KRISHNA KOIRALA

Associate Professor, Department of ENT- HNS

Manipal College of Medical Sciences, Pokhara, Nepal

Corresponding Author

Dr Krishna Koirala, Department of ENT-HNS, Manipal College of Medical Sciences, Pokhara, Nepal

Email: gaukrishna9@gmail.com

OUTCOME OF SEPTOPLASTY IN ADULT POPULATION: A STUDY FROM WESTERN NEPAL

ABSTRACT

Introduction: Septoplasty is one of the commonest otorhinolaryngology related surgery performed worldwide to correct the deviated nasal septum. This surgery is performed to offer qualitative and quantitative advantage to patients with nasal obstruction who present with deviated nasal septum. Although more than 50% of population have deviated nasal septum, very few of them require definitive surgery for clearance of symptoms.

Aims and objectives: The aim of the present study was to analyze the outcome of septoplasty surgeries performed in three years in adults of 18 years or more in terms of nasal obstruction, headache, postnasal drip, mouth breathing and difficulty in sleep.

Materials and methods: Cross sectional analysis of patients who had undergone septoplasty surgery in a tertiary care center performed by the author over a period of three years from 1st January 2015 to 31st December 2017.

Results: Age of patients in this study ranged from 18 to 48 years with the mean age of 21.61 ± 6.06 years. Maximum number of patients were within the age group of 21-30 years (63.6%). There was statistically significant improvement in terms of nasal obstruction, postnasal drip and mouth breathing with a p value of less than 0.001. Headache and difficulty in sleep were not improved statistically.

Conclusion: In patients with deviated nasal septum, septoplasty results in significant improvement in reduction of symptoms of nasal obstruction, postnasal drip and mouth breathing.

Keywords: Deviated nasal septum, Mouth breathing, Nasal obstruction, Postnasal drip Septoplasty

INTRODUCTION

Septoplasty is performed to correct the deviated nasal septum. Septoplasty is a commonly performed otorhinolaryngology related surgical procedure worldwide. It is the third most common head and neck surgery performed in the United States.[1] Septoplasty helps to correct the deviated nasal septum (DNS) thereby opening the nasal airway in patients with long standing nasal obstruction secondary to septal deviation. Obstructed and impacted deviated nasal septum can lead to nasal obstruction, headache, sinusitis, postnasal drip and even sleep apnea. Septoplasty is used as a standard surgical procedure to straighten the septum with the goal of improving nasal airflow when cosmetics are not the primary emphasis.[2]

Presently, the prime indication of septoplasty is nasal obstruction. The clinical diagnosis of nasal airway obstruction is based on the patient's subjective feeling, routine nose examination findings, and the surgeon's assessment.[3] Although underlying pathogenesis is often multifactorial, deviated nasal septum is the most common anatomical cause of nasal obstruction in adults.[4] Most of the times, there is compensatory hypertrophy of the opposite inferior turbinate and sometimes the middle turbinate, too.[5] Since hypertrophied turbinates may not spontaneously regress after surgery, they have to be partially excised in combination with septal surgery to prevent nasal obstruction on the non-deviating side postoperatively.[6,7] By correcting the deviated portion of the septum and carrying out turbinate surgery if required, nasal passages become patent

and patient perceives the nose being patent after septoplasty.

Although efficacy of septoplasty in adults with nasal obstruction due to deviated nasal septum remains uncertain, a meta-analysis has proven that septal surgery improves objective measures of nasal patency which may have beneficial effects for the patients.[8] In 2589 adult otorhinology treatment seeking adult subjects, deformities were noted in 89.2% by Mladina et al.[9] Instead of this high prevalence of nasal septal deviation, only a minority of subjects suffer from nasal obstruction.[10]

Although main aim of septoplasty is to give the patient a patent nose, few of them have persistent symptoms after the surgery. Other causes including nasal valve insufficiency, inferior turbinate hypertrophy, and nasopharyngeal pathologies also might give rise to persistent nasal obstruction after septoplasty. However, the surgeons' primary goal must be to provide acceptable nasal airway to the patients.[11]

Aim of this study was to assess the post-surgical outcomes of patients undergoing septoplasty in relation to nasal obstruction, headache, postnasal drip, mouth breathing and sleep difficulties like sleep apnea syndrome.

MATERIALS AND METHODS

This study included patients 18 years or over who presented with nasal obstruction and subsequently underwent primary septoplasty at Manipal College of Medical Sciences, Pokhara, Nepal from 1st January 2015 to 31st December 2017. Patients less than 18 years, patients operated for indications other than deviated nasal septum and patients unwilling to participate in the study were excluded from the study. Patient's demographic characteristics including age, sex were recorded. History of nasal obstruction, nasal congestion, snoring, sleep apnea, postnasal drip etc. were also noted.

The initial clinical presentations and outcomes were compared after three months of septoplasty. Statistical analysis was performed with the help of SPSS software for Windows (version 16.0, SPSS Inc., Chicago, IL, USA). P value of less than or equal to 0.05 was considered statistically significant for all statistical comparisons.

RESULTS

One hundred and thirty-three septoplasty surgery were performed in our center by the author during the period of 3 years from 1st January 2015 to 31st December 2017. One hundred and ten patients met the inclusion criteria and were enrolled in the study. Out of 110 patients, 88 were males and 22 were females with male to female ratio of 4:1.

Age ranged from 18 to 48 years with the mean age of 21.61± 6.06 years. Maximum number of patients were within the age group of 21-30 years (63.6%), followed by 18-20 years (22.7%) and others were minority. None of the patients were above the age of 48 years (Fig. 1).

