean decrease of 0.18 ± 0.03 units in the immediate postoperative measurement compared to the preoperative one, a mean decrease of 0.15 ± 0.03 in the postoperative first-year measurement compared to the preoperative one, and a mean increase of 0.03 ± 0.01 units in the postoperative first-year measurement compared to the immediate postoperative one

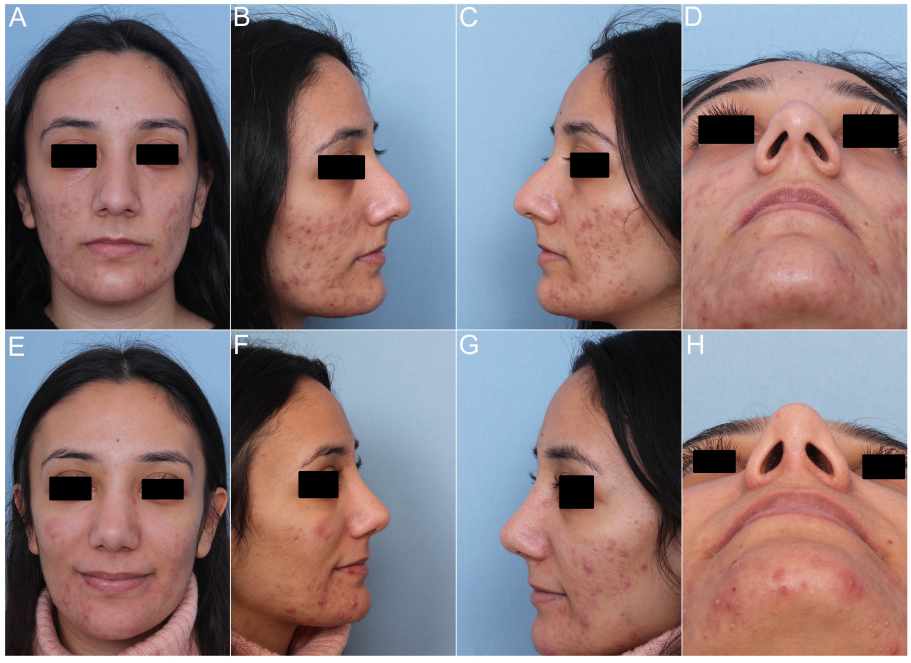

Figure 5. One of the female primary rhinoplasty patients with an innate short septum and a normal to high tip rotation. An inverted T-shaped columellar strut graft was preferred in her operation for tip stabilization. (A) Preoperative front view, (B) Preoperative right side view, (C) Preoperative left side view, (D) Preoperative base view, (E) 12 months postoperative front view, (F) 12 months postoperative right side view, (G) 12 months postoperative left side view, (H) 12 months postoperative base view.

were found to be significant ($P = .001$; $P = .001$; $P = .001$; $P < .01$ respectively). The same statistically significant increases were detected in all subgroups.

The changes in the immediate postoperative projection ratio measurements of the cases according to the groups were statistically significantly different ($P = .001$; $P < .01$). According to the pairwise comparison calculations applied to calculate the difference, the change in immediate postoperative measurement compared to preoperative of the cases in the primary female group was found to be significantly lower than the cases in the primary male and secondary female group ($P = .012$; $P = .001$; $P < .05$).

The changes in the 1-year postoperative projection ratio measurements of the cases according to the groups were statistically significantly different ($P = .002$; $P < .01$). The change in the 1-year postoperative measurement of the cases in the primary female group compared to the preoperative measurement, was found to be significantly lower than the cases in the primary male and secondary female groups ($P = .004$; $P = .042$; $P < .05$).

In the immediate postoperative period, a statistically significant difference was found between the changes in 1-year postoperative projection ratio measurements between groups ($P = .007$; $P < .01$). The change in the 1-year postoperative measurement of the cases in the primary male group, compared to the immediate postoperative period was found to be significantly lower than the cases in the secondary female group ($P = .007$; $P < .01$). Thus, nasal projection increased significantly in the immediate postoperative profile views compared to preoperative profile views, and it was observed that this projection was maintained satisfactorily at the end of 1 year with this technique (Table 1, Figure 6).

