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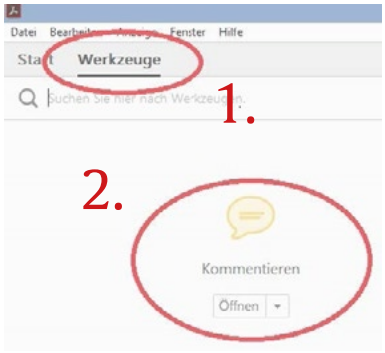

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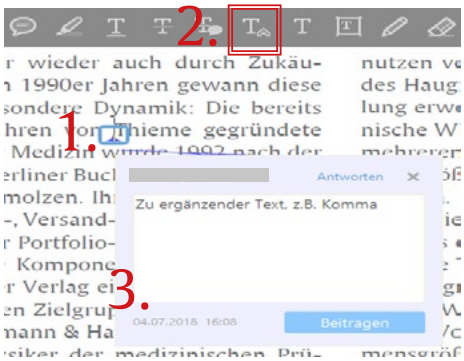

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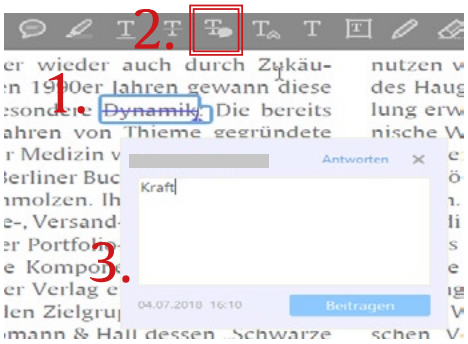

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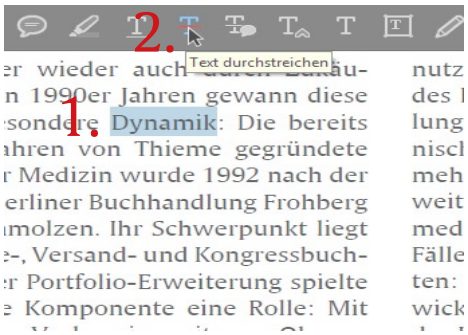

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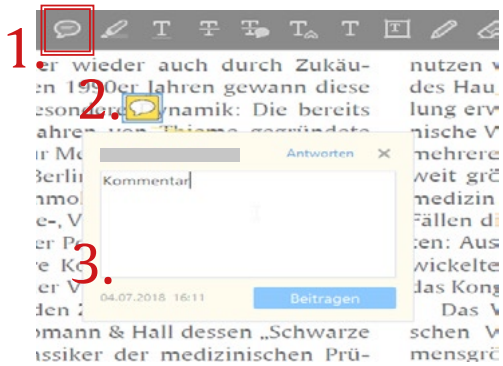

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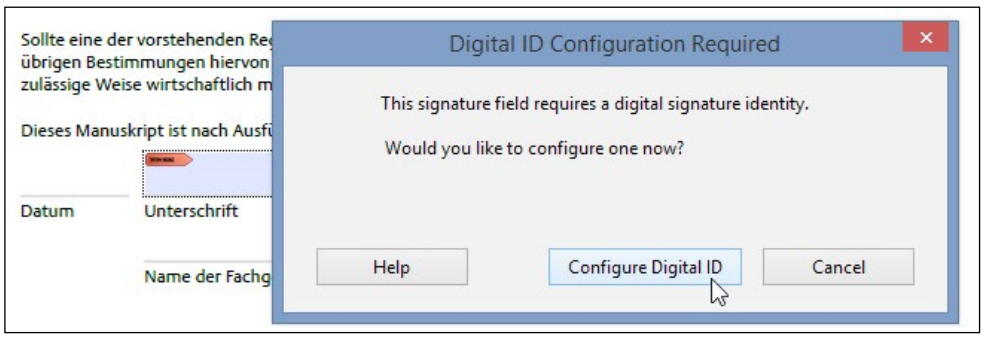

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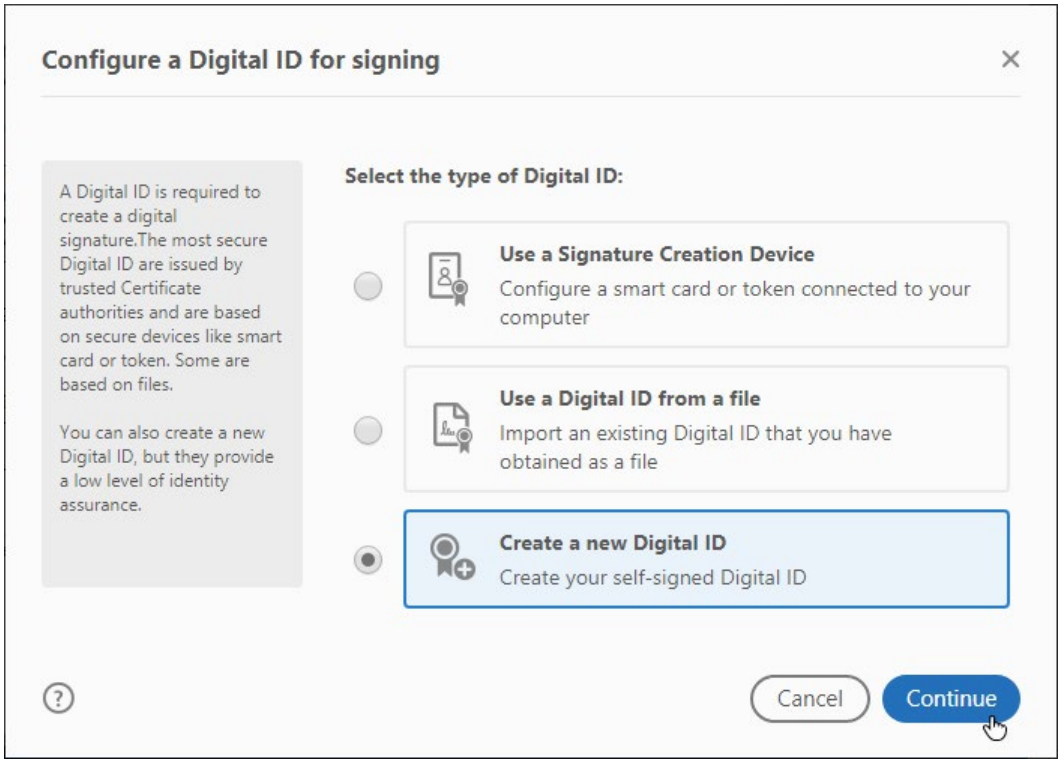

