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OBLIQUE SPLIT TECHNIQUE IN SEPTAL RECONSTRUCTION: CLINICAL CASE

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Abstract
The most crucial anatomical component for supporting the nose is thought to be the septum. Numerous possible causes could result in a significantly distorted or even reduced nasal septum. In reconstructive septal surgery, autogenous cartilage has long been regarded as the best grafting material for building the nose's architecture. Autogenous cartilage can be extracted from the auricle or the ribs in order to restructure the nasal skeleton. Costal cartilage is thought to be the best graft material for serious septal difficulties that require a substantial volume of tissues with severe structural abnormalities. The primary issue with costal cartilage grafting, aside from its benefits, has been warping. Straight costal cartilage grafts of different thicknesses can be obtained using the oblique split technique without running the risk of warping. Dorsal and caudal struts make up the segmental restoration of the L-strut using the oblique split approach, which allows for precise height modification of the repaired septum.

Keywords: Oblique split, surgery, rib, cartilage.

Introduction

Compared to alternative materials, rib cartilage has a low rate of problems and is an excellent material for reconstructive septorhinoplasty, particularly in revision surgery.

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Clinic case: Under endotracheal anesthesia, after treating the surgical field with an antiseptic three times, hydropreparation of the skin and mucous membrane of the nasal cavity is performed at the terminal part, with the addition of 0.1% epinephrine to a physiological solution on the back and wings of the nose. Using the acute dissection method, the terminal part leading to the anterior edge of the nasal bone is treated, and the skin on the back and sides of the external nose is cleaned (Figure 1). After mobilizing the skin flap, a rectangular incision is made along the anterior or superior edge of the nasal septum, which is completely detached subperichondrially, and the bent sections are removed. The bony part of the nasal septum is osteotomized (Figure 2).

Fig.1 The process of cleaning the skin on the back and sides of the external nose.

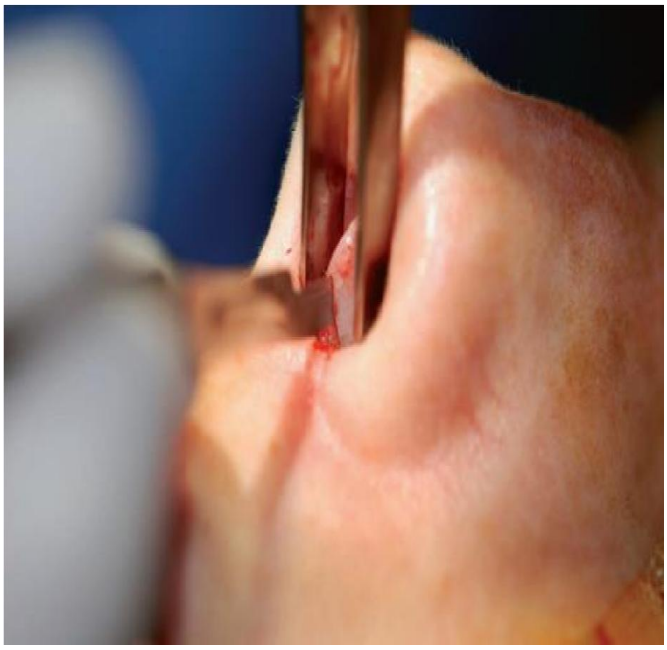

Fig.2 The process of osteotomy of the nasal septum and performing the opening osteotomy.

Access and examination for turbinate manipulation are performed by freeing the nasal passages from the deviated nasal septum. Under the control of a 4 mm Karl Storz endoscope (Germany) with a 300-degree viewing angle, lateralization of the inferior turbinates and, when necessary, the middle turbinates is performed, followed by electrocoagulation and resection of their posterior parts according to indications. In cases where bullous changes are present in the nasal turbinates, the bullae are opened, and then conchal resection is performed. Thus, after completing this stage, breathing is improved.

Furthermore, according to the previously marked areas, an oblique incision is made on the skin and subcutaneous tissue of the right chest area, approximately 5 cm in size, 2 cm posterior to the projection of the 7th and 8th ribs along the edge of the rib cage. Access to the rib head is then achieved through blunt dissection of the rectus abdominis muscle (Figure 3). The rib head is divided longitudinally and exposed. A bone-rib head reconstruction is performed using a segment of the 7th or 8th rib, and depending on the required size of the frame, the remaining rib head surfaces are smoothed. The wound is sutured layer by layer with interrupted sutures. Active drainage is placed.