The preoperative nasolabial angle measurements of the cases according to the groups showed a statistically significant difference ($P = .007$; $P < .01$). The preoperative nasolabial angle value of the secondary male group cases was found to be significantly lower than the primary female and secondary female group cases ($P = .004$; $P = .024$; $P < .05$).

There was a statistically significant difference between the immediate postoperative nasolabial angle measurements of the cases by group ($P = .001$; $P < .01$). The immediate postoperative nasolabial angle value of the primary male group cases was found to be significantly lower than the primary female and secondary female group cases ($P = .001$; $P = .003$; $P < .01$). Likewise, the immediate postoperative nasolabial angle value of the secondary male group cases was found to be significantly lower than the primary female and secondary female group cases ($P = .001$; $P = .001$; $P < .01$).

Between the nasolabial angle measurements of the cases 1 year after surgery, a statistically significant difference was found between the groups ($P = .001$; $P < .01$). The 1-year postoperative nasolabial angle value of the primary male group cases was found to be significantly lower than the primary female and secondary female group cases ($P = .001$; $P = .006$; $P < .01$). Likewise, the 1-year postoperative nasolabial angle value of the secondary male group cases was found to be significantly lower than the primary female and secondary female group cases ($P = .001$; $P = .001$; $P < .01$).

In all cases, a statistically significant difference was found between the measurements of the nasolabial angle before surgery, immediately after surgery, and 1 year after surgery ($P = .001$; $P < .01$). Mean decrease of 21.72 ± 4.85 units in immediate postoperative measurement compared to preop, 17.79 ± 5.52 decrease in 1-year postoperative measurement compared to preop, and an average increase of 3.92 ± 1.99 units in 1-year postoperative measurement compared to the immediate postoperative were found (respectively; $P = .001$; $P = .001$; $P = .001$; $P < .01$).

The changes in the immediate postoperative nasolabial angle measurements of the cases according to the groups were statistically significantly different ($P = .001$; $P < .01$). The change in immediate postoperative measurement compared to preoperative in the primary male group was found to be significantly lower than the primary female and secondary female groups ($P = .001$; $P = .001$; $P < .01$).

The changes in the nasolabial angle measurements of the cases 1 year after surgery, according to the groups, were found to be statistically significant ($P = .001$; $P < .01$). The change in the 1-year postoperative measurement of the cases in the primary male group, compared to the preoperative measurement, was found to be significantly lower than the cases in the primary female and secondary female groups ($P = .001$; $P = .001$; $P < .01$).

According to the immediate postoperative period, a statistically significant difference was found between the changes in nasolabial angle measurements at 1 year postoperatively between the groups ($P = .001$; $P < .01$). The change in the 1-year postoperative measurement of the cases in the primary male group, compared to the immediate postoperative period was found to be significantly higher than the cases in the primary female and secondary female groups ($P = .001$; $P = .025$; $P < .05$). Likewise, the change in the 1-year postoperative measurement of the cases in the secondary male group compared to the immediate postoperative period was found to be significantly higher than the cases in the primary female and secondary female groups ($P = .001$; $P = .022$; $P < .05$). Thus, the nasolabial angle increased significantly in the immediate postop profile views compared to preoperative profile views, and it was observed that this angle was maintained satisfactorily at the end of 1 year with this technique (Table 2, Figure 7).

Discussion

The long-term stability of the tip projection and rotation is required to obtain satisfactory results in rhinoplasty.[9] Several reliable techniques have been described for this purpose. These include the tongue-in-groove technique, the septal extension graft, the septocolumellar suture, and septal autoextension.[1-3,10,11]

The tongue-in-groove technique requires caudal septal cartilage which normally hangs down 2-4 mm below the plane of the anterior nasal spine.[10] However, the septum may be short congenitally or it may be shortened in a previous septorhinoplasty.

