ORIGINAL ARTICLE

Comparison of Complication in SMR vsSeptoplasty

MUHAMMAD SALEEM SHEIKH[1], ANEES UR REHMAN[2], NASIR WAKEEL[3], *YASIR*[4]

ABSTRACT

Background: There is no satisfactory medical treatment for deviated nasal septum, the treatment is surgical, to correct the defect and to prevent complications. Sub mucous resection (SMR) and septoplasty are the commonly used technique for deviated nasal septum in the worldwide.
Aim: To compare the outcome (in terms of complications) between submucous resection (SMR) and septoplasty in deviated nasal septum.
Methods: A total of 142 patients with deviated nasal septum of age 15-35 years of both gender were included. Patients with h/o nasal surgery, nasal trauma and any bleeding disorder were excluded. Patients were randomly assigned into two groups based on Lottery method in Group A and Group B.Septoplasty was performed for Group A patients while submucous resection was done for Group B patients. Patients were frequently visited post-operatively and final outcome was noted at 7th post-operative day.
Results: The mean age of patients in group A was 26.31±5.89 years and in group B was 25.94±5.25 years. Out of these 142 patients, 89(62.68%) were male and 53(37.32%) were females with ratio of 1.7:1. Septal perforation, septal hematoma, bleeding and crust formation were seen in 8.45%, 8.7.04%, 15.49% and 16.90% respectively after SMR (group B) while in 1.41%, 0.0%, 4.23% and 2.82% respectively after septoplasty (group A).
Conclusion: This study concluded that septoplasty is better than submucous resection (SMR) in terms of complication rate in the deviated nasal septum.
Keywords: deviated nasal septum, septoplasty, perforation, hematoma, bleeding.

INTRODUCTION

Nasal obstruction is commonest issues that carry a patient into a physician's workplace and body part deviation may be a common structural etiology. Deviated septum (DNS) one may be a physical criticism of the nose, involving a displacement of the body part animal tissue. Some displacement is common; touching eightieth of individuals, most inadvertently two solely a lot of severe cases of a abnormal condition can cause symptoms of issue respiratory and need treatment.Symptoms of a deviated septum includeinfectionsof thesinusandbreathing difficulty,snoring, repetitivesneezing, facial pain,sometime nasal bleeding , difficulty withbreathing,and mild to severe loss of the ability tosmell[3].

In mild cases, symptoms can simply be treated withmedicationssuch asdecongestants,antihistamines, andnasal spray. Medication temporarily relieves symptoms, but does not correct the underlying condition[4]. As a result, surgical correction of septal deviation is the third most common head and neck procedure in the United States, and it generally is performed to improve quality of life. The importance and technical difficulties ofseptal surgery are often underestimated[5,6].Thesubmucousresection (SMR) was first described byFreer in 1902 and by Killian in 1904. The preservationof bilateral mucoperichondrial flaps and cartilaginoussupports were considered essential in theirtechnique[7].Conversely, septoplasty is a tissue-sparing procedure. In most situations, the area of deviation is corrected or resected in order to leave behind as much cartilage and bone as possible. The major complications of both these procedure are septal perforation, septal hematoma, bleeding and crust formation[8,9,10,11].

As submucous resection (SMR) and septoplasty are the commonly used technique for deviated nasal septum in the worldwide but more research should be required on this topic in terms of complication rate in randomized controlled trials. So, we had conducted this study between submucous resection (SMR) and septoplasty to evaluate the better technique in deviated nasal septum in terms of complication rate.

MATERIALS AND METHODS

This Randomized controlled trial was done from January 2016 to December 2016 at Department of Otorhinolaryngology, Head & Neck Surgery, Bahawal

[1]Associate Professor ENT, [2]Assistant Professor ENT, [3]Senior Registrar ENT ,[4]MO ENT
Quaid-i- Azam Medical College, Bahawalpur.
Correspondence to Dr. AneesurRehman Email: aneesrehman3333@gmail.com Cell: 0332-6070904

Victoria Hospital, Bahawalpur, after approval from local ethical committee.Total 142patients with deviated nasal septumof age 15-35 of both genders and willing to participate in the study were included. Patients with h/o nasal surgery, nasal trauma and any bleeding disorder were excluded.