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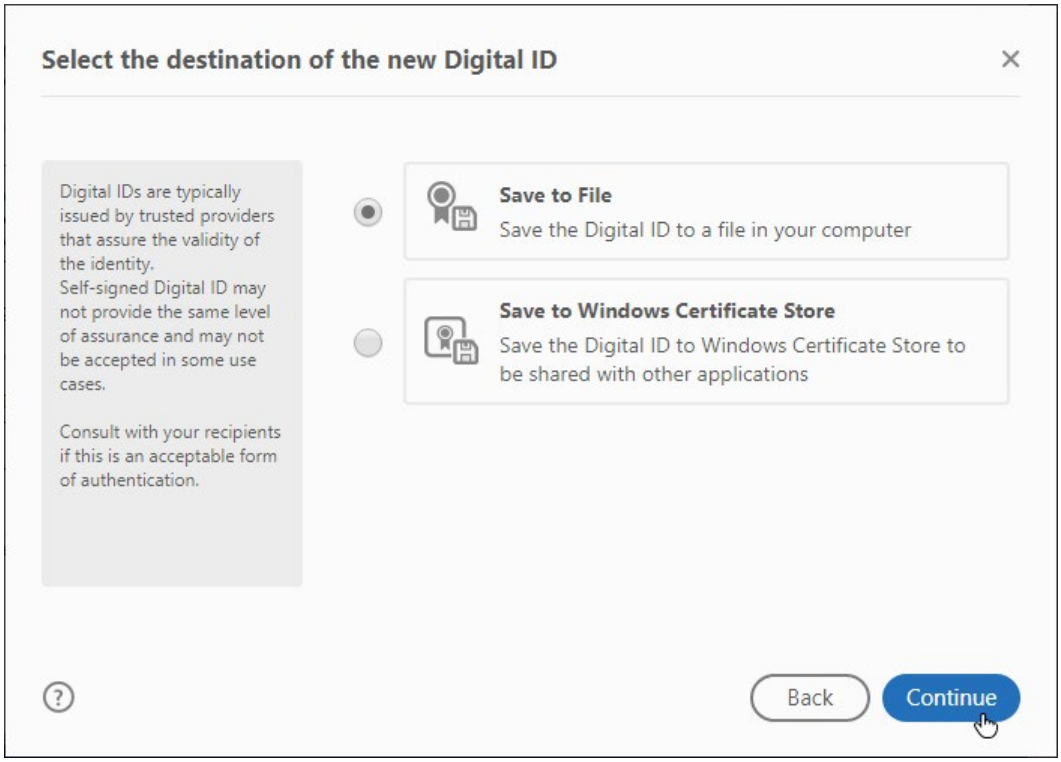

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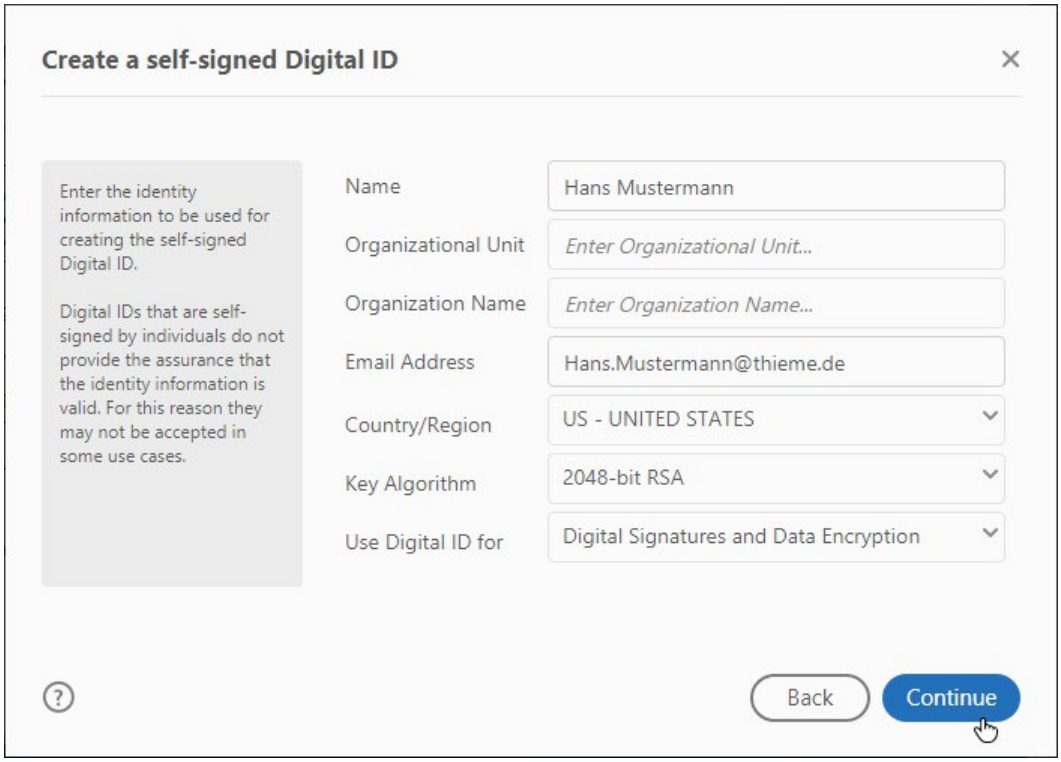