Table 1. Evaluation of Nasal Projection Ratio Measurements According to Patient Groups

Projection Ratio		Total (n = 54)	Group				P^a
			Primary Rhinoplasty Female (n = 21)	Primary Rhinoplasty Male (n = 10)	Secondary Rhinoplasty Female (n = 14)	Secondary Rhinoplasty Male (n = 9)	
Pre-op	Mean ± SD	0.53 ± 0.06	0.55 ± 0.05	0.53 ± 0.06	0.51 ± 0.06	0.51 ± 0.07	.217
	Median (minimum–maximum)	0.53 (0.4-0.64)	0.6 (0.5-0.6)	0.5 (0.5-0.6)	0.5 (0.4-0.6)	0.5 (0.4-0.6)	
Immediate postop	Mean ± SD	0.71 ± 0.04	0.71 ± 0.04	0.72 ± 0.04	0.71 ± 0.04	0.7 ± 0.04	.768
	Median (minimum–maximum)	0.7(0.6-0.8)	0.7 (0.7-0.8)	0.7 (0.7-0.8)	0.7 (0.7-0.8)	0.7 (0.6-0.8)	
1-year postop	Mean ± SD	0.68 ± 0.04	0.68 ± 0.04	0.7 ± 0.04	0.67 ± 0.04	0.67 ± 0.04	.527
	Median (minimum–maximum)	0.68 (0.6-0.8)	0.7 (0.6-0.8)	0.7 (0.6-0.8)	0.7 (0.6-0.8)	0.7 (0.6-0.7)	
	P^b	.001**	.001**	.001**	.001**	.001**	
Pre-op-immediate post-op	Difference	−0.18 ± 0.03	−0.16 ± 0.02	−0.19 ± 0.02	−0.2 ± 0.04	−0.18 ± 0.03	.001**
	P	.001**	.001**	*.001***	.001**	.001**	
Pre-op-1-year post-op	Difference	−0.15 ± 0.03	−0.13 ± 0.02	−0.17 ± 0.03	−0.16 ± 0.04	−0.16 ± 0.03	.002**
	P	.001**	.004**	.076	.024*	.102	
Immediate post-op-1-year post-op	Difference	0.03 ± 0.01	0.03 ± 0.01	0.02 ± 0.01	0.04 ± 0.01	0.027 ± 0.01	.007**
	P	.001**	.004**	.076	.024*	.102	

[a]Kuskal–Wallis test.
[b]Friedman test and post hoc Dunn test.
*$P < .05$.
**$P < .01$.

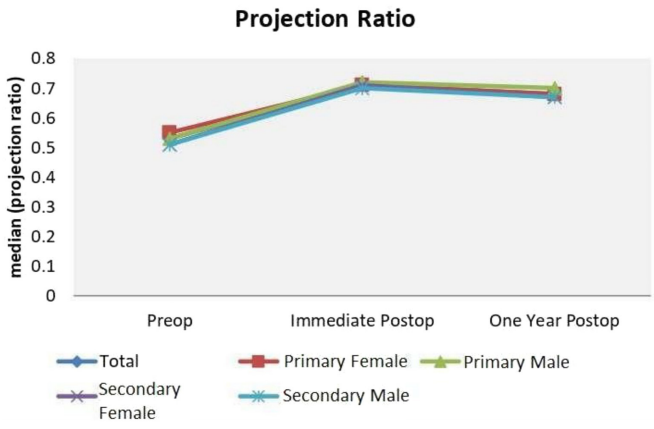

Figure 6. Graphic of nasal projection ratio of preoperative, immediate postoperative, and 1 year postoperative measurements for different patient groups and for the total patient group.

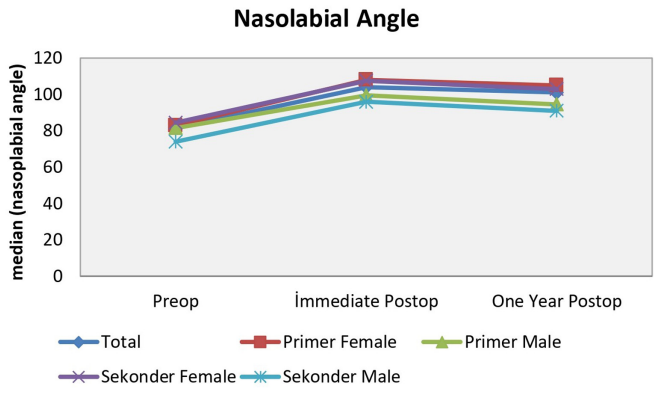

Figure 7. Graphic of nasolabial angles of preoperative, immediate postoperative, and 1 year postoperative measurements for different patient groups and for the total patient group.

