COMPARATIVE STUDY OF COMPLICATIONS IN ENDOSCOPIC SEPTOPLASTY VERSUS CONVENTIONAL SEPTOPLASTY

P. Rambabu[1], S. Surya Prakasa Rao[2], T. Leela Prasad[3], K. S. R. Chanakya[4]

[1]Assistant Professor, Department of ENT, Andhra Medical College, Visakhapatnam, Andhra Pradesh. India.
[2]Professor, Department of ENT, Andhra Medical College, Visakhapatnam, Andhra Pradesh. India.
[3]Assistant Professor, Department of ENT, Andhra Medical College, Visakhapatnam, Andhra Pradesh. India.
[4]Postgraduate, Department of ENT, Andhra Medical College, Visakhapatnam, Andhra Pradesh. India.

ABSTRACT

BACKGROUND

The objectives of the study are- 1) To study the gender distribution of Deviated Nasal Septum (DNS). 2) To study the incidence of DNS in different age groups. 3) To compare the complications of septoplasty in endoscopic versus conventional type.

MATERIALS AND METHODS:

This study was conducted in Govt. ENT Hospital of Andhra Pradesh, during a period of 11 months from April 2017 to Feb 2018. The total number of surgeries performed during this period were 926 for ear, nose, throat & head and neck disorders. Out of this, 100 patients had undergone septoplasty for deviated nasal septum by endoscopic and conventional type, 50 each respectively.

The study is performed in gender variation and age distribution for total population. The complications like synechiae, septal haematoma, abscess, perforation, saddle nose, tip collapse, residual deviation and rarely CSF rhinorrhoea are compared in these conventional and endoscopic septoplasties.

RESULTS

DNS affected more in males than in females in the ratio of 69:31. The age group of 15-24 yrs. (45%) was affected more, later 25-34 yrs. (30%) and the least was 55-64 yrs. (2%). Synechiae is the most common complication in both endoscopic and conventional septoplasty (E:10% :: C:12%). Residual deviation is the second most common complication (E:4%:: C:8%). Septal perforation (E:2% ::C:4%). Septal haematoma, Supratip depression and saddle nose resulted only in conventional septoplasty with each 2%.

CONCLUSION

Endoscopic septoplasty is found to be superior to conventional septoplasty as the complications are fewer. Hence it is advised to younger surgeons to start septoplasty with conventional technique and later turn to endoscopic septoplasty once they are experienced with endoscopes.

KEYWORDS

Deviated Nasal Septum, Conventional Septoplasty, Endoscopic Septoplasty, Complications of Septoplasty.

HOW TO CITE THIS ARTICLE: Rambabu P, Surya Prakasa Rao S, Leela Prasad T, et al. Comparative study of complications in endoscopic septoplasty versus conventional septoplasty. J. Evid. Based Med. Healthc. 2018; 5(44), 3080-3083. DOI: 10.18410/jebmh/2018/629

BACKGROUND

Deviated nasal septum (DNS) is an important and commonest cause for nasal obstruction. The commonest causes of DNS are developmental factors like intrauterine compressions due to cephalo-pelvic disproportion, birth trauma during parturition, later unnoticed trauma during childhood and other injuries of the nose. Deviated nasal septum with nasal obstruction to the airway and with complicating rhinosinusitis and nasal polyposis is a common entity seen in ENT Out Patient Department. Rarely, deviated nasal septum is seen in mass, benign and malignant lesions of the nose like rhinosporidiosis, adenocarcinoma and aesthesioblastoma. DNS with external deformities like deviation of nose, saddle nose, crooked nose and hump of the nose are also added to the list as the cosmetic importance is heightened now a days. Septoplasty is one of the oldest and commonest operation which is performed for DNS in the nose. As the septum goes, so the nose, hence in Septorhinoplasty[1] septum has to be addressed according to the defect.

Deviation may involve cartilage, bones or both. It may present as C or S shaped deformity, spur and caudal dislocation. The common symptoms of DNS are 1. nasal obstruction 2. Epistaxis 3.External deformity 4.Headache 5.hypo/anosmia and 6.rhinosinusitis with or without polyposis. Even though in different surgeries like submucous resection (SMR), septoplasty, Metzenbaums operation are

Financial or Other, Competing Interest: None.
Submission 02-10-2018, Peer Review 09-10-2018,
Acceptance 22-10-2018, Published 25-10-2018.
Corresponding Author:
Dr. S. Surya Prakasa Rao,
Professor, Department of ENT,
Andhra Medical College,
Visakhapatnam, Andhra Pradesh.
E-mail: drssprao@gmail.com
DOI: 10.18410/jebmh/2018/629

described yet the surgeon has to mix up these techniques to correct the deviation in each case accordingly.