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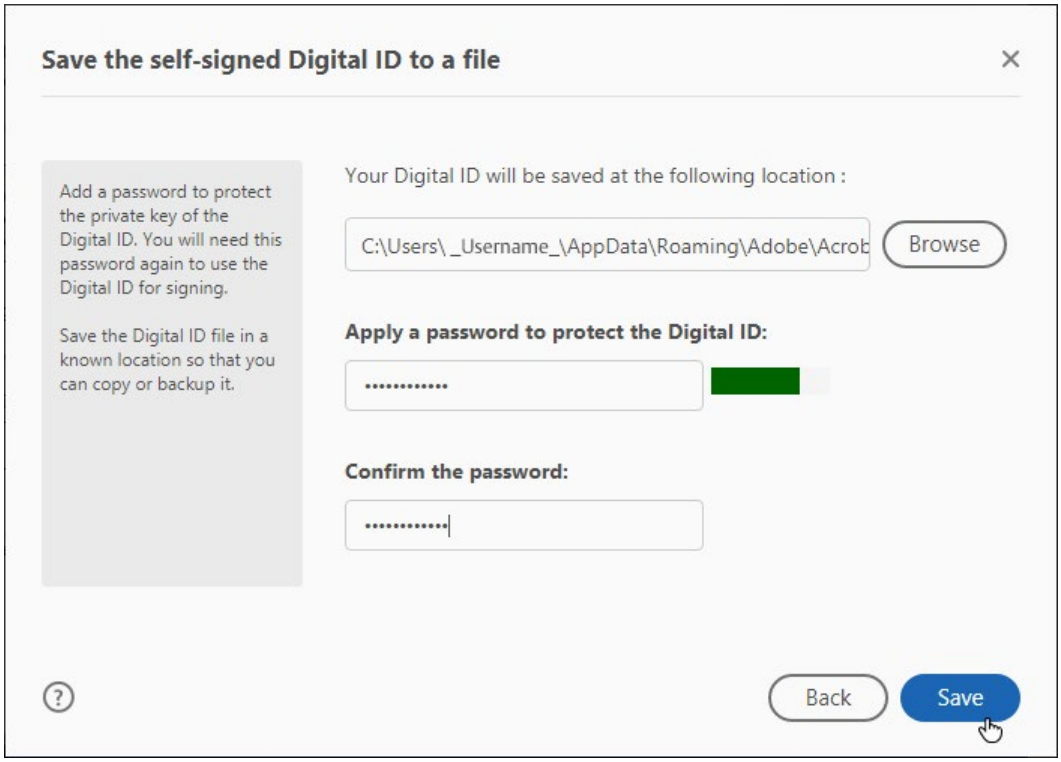

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The Caudal Septum Pivot Technique for Short Nose Correction

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Facial Plast Surg 2021;00:1–7.

Abstract

The short nose represents one of the greatest challenges in rhinoplasty. It is characterized by a reduced distance from the nasal radix to the tip-defining points, often associated with inadequate tip projection. Several techniques have been described for correction of short nose with the common objective of replacing and rebuilding the osteocartilaginous framework. One of the most effective method to correct the short nose is the septal extension graft. The authors describe the caudal septum pivot (CSP) technique, a simple method to elongate short noses by using a graft inserted in the dorsal septum after its division using as pivot the caudal portion, without detaching it from its natural anchorage to the anterior nasal spine. A retrospective analysis was performed reviewing the clinical charts and the operative records of 315 patients who underwent revision rhinoplasty from January 2015 to June 2019; among this group, 34 were considered eligible for the study. The patients (8 men, 26 women; mean age: 25.4 years; age range: 22–53 years) were divided into two groups: in 12 patients (Group 1) the CSP technique was performed, while Group 2 was composed of 22 patients who received a more classic treatment with a septal extension graft. To evaluate the outcomes, nasal length, tip projection, and tip rotation were measured pre- and 1 year postoperatively on digital photographs of each patient. Nasal anthropometric measurements revealed, at 12-month visit follow-up, an improvement in nasal length, tip projection, and nasolabial angle was achieved in all the patients. The comparison of the pre- and postoperative values showed a statistically significant reduction in the nasolabial angle ($p < 0.05$) and an increase in the tip projection ($p < 0.05$) and in the nasal lengthening ($p < 0.05$) in both groups. In authors' experience, the CSP technique could be considered a safe, reliable, and effective alternative technique in selected patients.

Keywords
- rhinoplasty
- short nose
- septal extension graft
- caudal septum pivot

The short nose represents one of the greatest challenges in rhinoplasty. Several techniques have been described for its correction with the common objective of replacing and rebuilding the osteocartilaginous framework. One of the most effective method to correct the short nose is the septal extension graft (SEG). Byrd et al[1] first reported the use of the SEG in the control of the projection, shape, and rotation of the nasal tip. Numerous authors have described modified types of SEG achievable with a little quantity of cartilaginous graft, harvested from the septum or auricular concha.[2–4]

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Although autologous rib cartilage is safe and it can supply a very important amount of cartilage, it is not always well accepted by patients because of potential complications, including warping of the graft and important donor site morbidity. Besides the limited harvestable septal cartilage, another possible drawback of SEG can be the anterior nasal spine (ANS) fixation that is often week, leading to tip drooping or bending of the graft, causing subsequent tip asymmetries.[5]

Authors describe the caudal septum pivot (CSP) technique, a simple method to elongate short noses by using a graft inserted in the dorsal septum after its division using as pivot the caudal portion, without detaching it from its natural anchorage to the ANS.

