

Case Series

A simple cartilage sparing “Madhumani technique” of endoscopic septoplasty

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ABSTRACT

Deviated nasal septum is commonest cause of nasal obstruction, noisy breathing, sinusitis, sleep disturbance, headache, etc. Endoscopic septoplasty gives better results and better relief to the patients than age old procedure like submucosal resection (SMR). In our study, a total of 317 patients who were undergoing septoplasty and turbinectomy were included over the period of 3 years. 143 patients were female and 174 patients were male. All presented with complaints of breathing difficulty and nasal block. All cases were done by following our protocol of pre-op and post op care. Patients were followed up with 4 post op visits over a period of 6 months. All patients had symptomatic relief by 2 weeks post operatively. No major complications were encountered per operative and post operative. Minor complications like asymptomatic adhesions seen in very few patients which were released during the follow up visit. None of the patient needed revision surgery. This paper describes the simple endoscopic septoplasty technique followed by us in our institute. With our experience we framed simple, easy protocol of cartilage sparing “madhumani technique” of endoscopic septoplasty which can be easily followed and good results can be achieved by using septal splints as necessary.

Keywords: Endoscopic septoplasty, Simple technique, Cartilage sparing technique, Madhumani technique

INTRODUCTION

Septoplasty is one of the commonest procedure done in ENT practice. It has evolved from aggressive procedure towards procedure which is simple, safe, and stable procedure with better results. Integration of endoscopy into septoplasty has helped surgeons to identify septal deviations and precise correction.¹ Now worldwide septoplasty is done widely with the help of endoscope. Endoscopic septal correction was first described by Lanza et al and Stamberger.^{2,3} It is a minimally invasive technique giving excellent visualization thus minimising trauma to flaps.⁴ Endoscopic septoplasty has been reported to be valuable in revision cases.^{5,6}

CASE SERIES

We have operated 317 patients with nasal obstruction from January 2021 to march 2024 among whom 143 (45.11%) were females, 174 (54.89%) were males. All patients undergoing septoplasty is completely evaluated with CT PNS, blood investigations and preanesthetic checkup. Almost all cases were done under local anaesthesia unless contraindicated or patient wants general anaesthesia. All cases were done under endoscopic view, only in cases with gross anterior deviation, incision is given over the caudal end of septum with the help of headlight and rest of the procedure is done under endoscopic guidance.

Pre op preparation

Pre-op medications tab Aten 50 or 25 and tab alprazolam 0.5 or 0.25 given night before surgery. Moffets block is given to all the patients 15 minutes before surgery and nasal packing is done with soft wool soaked in 4% xylocaine and 1 in 100000 adrenaline solution.

Technique

Diagnostic nasal endoscopy is done to assess the nasal cavities. Infiltration is given to the septum on both sides with 2% xylocaine solution (8 ml), 8 drops of adrenaline, which is diluted with 8 ml normal saline making it 16 ml of 1% xylocaine solution (8-8-8 solution). Incision is always given on the left side (Figure 1) just behind the columella except in cases of right anterior dislocation. Perichondrial and periosteal flaps elevated on left side with freers elevator (Figure 2).

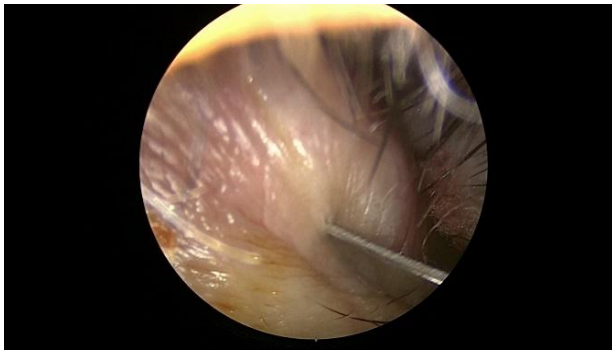


Figure 1: Skin incision.



Figure 2: Flap raising left side.

Cartilage is incised at the level of mucosal incision (Figure 3) and opposite side perichondrial and periosteal flaps are elevated with freers elevator (Figure 4). All the tunnels- superior, inferior, anterior and posterior are elevated to have a 360o view of septal deviations on both sides. We believe cottles tunnels have no validity in modern septoplasty. Inferior strip of cartilage at maxillary crest is separated with freers elevator and removed (Figure 5). Bony cartilagenous junction is separated (Figure 6). Perpendicular plate of ethmoid is cut with bone cutter just above the deviation (Figure 7) and the

deviated part is removed with the help of bone nibbler (Figure 8). Inferior maxillary crest is chiseled and removed out (Figure 9).

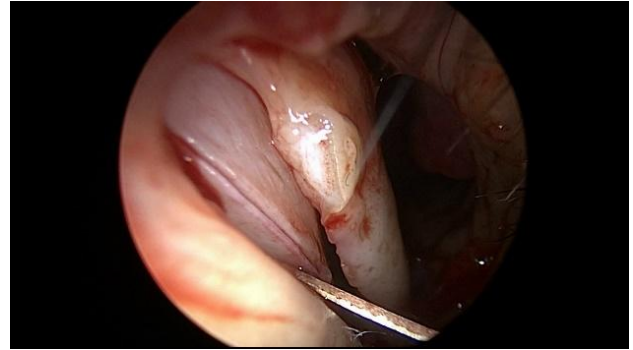


Figure 3: Cartilage incision.



Figure 4: Flap raising on right side.