The tip of such patients cannot be stabilized with the tongue-in-groove technique. There is also a risk of overrotation of the tip of the nose with the tongue-in-groove technique and the septocolumellar suture.[10] The tongue-in-groove technique can cause columellar retraction even in patients with normal caudal septal length.[11] The tip overrotation and the columellar retraction may be exacerbated in patients with short septae and this technique is not recommended in these patients.[11] Utilization of the inverted T-shaped columellar strut graft may augment the stabilization action of the floating columellar strut graft specifically in cases with a short and shortened septum without any risk of overrotation or columellar retraction.

Septal extension grafts may be preferred in patients with short or shortened septa and may allow stabilization of the tip of the nose.[12] However, the limited donor sites in patients with short or shortened septa should be used sparingly, as the vast majority of patients require a variety of grafts during septorhinoplasty, such as spreaders (sometimes more than 1 spreader graft on each side), caps, diced cartilage, batten grafts, and camouflage grafts. In secondary cases, this

Table 2. Evaluation of the Nasolabial Angle Measurements According to Patient Groups

			Group				
Nasolabial Angle		**Total (n = 54)**	**Primary Rhinoplasty Female (n = 21)**	**Primary Rhinoplasty Male (n = 10)**	**Secondary Rhinoplasty Female (n = 14)**	**Secondary Rhinoplasty Male (n = 9)**	***P*[a]**
Pre-op	Mean ± SD	82.37 ± 6.94	84.52 ± 6.69	82.9 ± 6.44	83.57 ± 5.98	74.89 ± 4.96	.007**
	Median (minimum–maximum)	81.5 (68-96)	83 (76-96)	81.5 (75-94)	84.5 (75-94)	74 (68-82)	
Immediate post-op	Mean ± SD	104.09 ± 6.07	107.95 ± 3.98	98.8 ± 3.01	107.21 ± 3.79	96.11 ± 2.93	.001**
	Median (minimum–maximum)	104 (92-115)	108 (102-115)	99.5 (94-103)	107.5 (101-113)	96 (92-101)	
1-year post-op	Mean ± SD	100.68 ± 6.81	105.1 ± 3.99	93.7 ± 2.11	103.43 ± 4.01	90.78 ± 1.72	.001**
	Median (minimum–maximum)	101 (88-112)	105 (99-112)	94,5 (90-96)	103 (98-110)	91 (88-93)	
	P[b]	.001**	.001**	.001**	.001**	.001**	
Pre-op–-immediate post-op	Difference	−21.72 ± 4.85	−23.43 ± 4.96	−15.9 ± 3.78	−23.64 ± 3.25	−21.22 ± 2.22	.001**
	P	.001**	.001**	.001**	.001**	.001**	
Pre-op-1 year post-op	Difference	−17.79 ± 5.51	−20.57 ± 4.48	−10.8 ± 5.03	−19.86 ± 3.18	−15.89 ± 3.66	.001**
	P	.001**	.004**	.076	.024*	.102	
Immediate post-op-1 year post-op	Difference	3.92 ± 1.98	2.86 ± 0.79	5.1 ± 1.37	3.79 ± 2.83	5.33 ± 1.58	.001**
	P	.001**	.004**	.076	.024*	.102	

[a]Kuskal–Wallis test.
[b]Friedman test and post hoc Dunn test.
*$P < .05$.
**$P < .01$.