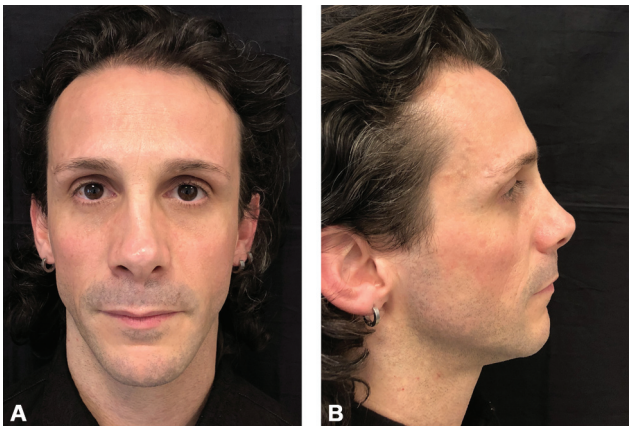

Fig. 1 (**A**, **B**) Frontal and lateral view of the patient before the surgery[Q3].

Patients and Methods

A retrospective analysis was performed reviewing the clinical charts and the operative records of 315 patients who underwent revision rhinoplasty from January 2015 to June 2019; among this group, 34 were considered eligible for the study.

All the surgeries were performed by the same author (T.M.).

Written informed consent for revision rhinoplasty surgery was obtained from all patients, accompanied with their consent for serial photography collection and publication.

Inclusion criteria were a preoperative computed tomography (CT) scan, the presence of iatrogenic short nose, and a complete photographic exam preoperative and 1-year follow-up at least.

Exclusion criteria were incomplete radiological or photographic data, previous skin traumatic or intraoperative injuries with cutaneous relevant scar contracture, and associated craniofacial syndromic malformations.

Digital photographs of patients were taken with a "Canon 5DMarkIII" camera and "Canon 100mm MACRO F2.8 L IS" lens.

Distance from the camera to the patient was 2 m and the angles of projecting lights (2 softbox) to the object and the background were 45 degrees.

Patients were photographed from frontal, oblique, basal, and lateral view preoperatively, at 6 months postoperatively, 1 year postoperatively, and annually thereafter. From January 2015 to June 2019, 315 patients underwent revision open septorhinoplasty. Of these, 61 cases were classified as short noses. Among these patients, 15 were excluded from the present study because the patients presented skin scar contracture or craniofacial syndromic malformations. In other 12 cases, the photographic and radiological data were incomplete.

The remaining 34 cases were selected for the present study. None of these patients had relevant comorbidities. The patients (8 men, 26 women; mean age: 25.4 years; age range: 22–53 years) were divided into two groups: in 12 patients (Group 1), the CSP technique was performed (►**Figs. 1**–**4**), while the Group 2 was composed of 22 patients who received a more classic treatment with a SEG.

To evaluate the outcomes, nasal length (the distance between the Nasion and the most projected point of the nasal tip), tip projection (the distance between the basal facial plane passing through the alar crease junction and the most projected point of the tip), and tip rotation (considered as expressed by nasolabial angle) were measured pre- and 1 year postoperatively on digital photographs of each patient. Because there was little variability in the size and in the magnification of each photograph, the digital photo, analyzed with Adobe Photoshop PS 2020 (Adobe Systems, San Jose, CA), was standardized and calibrated to a fixed reference of 67 mm of interpupillary distance either in preoperative or in postoperative photographs in frontal view. Then, as

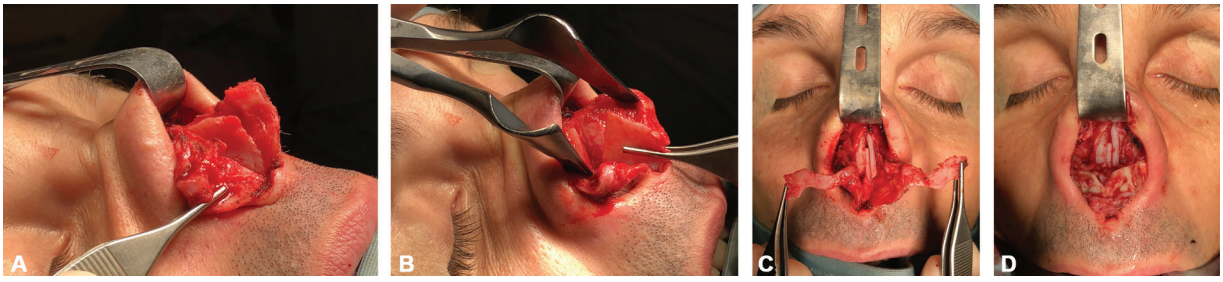

Fig. 2 (**A**) The upper lateral cartilage, after dissection, is displaced to show the residual short quadrangular cartilage; (**B**) vertical cut of the L-strut leaving its connections to the nasal spine to allow the caudal rotation using the spine as pivot point; (**C**) L-strut gap rebuild using two "bridge extended spreader grafts" overlapped 4 to 5 mm to the residual septum to allow a better fixation of the structure. (**D**) Final upper view with an associated complete reconstruction of the lower lateral crura with conchal cartilage and a shield graft for tip.

Fig. 3 (A, B) Frontal and lateral view of the patient 1 year after the surgery.

Fig. 4 (A, B) Frontal and lateral view of the patient 1 year before the surgery.

a reference in profile view, the linear distance from the subnasal to the labialis superioris point was measured in frontal view along a philtrum column and then referred to the profile photo to calibrate it on the base of this measure. The mean follow-up was 18 months (range: 12–28 months).