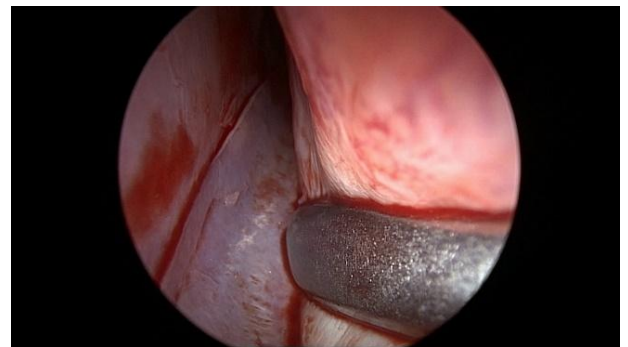


Figure 5: Spur along floor removed.



Figure 6: Bony cartilage junction release.

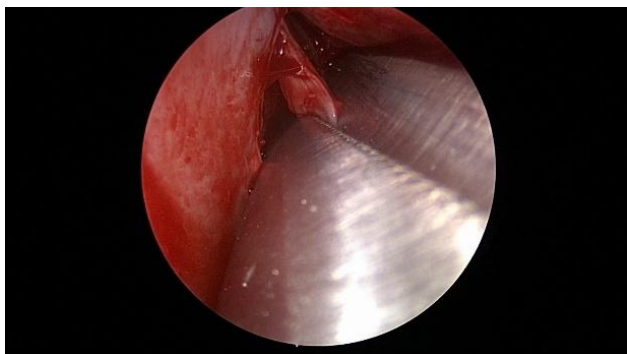


Figure 7: Cutting posterior bony spur.

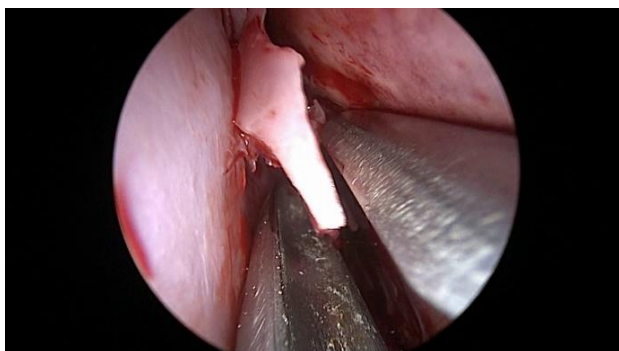


Figure 8: Removing bony spur.

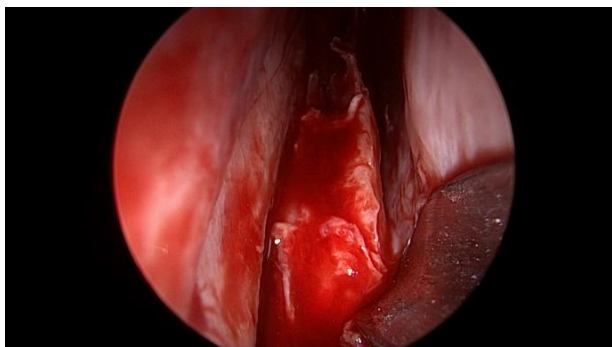


Figure 9: Floor spur removing.

Thus, the septum is released anteriorly, inferiorly and posteriorly making the flexible septum straight and malleable bringing the whole cartilage into view. Majority of cartilage is preserved and kept in midline making this a cartilage sparing procedure. Any anterior protruded excess cartilage is trimmed. This is followed by bilateral partial turbinectomy (Figure 10). A splinting suture is applied by taking bite through septal cartilage. Septal splints are applied (Figure 11) to keep septum in midline if necessary. Both nasal cavities are packed with merocel nasal pack for 36-48 hrs. Patients are discharged after pack removal and saline nasal douching along with antibiotics and decongestants are given to the patients for one week. Post op follow ups were done at the end of 1st week, 3rd week and 8th week. A total of 317 patients underwent septoplasty and turbinectomy in our hospital from January 2021 to march 2024, out of which 143

(45.11%) were females and 174 (54.89%) were males. Lowest age is 13 yrs and highest age is 62 yrs.



Figure 10: Turbinectomy.

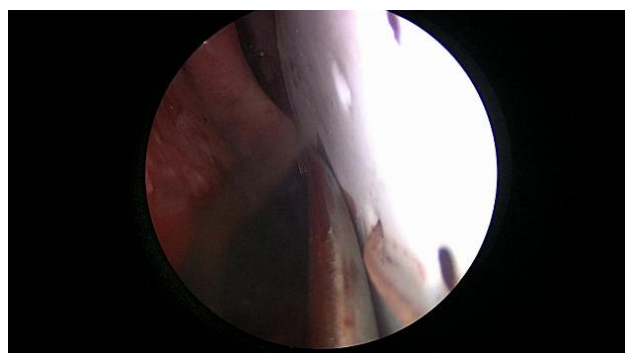


Figure 11: Septal splints.

DISCUSSION

Septoplasty is the most common procedure in ENT practice. Considered “bread and butter” of ENT surgeon. Use of endoscope gives an advantage of greater visibility of septal pathology minimizing trauma to mucoperichondrial flaps.^{4,7} Endoscopy aids in complete correction of deviated septum preventing recurrence. Our technique of septoplasty is similar to that described in literature. But our technique is aimed towards the beginners and budding ENT surgeons who are confused and scared of other techniques. All the tunnels are elevated to clearly visualize 360° of septal pathology to ensure complete correction. Tears are inevitable in case of gross and sharp spurs; it is even encouraged in our institution to have a controlled tear in mucoperichondrium to prevent hematoma formation if both the flaps are intact. Septal splints decrease chances of recurrence and prevent more substantial tear and inadvertent iatrogenic trauma.⁸

CONCLUSION

Complications like, recurrence, septal hematoma, septal abscess etc. can be prevented by our technique. Same procedure can be followed in cases of high septal deviations and revision cases for optimal correction.

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Ethical approval: Not required

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