Informed, written consent was taken from each patient after explaining the aims, methods, reasonably anticipated benefits, and potential hazards of the study and procedure. After this all patients were offered to pick up a slip from total mixed up slips (half-slips contained letter 'A' and other half-slips contained letter 'B') and he was placed in that respective group. The investigations done before the procedure were blood complete examination, serum creatinine level, X-ray chest, screening for hepatitis B and C and x-ray nose.

Septoplasty was performed for Group A patients while submucous resection was done for Group B patients. All the operations were done by a single and experienced surgeon (at least 3 years of post-fellowship experience).Patients were frequently visited post-operatively and final outcome was noted at 7th post-operative day i.e., complications (septal perforation, septal hematoma, bleeding and crust formation).

The collected information was analyzed by SPSS version 20.0. Mean and standard deviation were calculated for quantitative variables. Frequency and percentage were calculated for qualitative variables. Both groups were compared for presence of any difference among the septal perforation, septal hematoma, bleeding and crust formation (present/absent). Chi Square test was used to compare the frequency of complications and p-value ≤ 0.05 was considered as significant.

RESULTS

Age range in this study was from 15 to 35 years with mean age of 26.12±5.56 years. The mean age of patients in group A was 26.31±5.89 years and in group B was 25.94±5.25 years. Majority of the patients 78(54.92%) were between 26 to 35 years of age. Out of these 142 patients, 89(62.68%) were male and 53(37.32%) were females with ratio of 1.7:1. Mean duration of disease was 11.19±4.36 months. The mean duration of disease in group A was 11.33±4.72 months and in group B was 11.28±4.60 months. Majority of the patients 97 (68.31%) were ≤12 months of duration of disease. Percentage of patients according to diabetes mellitus and hypertension is shown in Table I & II respectively.

Outcome (in terms of complications) between submucous resection (SMR) and septoplasty in deviated nasal septum is shown in Table II. Septal perforation, septal hematoma, bleeding and crust formation were seen in 8.45%, 8.7.04%, 15.49% and 16.90% respectively after SMR (group B) while in 1.41%, 0.0%, 4.23% and 2.82% respectively after septoplasty (group A).

Table I: Distribution of patients according to diabetes mellitus

Diabetes mellitus	Group A (n=71)		Group B (n=71)		Total (n=142)	
	Frequency	%age	Frequency	%age	Frequency	%age
Yes	24	33.80	26	36.62	50	35.21
No	47	66.20	45	63.38	92	64.79

Table II: Distribution of patients according to hypertension

Hypertension	Group A (n=71)		Group B (n=71)		Total (n=142)	
	Frequency	%age	Frequency	%age	Frequency	%age
Yes	16	22.54	15	21.13	31	21.83
No	55	77.46	56	78.87	111	78.17

Table III: Outcome (in terms of complications) between (SMR) and Septoplasty in DNS (n=142)

Complications		Group A (n=71)		Group B (n=71)		P value
		No.	%age	No.	%age	
Septal perforation	Yes	01	1.41	06	8.45	0.053
	No	70	98.59	65	91.55	
Septal Hematoma	Yes	00	0.0	05	7.04	0.023
	No	71	100.0	66	92.96	
Bleeding	Yes	03	4.23	11	15.49	0.024
	No	68	95.77	60	84.51	
Crust formation	Yes	02	2.82	12	16.90	0.005
	No	69	97.18	59	83.10	

DISCUSSION

There is no satisfactory medical treatment for deviated nasal septum, the treatment is surgical, to correct the defect and to prevent complications. The basic principle of surgery is division of septum into anterior and posterior segment by a vertical line drawn between the nasal process of frontal bone and anterior maxillary spine. Division in posterior segment can be easily and effectively treated by classical killiansubmucosal resection operation (SMR). Whereas those in anterior segment should be treated by a more conservative septoplastytechnique. Septoplasty is one of the most frequently performed surgery in otorhinolaryngology now a days[12].