In the conventional type,[2] headlight, Thudicum nasal speculum, long bladed St. Clair Thompson's speculum and Ballinger's swivel knife are used. In endoscopic septoplasty,[3,4,5,6] both 0^0 and 30^0 endoscopes, camera and monitor are used. Of course, Freer's and Cottle's elevators, Luc's forceps, Cottle's gouze and hammer are used in both conventional and endoscopic types of septoplasty.

The usual complications [7] come across are synechiae, septal hematoma, septal abscess, septal perforation, residual deviation, supra tip depression, saddle nose, tip collapse and rarely CSF rhinorrhoea.

Aims and Objectives

1. To study the gender distribution of DNS.
2. To study the incidence of DNS in different age groups.
3. To compare the complications of septoplasty in endoscopic versus conventional type.

MATERIALS AND METHODS

This study was conducted in Govt. ENT Hospital of Andhra Pradesh State during a period of 11 months i.e., April 2017 to Feb 2018. The total number of surgeries performed during this period were 926 for ear, nose, throat & head and neck disorders. Out of this, 100 patients had undergone septoplasty for deviated nasal septum by endoscopic and conventional type, 50 each respectively.

All these study population were undergone thorough clinical examination with headlight and direct nasal endoscopy. Routine haematological investigations and radiological investigations like X ray PNS and CT PNS were done. Most of the patients undergone surgery under local anaesthesia except those who were apprehensive and some adolescent ones.

In the conventional type, headlight, Thudicum nasal speculum, long bladed St. Clair Thompson's speculum and Ballinger's shivel knife are used. In endoscopic septoplasty, both 0^0 and 30^0 endoscopes, camera and monitor are used. Of course, Freer's and Cottle's elevators, Luc's forceps, Cottle's gouze and hammer are used in both conventional and endoscopic types of septoplasty. In all cases of our Govt. institution we packed the nose postoperatively with ribbon gauze impregnated with soframycin ointment. We removed the pack after 48 or 72 hours depending upon the severity of bleeding during surgery. The cases are reviewed after 7 days, 15 days and 1 month postoperatively.

The total number of 100 patients with deviated nasal septum in the age between 15-64 were kept in this study were divided into two groups with each 50. Group 1 patients were treated with endoscopic septoplasty and Group 2 with conventional type of septoplasty with head light.

The study was conducted in gender variation and in age distribution for total population. The complications occurred in each group are identified separately. These complications like synechiae, septal hematoma, abscess, perforation, saddle nose, tip collapse, residual deviation and rarely CSF rhinorrhoea are compared from conventional septoplasty to endoscopic septoplasty.

Inclusion Criteria

1. Deviated nasal septum-C shaped or S shaped.
2. Deviated nasal septum with spur.
3. Deviated nasal septum with Caudal dislocation.

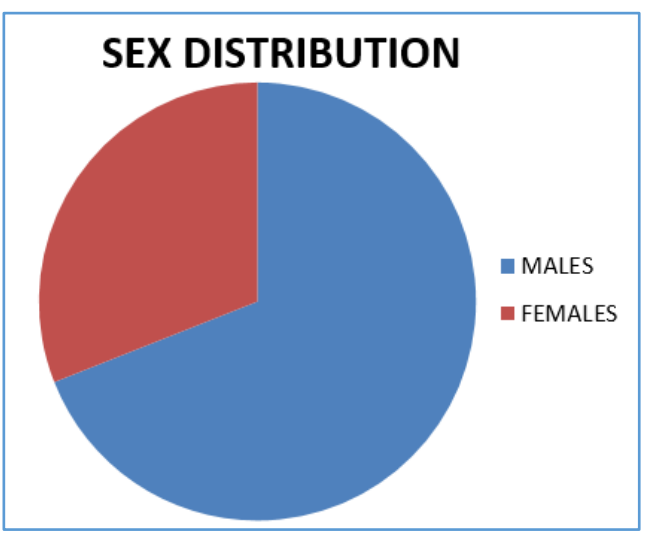
Exclusion Criteria

1. Revision Septoplasty.
2. DNS with external deformity.
3. DNS with Nasal polyposis.
4. DNS with granulomatous diseases
5. DNS with Tumours of the nose.
6. Less than 14 and more than 65 years of age.

