Endoscopic septoplasty: Why, how and when

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Introduction
Septal pathology contributes to almost all nasal deformity. In a high percentage, septal deformities are the main cause of functional complaints. They are also at the root of aesthetic complaints. We may quote Cottle, [1] who said (As the septum goes, so goes the nose). So, correction of septal deformity is one of the basic procedures in functional reconstructive nasal surgery. Correction of external nose is impossible without septal repair. In a sense, the septum is the (Soul) of the human nose. The application of endoscopic techniques to correct septal deformities was initially described by: lanza [2] and Stammbarger. [3] The advances in endoscopic techniques have facilitated endoscopic septoplasty. Many authors (Hundreds) wrote on endoscopic septoplasty,
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Dislocated caudal end 45 cases (45%), fracture septum 8 cases (8%), vomeral spur 28 cases (28%) and basal crest 19 cases (19%). Endoscopic sinus surgery is done in 33 patients and rhinoplasty in 12 patients. Turbinoplasty is done in all cases. Male: female ratio was 3:1 and the age range was 10-48 years old with average 23. Under general anaesthesia (Hypotensive protocol) Kottle septoplasty was performed endoscopically. We follow basic of septoplasty by Kottle:

1. Approach
2. Mobilization
3. Resection
4. Repositioning
5. Reconstruction
6. Fixation

How I do it

Topical oxymetazoline was applied for decongestion; 1% lidocaine with 1:200,000 epinephrine was injected subperichondrially along the septum and at the greater palatine foramina bilaterally.

a- Incision: Caudal septal incision (Hemi transfixion). (Figs. 1a,b).

b- Flap elevation: Subperichonrium using septal dissector (Figs. 2a,b).

C. Nasal speculum; either self retaining speculum is used or assistant holding it. Zero telescope 4 mm is introduced through the dissected area and dissection is continued exposing bony and cartilaginous septum (Figs 3,4).
d. Follow the basics by creating antrosuperior tunnel (Unilateral or bilateral) to mobilize cartilaginous septum. Then postrosuperior tunnel to mobilize bony septum (Figs 5-7).

Vertical (Figs 8a,b) and horizontal condrotomy (Figs 9a,b) to create a swinging door technique (Cottel)
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Fig 9a

Resection of the deviated part (Vertical strip, horizontal strip, crest, deviation and/or spur). (Fig 10a & b)

Fig 9b

Reconstruction with bone and/or cartilage is done. Mattress sutures across the septum (Transfixing sutures) are done. Finally the wound is closed (Fig. 11).

Fig 10a

No packing. The patient is discharged in the same day (A day case). Follow up weekly in the first month and monthly for 6 months.

Fig 10b

Results

One hundred patients of deviated nasal septum were admitted in the department of otorhinolaryngology, Ahmed Maher Teaching Hospital for endoscopic septal surgery from January 2010 to November 2012. Including cases of: dislocated caudal end 45 cases (45%) (Figs. 12a, b), fracture septum 8 cases (8%) (Fig. 13), vomeral spur 28 cases (28%) (Fig 14a, b, c, d & e) and basal crest 19 cases (19%) (Fig. 15). In 33 patients endoscopic sinus surgery is done and rhinoplasty in 12 patients. Turbinoplasty is done in all cases. Male : female ratio was 3:1 and the age range was 10-48 years old with average age 23. Nasal obstruction was the commonest symptom, being found in 82 (82%) patients. The duration of presenting symptoms varied from 8 months to 8 years, with a mean duration of 22 months. All of these patients were treated medically before surgery with topical steroids sprays, mucolytic. Preoperative endoscopic nasal evaluation and CT scan were done. In all patients there were satisfactory subjective results with patent airway, improved fitness and reduced upper respiratory tract infection attacks as experienced by the patients. There was one case of septal hematoma (localized anterior and evacuated under local anaesthesia). No cases of septal abscess, No perforation, No supratip depression, No synchia. Under correction occurred in 9 case and there were satisfaction by the patients and no over correction.
Fig 12a Pre-operative

Fig 12b Post-operative

Fig 13 Fracture septum

Fig 14a

Fig 14b

Fig 14c
DISCUSSION

Septoplasty is one of the basic procedures in ENT practice. It is evolved in the last decades from total cartilage excision to classic septoplasty of Cottle. [1] The wide endoscopic practice and availability facilitate the idea of endoscopic septoplasty. All the previous authors do a limited septoplasty (Figs. 16a,b,c).

Which is suitable to a localized deviation or a very small spur which is not the case in most situation. So we applied the endoscope to do basic Cottle endoscopically. WHY?

WHY NOT?

• High resolution
• Good illumination
• Zooming
• Very precise
• Minimal invasive
• Not time consuming
WHEN?
In all cases of septal pathology:
- Simple deviation
- Difficult cases
- Septal fracture
- Septal dislocation
- Limited (localized) deviation
- Revision septal surgery
- Septorhinoplasty
- With FESS
- Teaching
- Documentation

Septoplasty is one of the common operations performed in ENT theatres for relieving nasal airway obstruction, often in conjunction with other nasal and sinus procedures, such as aesthetic rhinoplasty and functional endoscopic sinus surgery (FESS). The aim of our endoscopic septoplasty is safe permanent correction of deviation without the need for exposing excessive bone and cartilage, thereby improving healing time and decreasing tissue trauma. In our study the improvement in nasal obstruction (Main symptom) is 96%, which is comparable to traditional septoplasty 54%. [9] Also our complication was 1.8% and complication rate by conventional septoplasty is 5% and limited endoscopic septoplasty is 2.08%. [5]

Conclusion
Endoscopic septoplasty is very safe & effective either alone or with other nasal operations. It improves illumination and accuracy. Also is very valuable and indispensable in teaching and documentation. Following the basic rules in simple as well as difficult cases is challenging.

References