I have conducted this study to compare the outcome (in terms of complications) between submucous resection (SMR) and septoplasty in deviated nasal septum. Age range in my study was from 15 to 35 years with mean age of 26.12 ± 5.56 years.Out of these 142 patients, 89(62.68%) were male and 53(37.32%) were females with ratio of 1.7:1. The same ratios found in different studies are – 7.33:1 by Mahmoodet al[13], 69:31 by Rao et al.[14]Bansal Mohan[15] also stated that males are affected more than females. But Rehmanet al[16] found females (64.80%) more affected than males (35.19%). The possible reason for male dominance may be more environmental exposure and trauma.[16]The largest numbers of patients (38.71%) in our series were found to be between 21-30 years. Raoet al[17] found the maximum incidence between 2nd and 4th decade, Rehmanet al[18] found between second and fifth decade. Van der Vekenet al[19] noted that the prevalence of septal deviation in children increases from 16% to 72% in a linear fashion from 3 to 14 years of age

In my study, septal perforation, septal hematoma, bleeding and crust formation were seen in 8.45%, 8.7.04%, 15.49% and 16.90% respectively after SMR (group B) while in 1.41%, 0%, 4.23% and 2.82% respectively after septoplasty (group A). In a local descriptive observational study[17] on 220 patients, crust formation was present in 8.3% cases after SMR and 7% after septoplasty. Altered dental sensations were complained by 6.6% subjects after SMR and 5% after septoplasty. The altered dental sensations were temporary but took eight weeks to recover. Three (2.5%) patients after SMR and 1 (1%) after septoplasty were found to have septalhaematoma. It resolved in all the subjects with drainage. Three (2.5%) after SMR and 2 (2%) after septoplasty, were found to have septal perforation. They were, however, asymptomatic. Two (1.6%) patients had epistaxis after SMR and 3 (3%) after septoplasty, requiring repacking[20].

The major complications of both these procedure are septal perforation, septal hematoma, bleeding and crust formation[8-11]. In a study, it was seen in 8.33%, 8.33%, 12.50% and 12.50% respectively after SMR while in 0.0%, 0.0%, 3.45% and 3.45% respectively after septoplasty.[11]Zia and Butt noted septal perforations in 2% of their cases[21] while Haraldsson et al found septal perforations in 1.6% after septoplasty and 8% after SMR.[22] All the studies report incidence of septal perforation of 1%. These septal perforations are more common after SMR operation occurring due to opposing tear. If the perforation is duplicated contralaterally, one side should be closed[23,24].

CONCLUSION

This study concluded that septoplasty is better than submucous resection (SMR) in terms of complication rate in the deviated nasal septum. So, we recommend that septoplasty should be used routinely in general practice for these particular patients in order to reduce the morbidity of our population.