RESULTS

Sl. No.	Sex	Number	Percentage
1.	Male	69	69
2.	Female	31	31

Table 1. Sex Distribution



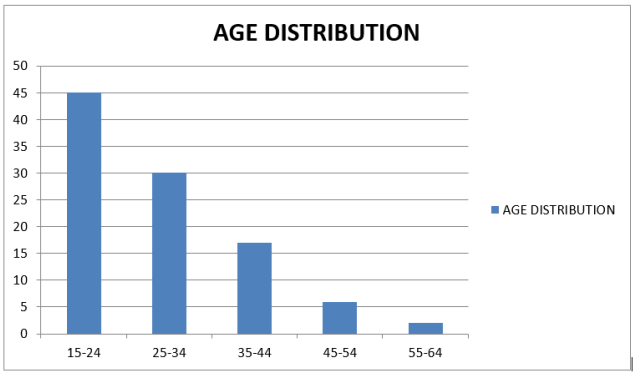
Graph 1

In the total study population of 100, males were affected with DNS, more than females in the ratio of 2.22:1 (69::31)

Sl. No.	Age	Number	Percentage
1.	15-24	45	45
2.	25-34	30	30
3.	35-44	17	17
4.	45-54	6	6
5.	55-64	2	2

Table 2. Age Distribution

Here it was observed that 15-24 age group was commonly involved with DNS, later 25-34 age group was identified as second most, and 55-64 age group was least affected.



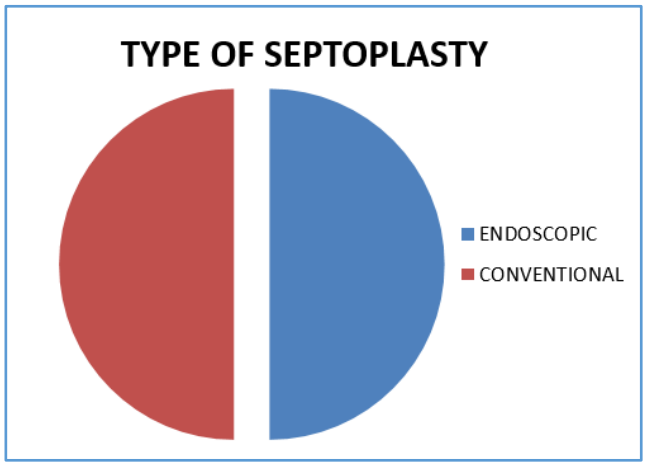
Graph 2

Sl. No.	Type	Number	Percentage
1.	Endoscopic	50	50
2.	Conventional	50	50

Table 3. Type of Septoplasty

The total number of 100 patients were divided into two groups with equal number patients i.e., 50 each.

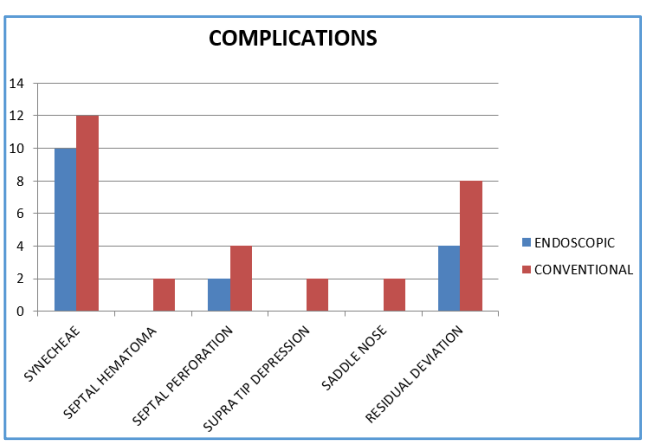
Group 1 with 50 patients were undergone endoscopic septoplasty and Group 2 with 50 patients underwent with conventional septoplasty.



Graph 3

Complications	Endoscopic		Conventional		p value
	Number	Percent	Number	Percent	
Synechiae	5	10	6	12	0.09
Septal Hematoma	0	0	1	2	>0.05
Septal Abscess	0	0	0	0	
Septal Perforation	1	2	2	4	0.07
Supratip Depression	0	0	1	2	>0.05
Saddle Nose	0	0	1	2	>0.05
Tip Collapse	0	0	0	0	
Residual Deviation	2	4	4	8	0.08
CSF Rhinorrhoea	0	0	0	0	

Table 4. Complications



Graph 4. Complications

DISCUSSION

In this study of the total population, males evolved in major number suffering with deviated nasal septum than females, in the ratio of 2.22:1 (69:31). In Satyaki et al,[8] male female ratio is found to be 3.17:1 which is slightly higher than our observation. In Kaushik et al.[9] male female ratio is 2.75:1 which is little higher than our results. As the allergy is more prevailing in our coastal Andhra Pradesh the adolescent group (15-24 yrs.) -45% and young adults (25-34 yrs.)- 30% are more suffering with nasal obstruction due to DNS than other age groups. In Satyaki et al,[8] 40% of young adults had attended which is almost similar to our study as our age distribution is different from them.