Patients were asked to complete an anonymous in-office questionnaire at 1 year of follow-up. The patients' satisfaction with the final shape of their nose was evaluated by this questionnaire. According to Kim and Choi,[6] a 4-point scale was used, with the ratings as follows: 4: excellent; 3: good; 2: fair and 1: poor. The tip stiffness sensation was also investigated with a 3-point scale as follows: 0: no stiffness, 1: stiffness without discomfort, and 2: stiffness with discomfort.

The comparison among the different variables was assessed by using Student's *t*-test for paired data. Statistical analysis was performed by SPSS (version 19.0, IBM, Armonk, NY). A *p*-value of <0.05 was considered statistically significant.

Surgical Technique

Surgery was performed via a transcolumellar approach through bilateral marginal incisions and an inverted-V transcolumellar incision. The skin envelop was elevated from the lower lateral cartilages following a subperichondrial plane as much as possible considering the adhesions due to the scar caused by the previous surgery. The skin over the nasal bones was raised in a subperiosteal plane to the nasion region. The scroll ligament and nasal hinge area were released. The medial crura were then separated to reach the septum releasing the fibroelastic tissue attachment and the depressor nasal septi muscle. All the residual septum was exposed showing the residual quadrangular cartilage, the perpendicular plate of the ethmoid bone, and the vomer. The upper lateral cartilages were separated from the septum in a submucosal plane. All the available cartilaginous septum was harvested, leaving in every case a dorsocaudal L-strut of no less of 8 mm. If the residual septal cartilage was considered not sufficient for reconstructive purposes, then the cartilage graft was harvested either from the rib, normally the fifth or the sixth, or from the auricular concha mono or bilaterally with a posterior approach. When the caudal septum was too weak to be used as supporting strut, we decide to use a SEG. A large piece of cartilage was sutured side by side to the original septum in a more caudal and forward position. The extent of the septal extension was dependent on the underlying nasal shortness but generally consisted of a 7- to 15-mm intraoperative increase in septum length. It was fixed to the septum and to the periosteum around the ANS using 5–0 polydioxanone sutures (PDS) at four or five anchor points. The domal segment of the lower lateral cartilage and the extension graft were sutured for tip projection and caudal rotation.

When a strong caudal septum was present (at least 1.5 mm of thickness), (►**Fig. 2A**, **5A**), but it was too short because of the previous surgery, we decided to vertically cut the L-strut of the septum in its dorsal part using Fomon scissors (►**Fig. 5B**). The caudal septum was therefore rotated caudally, without separating the fibrous connective tissue that represents the insertion of the caudal septum to the ANS. We use this attachment as a pivot point on which we could rotate caudally the inferior portion of the divided L-strut of the septum (►**Fig. 2B** and **5C**). The space on the dorsum, resulting from the separation and rotation of the caudal segment, was fulfilled like a bridge by two extended spreader grafts (►**Figs. 2C** and **5D**) overlapped for an extent of 4 to 5 mm to the septal segments to fix them better and to maintain the separation and the caudal rotation. The grafts were first sutured to the cephalic septal segment by 5–0 PDS sutures. Before the other sutures between the graft and the caudal septal segment were performed, the angle between the caudal and dorsal border of the septum was adjusted to obtain optimal nose length, right tip projection, and appropriate nasolabial angle (►**Fig. 7**). It was sometimes necessary to remodel the caudal border of the rotated septum. The more necessity to derotate the nasal tip, the more extent of the bridge grafts was needed. "Septal bridge graft" are these particular spreader grafts, which had not only the role of spreading but also a bridge function. These grafts were

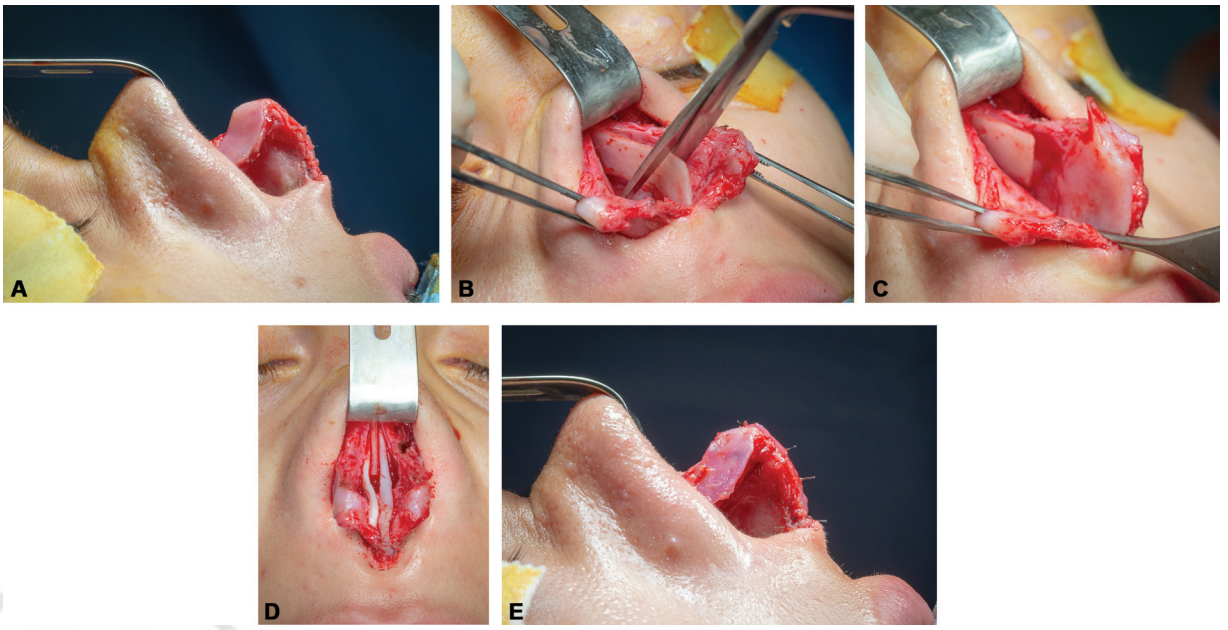

Fig. 5 (**A**) Lateral view showing the hyperrotation of the nasal tip caused by the excessive shortening of the caudal septum; (**B**) vertical cut of the L-strut; (**C**) caudal rotation of the septal graft using the nasal spine as a pivot point; (**D**) septal bridge graft harvested from the residual septum on the left side and from the auricular concha on the right side to fix the caudal graft; (**E**) final Lateral view showing the tip derotation obtained and a new position of the lower lateral crura.