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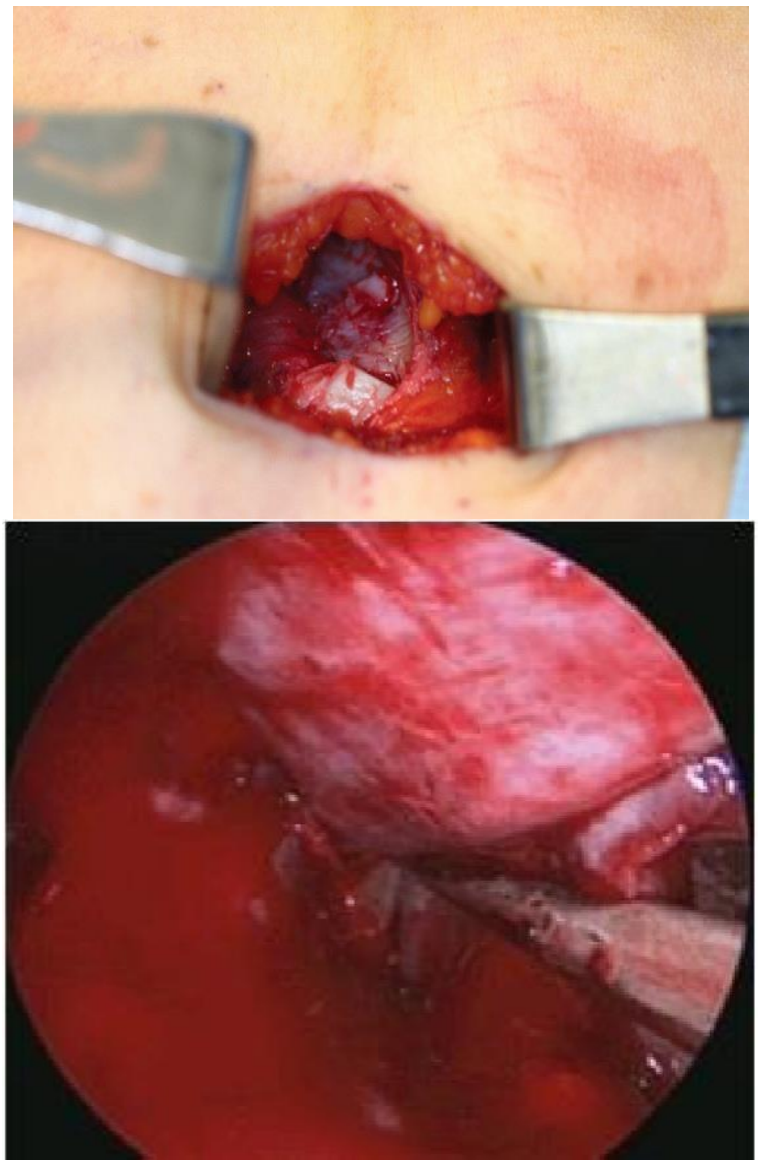

Fig. 3 An oblique incision is made on the skin and subcutaneous tissue of the right chest area.

The obtained bone-rib autograft is cleaned, fragmented, and the structural components of the nasal rib framework are shaped: the posterior part of the nose, the caudal part of the nasal septum, and the less curved rib. Two flat plates are formed, measuring 2.5 x 0.5 cm and 1.5 x 0.5 cm (Figure 4).

Fig.4 Γ-shaped frame is created from the rib.

The plates are secured together using monofilament suture material, forming a T-shaped frame. A shorter plate is inserted between the two longer plates, which are tightly secured together. The simulated L-shaped rib is positioned with the short section terminating at the upper jaw, and the long plates are inserted between the triangular and rectangular ribs at the upper section, thereby widening the angle of the nasal inner framework. The graft is fixed with monofilament thread. The short section of the graft is placed against the periosteum of the upper jaw. For additional fixation, a temporary modeling suture is applied through the skin at the base of the nasal septum (Figure 5).

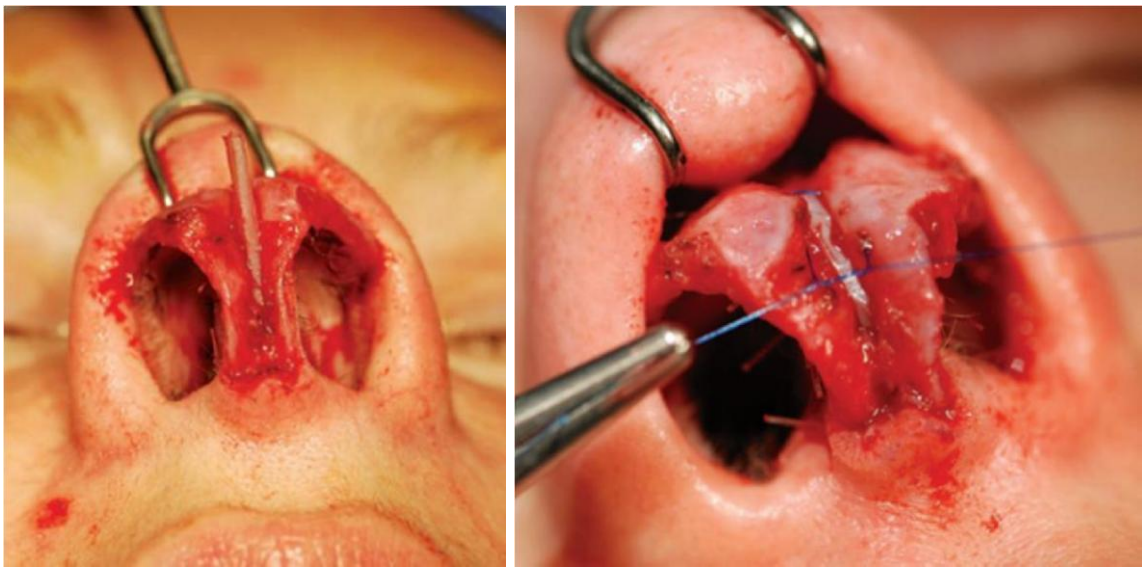

Fig.5 The process of suturing the rib.

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If necessary, part of the rib is fragmented into chips. A 3 cm long, cylindrical-shaped, hermetically sutured pouch is created from the muscle of the diaphragm or the rectus abdominis, into which the rib chips are placed. The graft is then positioned in the sagittal direction at the posterior part of the nose (Figure 6).

Fig. 6 The graft is placed in the sagittal direction to the posterior part of the nose.

After skeletonizing the nasal bones, bilateral and paramedian nasal osteotomies are performed, aligning the bone pyramid into the correct asymmetrical position according to the indications. The wounds are sutured with monofilament thread. Intranasal silicone splints, secured to the nasal septum with monofilament thread, are placed in the nasal passages. The nasal passages are tamponaded with "Tempograss" bandages. A plaster cast is applied to the external nasal area.

Conclusion

Because OSM included both the central and peripheral rib cartilage, it was possible to get substantial amounts of graft material without running the risk of warping.

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