The complications occurred in endoscopic septoplasty and conventional septoplasty were identified separately to compare and also to select the preferred method of choice in septoplasty.

Complications-

1. Septal Hematoma in endoscopic is 0% and in conventional 2%. In Kaushik et al[9] it is 13.33% in conventional and 0% in endoscopic.
2. Synechiae in endoscopic is 10% and in conventional is 12%. In Kaushik et al[9] Synechiae 3.33% in Endoscopic and 10% in Conventional. In Sathyaki et al[8] 0% in endoscopic and 16% in conventional. In Gulati et al,[10] 8% in endoscopic and 36% in conventional. In Gupta et al,[11] 0% in endoscopic and 8% in conventional. In Bothra and Mathur[12] et al, 25% in endoscopic and 5% in conventional. This variations in different studies

depends upon the post-operative care taken by the surgeon and his team.

3. Residual septal deviation in our observation is 4% in endoscopic and 8% in conventional. In Kaushik et al[9] 3.33% in endoscopic and 6.67% in conventional, which is similar to ours. In Gulati et al,[10] 8% in endoscopic and 20% in conventional. In Gupta et al,[11] 0% in endoscopic and 4% in conventional. In Bothra and Mathur et al,[12] 15% in endoscopic and 10% in conventional, is in favour to conventional which differs with us.
4. Septal Perforation evolved as a complication with us, 2% in endoscopic and 4% in conventional. In Kaushik et al[9] 0% in endoscopic and 6.67% in conventional.
5. Supra tip depression is found in conventional septoplasty which is about 2% and in endoscopic 0%.
6. Saddle nose is seen in conventional septoplasty which is about 2% and in endoscopic 0%.

We didn't encounter septal abscess, tip collapse and CSF rhinorrhoea postoperatively

CONCLUSION

Complications are less in endoscopic septoplasty than in conventional traditional septoplasty. The most common complication is synechiae (E:10%: C:12%), followed by residual deviation (E:4%: C:8%), septal perforation (E:2%: C:4%), septal haematoma (E:0%: C:2%), , Supra tip depression (E:0%: C:2%) and saddle nose (E:0%: C:2%). We didn't encounter septal abscess, tip collapse and CSF rhinorrhoea postoperatively in any patients.

Hence it is advised that young surgeons should start septoplasty in conventional technique. Later they should opt for endoscopic septoplasty which gives best results with less complications in patients suffering with deviated nasal septum even though statistically it doesn't show much difference.

REFERENCES

[1] Park DH, Kim TM, Han DG, et al. Endoscopic-assisted correction of deviated nose. Aesthetic Plast Surg 1998;22(3):190-195.
[2] Marshall AH, Johnston MN, Jones NS. Principles of septal correction. J Laryngol Otol 2004;118(2):129-134.
[3] Nayak DR, Balakrishnan R, Murthy KD. An endoscopic approach to the deviated nasal septum – a preliminary study. J Laryngol Otol 1998;112(10):934-939.
[4] Prepageran N, Lingham OR. Endoscopic septoplasty: the open book method. Indian J Otolaryngol Head Neck Surg 2010;62(3):310-312.
[5] Cantrell H. Limited septoplasty for endoscopic sinus surgery. Otolaryngol Head Neck Surg 1997;116(2):274-277.
[6] Lanza DC, Kennedy DW, Zinreich SJ. Nasal endoscopy and its surgical application. In: Lee KJ, ed. Essential otolaryngology: head and neck surgery. 5th edn. New York: Medical Examination 1991.
[7] Siegel NS, Gliklich RE, Taghizadeh F, et al. Outcomes of septoplasty. Otolaryngol Head Neck Surg 2000;122(2):228-232.
[8] Sathyaki DC, Geetha C, Munishwara GB, et al. A comparative study of endoscopic septoplasty versus conventional septoplasty. Indian J Otolaryngol Head Neck Surg 2014;66(2):155-161.
[9] Kaushik S, Vashistha S, Jain NK. Endoscopic vs conventional septoplasty: a comparative study. Clin Rhinol An Int J 2013;6(2):84-87.
[10] Gulati SP, Wadhera R, Ahuja N, et al. Comparative evaluation of endoscopic with conventional septoplasty. Indian J Otolaryngol Head Neck Surg 2009;61(1):27-29.
[11] Gupta M, Motwani G. Comparative study of endoscopic aided septoplasty and traditional septoplasty in posterior nasal septal deviations. Indian J Otolaryngol Head Neck Surg 2005;57(4):309-311.
[12] Bothra R, Mathur NN. Comparative evaluation of conventional versus endoscopic septoplasty for limited septal deviation and spur. J Laryngol Otol 2009;123(7):737-741.