harvested from the resected central–posterior septum when present or from the conchal cartilage when there was no availability of septal cartilage. The septal bridge graft does not require so much rigidity as a SEG and the conchal graft, divided into two pieces, was able to maintain the rotation without distortion. No rib graft was harvested in this group. The intraoperative lengthening of dorsal septum with this technique was generally from 7 to 16 mm. The middle crura of the lower lateral cartilages were secured to the newly created septal angle with PDS to simultaneously increase nasal length and tip projection and to reduce tip rotation. The medial crura were then fixed either to the SEG (Group 2) or to the caudal septum rotated and fixed in the new caudal position (Group 1). The upper lateral cartilages were sutured to the dorsal neoseptum. Multiple quilted sutures using 4.0 resorbable suture (Vicryl Rapide) on the septum were placed at the end of the procedure to avoid any septal hematoma. Additional procedures included a cap or shield graft using the remaining auricular or septal cartilage for greater tip definition in 10 patients (►**Fig. 2D**). Finally, the columellar skin flap was returned into position without tension and the skin incision was closed with 6–0 nylon sutures (►**Figs. 3**–**6**).

External aluminum splints were used in all patients for 7 days and no internal pack was applied in any case.

Results

Among the 34 selected cases, 22 (64.7%) had previously undergone only one nasal surgical procedure, whereas 7 (20.6%) cases had undergone two previous rhinoplasties, and 5 (14.7%) cases had three previous rhinoplasties. In the Group 1, conchal graft, from one or both ears, was harvested in 10 of 12 patients, because the septal cartilages were too small to be used as septal bridge graft, while in the remaining two patients, we used the residual septum to obtain the grafts. No rib cartilage was used in this group. In 13 cases of the Group 2, it was possible to harvest the residual septum to obtain a SEG, while in the other 9 cases, a rib graft harvesting was needed. In 7 cases of the Group 2, a conchal cartilage was harvested for alar reconstruction or for refinements graft of the nasal tip.

Nasal anthropometric measurements revealed, at 12-month visit follow-up, an improvement in nasal length, tip projection, and nasolabial angle was achieved in all the patients. The mean preoperative nasolabial angle was 111.8 degrees (range: 103–127 degrees, standard deviation [SD]: ± 8.3) in the Group 1 and 117.9 degrees (range: 103–131 degrees, SD: +8.3) in the Group 2. The mean postoperative values of the nasolabial angle were 99.7 degrees (SD:

Fig. 6 (**A**, **B**) Frontal and lateral view of the patient after the surgery.

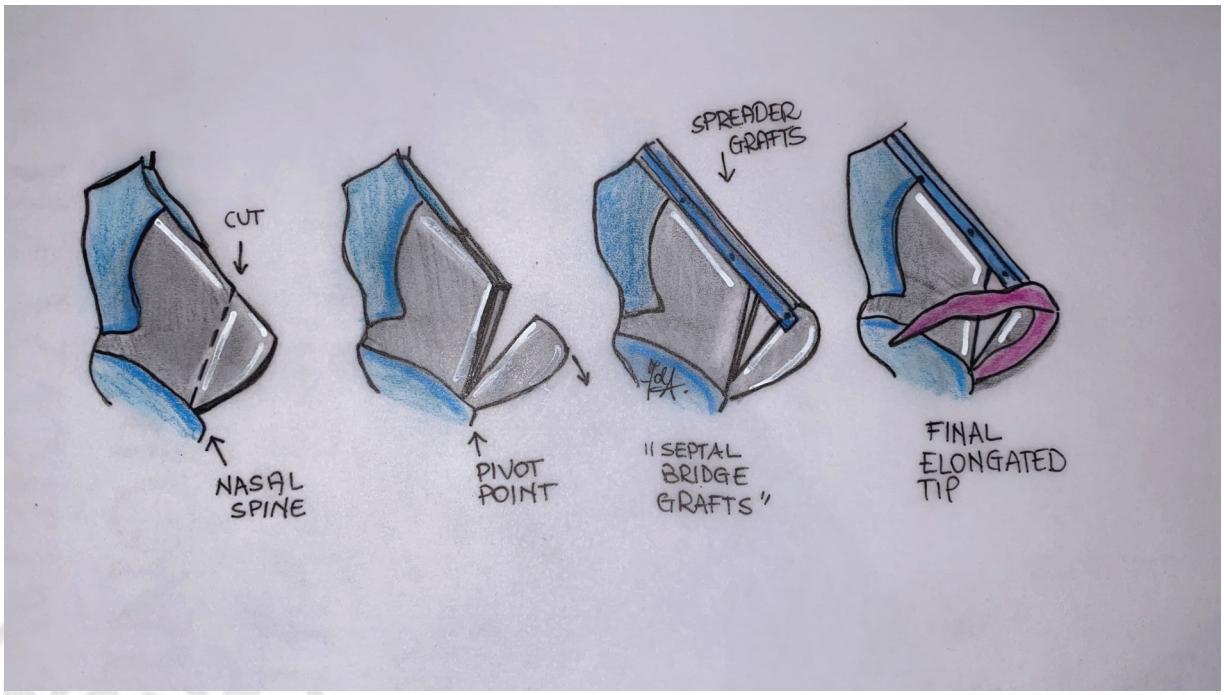

Fig. 7 Caudal septum pivot technique.

