Extracorporeal Septoplasty

Complications and New Techniques

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**Objectives:** To report our complication rates during extracorporeal septoplasty (ECS) and to describe a new fixation and splinting technique we developed to simplify stable midline fixation of the neocaudal septum. Correction of the caudally deviated septum remains one of the more difficult surgical goals in functional nasal surgery.

**Methods:** A retrospective medical record review of patients undergoing ECS at our institution. We report our complications and describe a new technique for ECS.

**Results:** Forty-six patients underwent ECS from June 1, 2007, through April 30, 2010. Twenty-six of these patients underwent primary surgical repair, whereas 20 presented for revision surgery from outside facilities. Ten revision cases required an ear cartilage graft, and 5 required a rib graft. The overall complication rate was 9% (4 patients), with 4% (2 patients) each for minor and major complications.

**Conclusions:** Complication rates of ECS are similar to those of endonasal septoplasty. Stable midline fixation of a reconstructed neocaudal septum is possible with a new technique that relies on novel splinting instead of suture fixation to the midline of the nasal spine.

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At least 3 variations of caudal septum deviation can be diagnosed by means of anterior rhinoscopy and further detailed by gloved palpation with the thumb and forefinger. The first type is when the caudal septum itself is palpated to be relatively straight from the anterior septal angle to the posterior septal angle but the posterior sepal angle has slipped off the nasal spine and thus protrudes off the midline into the caudal nasal passageway. In these cases, the caudal septum can frequently be brought back into the midline with a relatively straightforward endonasal septoplasty using a "swinging door" technique. The second variation is when the septum comes off the nasal spine at an angle of greater than 30° in the axial plane. On palpation, the septum may be flat or cup shaped. In these more extreme septal deformities, it can be difficult to address the septum by conventional open or endonasal methods, and thus an extracorporeal technique may be more appropriate. The final and perhaps most challenging variation of caudal sepal deformity is when the surgeon appreciates that the caudal septum is not straight from the anterior to the posterior septal angle but rather feels like a curved bowl or a C-shaped septum between the thumb and forefinger. Extracorporeal septoplasty (ECS) is particularly helpful in these cases because, without building a neocaudal septum, the cup-shaped curvature is difficult to correct surgically or will frequently return postoperatively.

Extracorporeal septoplasty for correction of the severely deviated caudal septum was first reported by Gubisch in 1995. He described complete removal of the entire cartilaginous septum, which he then straightened and returned to the nose. He described 2 areas of fixation to secure the newly reconstructed septum back into the native nose. The first area of fixation is the caudal end of the nasal bones, where the cephalic dorsal septum is reattached. He accomplished this by suturing the reconstructed septum to the upper lateral cartilage or by placing a transcutaneous U-suture. The second point of fixation is the maxillary crest, where the posterior septal angle is reattached. He accomplished this by drilling a hole through the nasal spine and suturing the newly reconstructed neocaudal septum down to the maxillary crest. Although this technique was highly effective for straightening a deformed septum and replacing it in the nose to restore nasal function, it has been criticized for being very technically demanding to execute. There was also a risk of aesthetic complications, especially in the area of transition from the bony dorsum to the reconstructed cartilaginous dorsum.

In 2006, Most modified Gubisch’s technique to simplify the reconstruction and decrease the aesthetic complications along

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