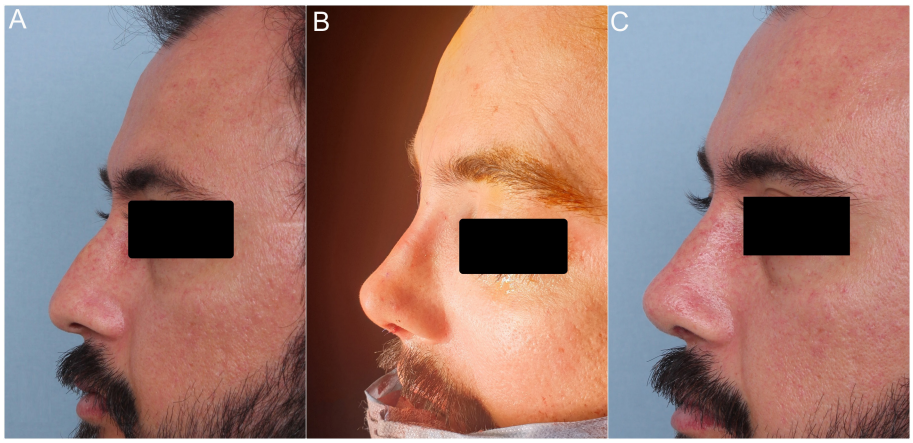

Figure 8. Preoperative (A), immediate postoperative (B), and 1-year postoperative (C) left lateral views of the male patient presented in Figure 4, showing the preservation of both rotation and projection with the utilization of an inverted T-shaped columellar strut graft.

cartilage shortage can be compensated for by allografts. In primary cases, using these allografts is not usually allowed and not usually programmed before the operation. A large septal extension graft may not be feasible in such cases, and an inverted T-shaped columellar strut graft may be prepared with less cartilage volume. Conversely, the septal extension graft may cause tip stiffness.[1] The novel technique of this study was based on the fixation of the septum and the columellar strut by means of a tooth-like extension on the graft and the reduction of the contact surface between the caudal septum and the strut. Thus, stiffness and rigidity may be less likely compared to the septal extension graft, yet delivering a sufficient quantity of tip stabilization for both tip projection and rotation (Figure 8).

The grafts may be harvested from a severely deviated septum and the cartilage may not have a straight shape.[13] In such cases, designing an inverted T-shaped columellar strut graft may be more feasible compared to the septal extension graft. This use can be seen as another benefit of this technique.

The septal donor site may be limited in some patients, especially the elderly ones. The amount of cartilage decreases whereas the bony component increases with age.[14] A large septal extension graft may not be designed out of such septa, and an inverted T-shaped columellar strut graft with smaller dimensions may be prepared as an advantage of this technique.

Although the septa of some patients have a normal length, they may be shortened during the primary rhinoplasties. For example, serious traumas such as falls, traffic accidents, and interpersonal violence may cause severe deformities in the septa and such patients may require extracorporeal septoplasties.[15] The extracorporeally prepared L-shaped septum may become shortened after fixation over the nasal spine and the dorsal cartilaginous stump. In such cases, the inverted T-shaped columellar strut graft may be a good alternative during the stabilization of the tip. One of the primary rhinoplasty patients in this study required an extracorporeal septoplasty and an inverted T-shaped columellar graft is depicted in figure (Figure 4).

The novel technique has some advantages over the standard floating columellar strut graft. It may augment the stabilization action of the floating columellar strut graft, especially in patients with a short or shortened septum without any risk of overrotation or columellar retraction.[16] Additionally, the risk of clicking of the columellar strut graft against the anterior nasal spine usually results from the backward shifting of the floating columellar strut graft with the temporal deprojection of the nasal tip.[1,16] It is reduced by the utilization of the inverted T-shaped columellar strut graft due to the less tendency of deprojection.

The inverted T-shaped columellar strut graft may be prepared from various donor sites such as the septum and the costal cartilage, which can be preferred in secondary cases.[17] The thickest and most resistant part of the septal cartilage is the basal portion, and it is recommended that the main body of the strut graft be prepared from this strong basal portion.[18]

The study demonstrated a significant improvement in changes in nasolabial angle measurements 1 year after surgery in all patient groups. Nasal projection ratios also increased similarly and remained stable in all patient groups at 1 year. The inverse T graft provided stability for long-term results. This graft provides a strong alternative for nasal tip reconstruction in cases of a short or shortened septum. It also reduces the risk of columellar deformity.

The utilization of the inverted T-shaped columellar strut graft may be a good alternative for satisfactory nasal tip stabilization with graft economy and feasibility and without the risk of columellar retraction, over-rotation, and stiffness, especially in patients with a short or shortened septum.

Ethics Committee Approval: Ethics committee of the Bahçelievler Memorial Hospital affiliated with Arel University approved the trial for a retrospective study (protocol number: 31.10.2023/104).

Informed Consent: Written informed consent was obtained from the patients who agreed to take part in the study.

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