+6.6) in the Group 1 and 100.7 degrees (SD: +5.9) in the Group 2. The mean change of the nasolabial angle from the pre- to postoperative was 11.25 degrees (SD: +5.32, $p < 0.05$) for the Group 1 and 17.0 degrees (SD: +6.06; $p < 0.05$) for the Group 2. As to the nasal lengthening, the preoperative mean was 43.5 mm (SD: +4.9) in Group 1 and 40.95 mm (SD: +5.3) in Group 2, whereas the postoperative values were 48.3 mm (SD: +4.7) in the Group 1 and 45.8 mm (SD: +5.1) in the Group 2. Therefore, a statistically significant ($p < 0.05$) increase in the nasal lengthening was recorded in the postoperative examination with respect to preoperative conditions for both groups. A significant ($p < 0.05$) increase in the nasal tip projection was noted on postoperative assessment (Group 1: mean: 29.1 mm; SD: +3.2; Group 2: mean: 29.5; SD: +2.7) with respect to preoperative examination (Group 1: mean: 24.6 mm; SD: +2.6; Group 2: mean: 25.4; SD: +3.2) for both groups.

The comparison of the pre- and postoperative values showed a statistically significant reduction in the nasolabial angle ($p < 0.05$), an increase in the tip projection ($p < 0.05$) and in the nasal lengthening ($p < 0.05$) in both groups.

There was no case of graft displacement. In two patients, a little asymmetry of the columella was present. Only one patient of the Group 1 and two patients of the Group 2 required minor revision surgery. The patient of the Group 1 for dorsal irregularities[Q4] and the two patients of the Group 2 because they were unsatisfied with their nasal projection. The follow-up period was uneventful, except for one case of skin infection at the base of the columella on the fourth postoperative day, which was controlled by antibiotics.

With regard to patient's satisfaction, for the Group 1, 9 patients rated excellent, 2 good, and 1 rated poor, and for the Group 2, 12 patients rated excellent, 8 patients rated good, 2 patients rated fair, and nobody rated poor.

Stiffness of the nasal tip is the major discomfort after the initial healing process when tip grafts are used. All patients of the two groups reported high rate of stiffness with discomfort in the first 3 months postsurgery. At 6 months postoperatively, stiffness sensation was highly reduced in Group 1, while the major discomfort remains in the Group 2. At 1-year follow-up, 9/12 patients of the Group 1 reported no stiffness and 3/12 patients referred stiffness without discomfort; 7/22 patients of the Group 2 reported stiffness with discomfort, 10/22 patients reported stiffness without discomfort, and only 5 patients reported no stiffness. Comparing the reported stiffness between the two groups, it was statistically significant more reported stiffness in the Group 2 compared with the Group 1 ($p < 0.05$).

Discussion

The correction of the short nose is one of the most challenging problems in facial plastic surgery. Secondary short nose deformity results from previous rhinoplasty or trauma.[4] Septal extension is currently the most common method used to correct short nose. Several authors described better support for the nasal tip and more stability over time when using the SEG compared with the columellar strut graft, in particular in revision rhinoplasties.[7–9] The disadvantages described for the SEG are the stiffness of the nasal tip and the need of a big amount of cartilage to use. The harvestable septal cartilage if often insufficient in operated noses because of previous aggressive septoplasties and so rib cartilage has to be harvested.

Rib cartilage grafting provides ample volume of cartilage and robust strength; however, its disadvantages include possible warping and donor-site morbidity.[4,10,11]

Ear cartilage grafts are often used, even if they provide a more limited supply of cartilage. The auricular concha is easily accessible, the graft from this donor site causes minimal postoperative pain, has a low rate of resorption and it is well accepted by patients.[12] Its use is common as tip graft, for the reconstruction of the lower lateral cartilages, but it does not provide sufficient quantity, length, or firmness to realize a SEG.

Irradiated homologous costal cartilage has been used, but its use is still controversial in terms of resorption and infection.[2–13]

Many modified SEGs have been developed, in particular by Asian authors, to reduce the amount of autologous cartilage needed, in particular using residual septal cartilage or conchal cartilage.[3] Among these variants, the end-to-end positioning of the graft,[14] the septal half extension graft,[15] or the diagonal extension graft[16] are smart ways to obtain excellent results with a small amount of cartilage.

The effectiveness of the classic side to side SEG is well established and it was confirmed from the results of our study in the Group 2 regarding the significant improvement in the nasal lengthening, nasolabial angle, and tip projection.

Similar and statistically significant results were found also in the Group 1 in which authors used the CSP technique.

However, the preoperative values of the Group 2 were more important in terms of nasolabial angle and shortness of the nose. This could have been a possible selection bias because authors probably reserved a more aggressive approach to the patients of the Group 2 because of their worse preoperative conditions. The frequently used rib graft in this group patients prove this idea.

The very stable results obtained in the Group 1 treated with the CSP technique could be explained with the fact that the conchal cartilage was used only in the dorsal segment of the septal L-strut (septal bridge graft) where minor rigidity and sustain are needed compared with the caudal segment of the septum.