REFERENCES

1. Rehman A, Hamid S, Ahmad M, Rashid AF. A prospective study of nasal septal deformities in kashmiri population attending a tertiary care hospital. Intl J Otolaryngol Head Neck Surg. 2012;1:77-84.
2. Mahmood KT, Fareed T, Tabbasum R. Management of deviated nasal septum. J Pharm Sci Res. 2011;3(1):918-22.
3. Sundh C, Sunnergren O. Long-term symptom relief after septoplasty. Eur Arch Otorhinolaryngol. 2015;272(10):2871-5.
4. Metson, Ralph; Mardon, Steven, The Harvard Medical School Guide to Healing Your Sinuses, McGraw-Hill Professional, pp. 159–161, ISBN 0-07-144469-6
5. Finkbohner R, Johnston D, Crawford ES, Coselli J, Milewicz DM. Marfan syndrome. Long-term survival and complications after aortic aneurysm repair. Circulation. 1995;91(3):728–33.
6. Zoumalan RA, Morris LGT, Zeitler DM, Shah AR. Effects of various submucous resection techniques of septal cartilage on nasal tip projection. Intl Forum AllergRhinol. 2011;1(1):78-82.
7. Cukurova EA, Cetinkaya GC, Mercan E, Gumussoy DM. Retrospective analysis of 697 septoplasty surgery cases: packing versus trans-septal suturing method. ActaOtorhinolaryngologicaItalica. 2012;32:111-14.
8. Prepageran N, Lingham OR. Endoscopic septoplasty: the open book method. Indian J Otolaryngol Head Neck Surg. 2010;62(3):310–12.
9. Sathyaki DC, Geetha C, Munishwara GB, Mohan M, Manjuanth K. A comparative study of endoscopic septoplasty versus conventional septoplasty. Indian J Otolaryngol Head Neck Surg. 2014;66(2):155–61.
10. Iqbal K, Khan MI, Amanullah A. Submucous resection versus septoplasty: complications and functional

outcome in adult patients. Gomal J Med Sci. 2011;9(1):23-7.
11. Patel T, Tamrakar P. Comparative study between submucous resection and septoplasty to manage deviated nasal septum. Intl J Recent Trends Sci Technol. 2014;9(3):318-20.
12. Fjermedal C, Saunte S. Peicrsen, Comparison of the results of submucous resection and septoplasty. J Laryngology and Otology 1988, 102: 796-98.
13. Mahmood KT, Fareed T, Tabbasum R. Management of deviated nasal septum. J. Pharm. Sci Res. 2011,vol. 3 (1);918-22.
14. Rao JJ, Kumar ECV. Classification of nasal septal deviations-relation to sinonasal pathology. India J Otolaryngol Head Neck Surg. 2005;57(3):199-201.
15. Mohan B. Diseases of ear, nose and throat: Head and neck surgery. Jaypeebrothers medical publishers (P) ltd. First edition. 2013;334.
16. Rehman A, Hamid S, Ahmad M and Rashid AF. A prospective study of nasal septal deformities in kashmiri population attending a tertiary care hospital. Int J Otolaryngol Head Neck Surg. 2012;1:77-84.
17. Mahmood KT, Fareed T, Tabbasum R. Management of Deviated Nasal Septum. J Pharm Sci Res. 2011;3(1):918-22.
18. Rao JJ, Kumar ECV. Classification of Nasal Septal Deviations-Relation to Sinonasal Pathology. India J Otolaryngol Head Neck Surg. 2007:57 (3):199-201.
19. Van Der Veken P, Clement P, Buisseret T, Desprechins B, Kaufman L and Derde MP. CAT scan study of the prevalence of sinus disorders and anatomical variations in 196 children. Rhinol. 1990;28:177-84.
20. Iqbal K, Khan MI, Amanullah A. Submucous resection versus septoplasty: complications and functional outcome in adult patients. Gomal J Med Sci. 2011;9(1):23-7.
21. Zia MR, Butt MIH. Overview of septoplastyvis-àvis S.M.R. Specialist. 1996;12:235-8.
22. Haraldsson PO, Nordemar H, Anggard A. Long term results after septal surgery – submucous resection versus septoplasty. ORL. 1987;49:218-22.
23. Murthy P, Mckerrow WS. Nasal septal surgery: Is routine follow-up necessary? J Laryngol Otol. 1995;109:320-3.
24. Sirnivasan V, Arasaratnam RB, Jankelowitz GA. Day-case septal surgery under general anaesthesia and local anaesthesia with sedation. J Laryngol Otol. 1995;109:614-7.