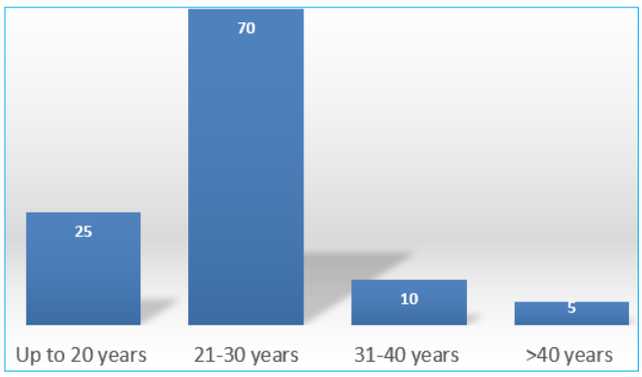

Fig. 1. Distribution of patients according to age groups.

Distribution of patients by clinical presentation before and after 3 months of septoplasty were compared. Nasal obstruction was present in all the patients whereas 38 patients had associated headache, 34 patients had symptoms suggestive of postnasal drip, 22 patients had history of mouth breathing and 14 patients also gave history of difficulty in sleeping at night pre-operatively.

At the end of three months of surgery, only 7 patients had nasal obstruction, whereas headache, postnasal drip, mouth breathing and difficulty to breathe at night were persistent in 26,12, 8 and 8 patients respectively (Table 1).

Table. 1. Distribution of patients by clinical presentation at presentation and after 3 months of surgery.

Symptoms	At presentation	3 months after surgery
Nasal obstruction	110 (100%)	7 (6.36%)
Headache	38 (34.5%)	26 (23.6%)
Postnasal drip	34 (30.9%)	12 (10.9%)
Mouth breathing	22 (20%)	8 (7.2%)
Difficulty to breathe at night	14 (12.7%)	8 (7.2%)

Pre- and post-operative outcome analysis was performed for different variables. There was highly significant statistical improvement in terms of nasal obstruction, postnasal drip and mouth breathing with p value of <0.05. But there was no

association in terms of headache and difficulty to breathe at night pre and post operatively (Tables 2 to 6).

Table. 2. Pre- and post-operative outcome of nasal obstruction

	Nasal obstruction	No nasal obstruction	Marginal Row Totals
Pre op	110	0	110
Post op	7	103	110
Marginal Column Totals	117	103	220 (Grand Total)

Fisher's exact test, $p < 0.00001$.

Table 3. Pre- and post-operative outcome of headache

	Headache	No headache	Marginal Row Totals
Pre op	38	72	110
post op	26	84	110
Marginal Column Totals	64	156	220

Chi square test, p= 0.07486

Table 4. Pre- and post-operative outcome of postnasal drip

	Postnasal Drip	No Postnasal Drip	Marginal Row Totals
Pre op	34	76	110
Post op	12	98	110
Marginal Column Totals	46	174	220

Chi square test, p= 0.0002

Table 5. Pre- and post-operative outcome of mouth breathing

	Mouth breathing	No mouth breathing	Marginal row total
Pre op	22	88	110
Post op	8	102	110
Marginal Column Totals	30	190	220

Chi-square, p= 0.005952.

Table 6. Pre- and post-operative comparison of problems during sleep

	Problem during sleep	No problem during sleep	Marginal Row Totals
Pre op	14	96	110
Post op	8	102	110
Marginal Column Totals	22	198	220

Chi-square, p = 0 .17753.

DISCUSSION

Deviated nasal septum is a highly prevalent condition in the community with variations from 30.9% to around 90% in the general population. [12,9] In our study, deviated nasal septum was highly prevalent in males than females with the ratio of 4:1 which is in accordance with the observations of Prasad S et al.[13]

In the present study, we tried to look for the outcome of septoplasty surgery in relation to improvement in nasal obstruction, headache, postnasal drip, mouth breathing and sleep problems.

In the present study, nasal obstruction, postnasal drip, and mouth breathing had significantly improved with septoplasty. In their systematic review of long-term patient related outcome of septoplasty, Tsang CLN et al found the satisfaction rate from 50-100% .[14] In an another study, Velasco LC et al observed an improvement of 94.4% in nasal obstruction at the end of two months in patients undergoing septoplasty and turbinate reduction .[15] Similarly, Gandomi et al reported that 89.5% of their patients reported a subjective improvement in nasal obstruction.[16] In our study, 93.6% of patients had statistically significant improvement on nasal obstruction at the end of 3 months which is in consistent with those studies.

In a study performed by Bugten et al, it was reported that septoplasty led to highly significant improvement in quality of life and symptoms of deviated nasal septum. The patients reached the same level as the healthy controls in 6 of 11 symptoms including headache, facial pain, sneezing, rhinosinusitis, cough, and snoring.[17] In our study, there was no statistically significant improvement in headache and sleep disturbances after septoplasty. We think that headache and sleep disturbances are multifactorial than single cause.

There is sufficient evidence in the literature to conclude that septal surgery improves objective measures of nasal patency which may have beneficial effects for the patient.[8] However, when the patients reports to a surgeon with nasal obstruction as the primary complaint, we have to counsel the patient about good chances of nasal patency after septoplasty surgery. A surgeon can explain about the chances of improvement in postnasal drip and mouth breathing but should not promise about the relief of headache and snoring.

Findings observed in the present study may provide platform for further research in the perspective of patient benefits after septoplasty. Headache, sleeping difficulty, nasal congestion is to some extent subjective rather than to be measureable. Large multicentric studies in this subject matter are required to generalize the results.

CONCLUSION

Septoplasty leads to significant improvement in nasal obstruction, postnasal drip and mouth breathing in patients with deviated nasal septum. Septoplasty alone might not be adequate to relieve headache and sleep disturbances due to deviated nasal septum.

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