Chang[17] described a similar technique to correct difficult short noses. However, in this technique all the caudal septum was unanchored from the ANS and sutured forward making thus an advancement of the caudal septum, like an extracorporeal septoplasty. In our technique, there is a caudal rotation more than an advancement of the caudal septum. Paik and Chu[18] described the correction of the short nose deformity combining a SEG with a derotation graft, intended as an onlay graft on the dorsum anchored to the lower lateral cartilages to derotate the nasal tip.[19] Differently from a derotation graft, the septal bridge graft consisted of a graft integrated-in and constituent the L-strut, which can reinforce a weak midvault and widen the internal valve.[5]

In these grafts, stabilization is very important in achieving adequate long-term results. As described by Benavides et al,[10] absorbable sutures can be used to fix the graft because it has been demonstrated the same stability as the permanent sutures, with a lower rate of infection and extrusion. Either in case of SEG or septal bridge graft, the medial crura are sutured to SEG or to the rotated caudal septum. This "septalization" of the nasal tip increases tip stiffness, as described by Scattolin et al.[20] In the case of SEG, the fixation of this graft to the ANS was very rigid, while using bridge graft, the septal inferior segment of the divided septum is rotated in more caudal position on the pivot point of the fibrous connective attachment on the ANS without detaching the septum from it. This elastic connection allowed less stiffness of the nasal tip and this could be the reason why the patients reported less discomfort about stiffness in the Group 1 in which CSP technique was used.

Conclusion

The SEG still remains the more accepted method to treat short nose deformities. Considering that any technique to dismantle the "L" strut should be used with caution and the smallness of the Group 1, in authors' experience, the CSP technique could be considered a safe, reliable, and effective alternative technique in patients with short nose, thick, and straight caudal deviations and ANS in axis.

Although the minimum follow-up was only 1 year (mean: 18 months), no dorsal, infra tip lobule, and functional issues in the midvault have not been diagnosed nowadays.

However, further research is needed.

Advantages are (1) the saving of cartilage to be grafted (2 septal bridge graft vs. a SEG and 2 longer extended spreader); in Group 1, no costal cartilage grafts were necessary; (2) less nasal tip stiffness; the fibrous tissue between septum and ANS is left untouched and is not fixed with stitches; (3) the technique is as easy to execute and predictable as SEG.

Conflict of Interest
None declared.

References

1 Byrd HS, Andochick S, Copit S, Walton KG. Septal extension grafts: a method of controlling tip projection shape. Plast Reconstr Surg 1997;100(04):999–1010
2 Woo JS, Dung NPT, Suh MK. A novel technique for short nose correction: hybrid septal extension graft. J Craniofac Surg 2016; 27(01):e44–e48
3 Lin J, Chen X, Wang X, et al. A modified septal extension graft for the Asian nasal tip. JAMA Facial Plast Surg 2013;15(05):362–368
4 Kim SK, Kim HS. Secondary Asian rhinoplasty: lengthening the short nose. Aesthet Surg J 2013;33(03):353–362
5 Kim M-H, Choi J-H, Kim M-S, Kim SK, Lee KC. An introduction to the septal extension graft. Arch Plast Surg 2014;41(01):29–34
6 Kim SH, Choi JY. Surgical outcomes and complications of septal extension graft supported by 3D printed polycaprolactone plate. Laryngoscope 2020;130(07):1680–1685
7 Kucuker I, Engin MS, Aksakal IA, Yosma E, Demir A. Caudal septal support versus strut graft in achieving the desired lateral profile in rhinoplasty. J Craniofac Surg 2017;28(08):2076–2079
8 Toriumi DM. Discussion: Control of nasal tip position: quantitative assessment of columellar strut versus caudal septal extension graft. Plast Reconstr Surg 2019;144(05):781e–783e
9 Sawh-Martinez R, Perkins K, Madari S, Steinbacher DM. Control of nasal tip position: quantitative assessment of columellar strut versus caudal septal extension graft. Plast Reconstr Surg 2019; 144(05):772e–780e

10 Benavides G, Villate P, Malaver C. Caudal septal extension graft sutured with absorbable material and not fixed to the nasal spine region compared with the conventional fixation method: a retrospective study. Aesthetic Plast Surg 2019;43(03): 759–767
11 Park JH, Mangoba DCS, Mun SJ, Kim DW, Jin HR. Lengthening the short nose in Asians: key maneuvers and surgical results. JAMA Facial Plast Surg 2013;15(06):439–447
12 Koch CA, Friedman O. Modified back-to-back autogenous conchal cartilage graft for caudal septal reconstruction: the medial crural extension graft. Arch Facial Plast Surg 2011;13(01): 20–25
13 Welling DB, Maves MD, Schuller DE, Bardach J. Irradiated homologous cartilage grafts. long-term results. Arch Otolaryngol Head Neck Surg 1988;114(03):291–295
14 Gürsoy K, Teymur H, Kiziltay A, Hasirci N, Koçer U. Biomechanical analysis of a modified suture technique for septal extension grafts: transloop suture. J Plast Reconstr Aesthet Surg 2019;72 (11):1825–1831
15 Lee SH, Lee HB, Kang ET. Nasal elongation with septal half extension graft: modification of conventional septal extension graft using minimal septal cartilage. Aesthetic Plast Surg 2018;42 (06):1648–1654
16 Kang J-G, Ryu J. Nasal tip surgery using a modified septal extension graft by means of extended marginal incision. Plast Reconstr Surg 2009;123(01):343–352
17 Chang Y-L. Correction of difficult short nose by modified caudal septal advancement in Asian patients. Aesthet Surg J 2010;30 (02):166–175
18 Paik MH, Chu LS. Correction of short nose deformity using a septal extension graft combined with a derotation graft. Arch Plast Surg 2014;41(01):12–18
19 Paik MH, Chu LS. Correction of the short nose using derotation graft. Arch Aesthetic Plast Surg 2012;18:35–44
20 Scattolin A, Galzignato P-F, Longari F, D'Ascanio L. Septal extension graft in "closed" revision rhinoplasty: A simplified technique. Am J Rhinol Allergy 2017;31(04):260–264

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