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Endoscopic Septoplasty versus Endoscopicseptoplasty with Inferiorturbinoplasty Using Microdebrider

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ABSTRACT

To study the prevalence of asymptomatic bacteriuria in gestational diabetes mellitus. To screen the women with gestational diabetes mellitus for the prevalence of asymptomatic bacteriuria And to study the commonest organism which causes asymptomatic bacteriuria in gestational diabetes mellitus. Prevalence of asymptomatic bacteriuria among the women with gestational diabetes mellitus attending our antenatal clinic assessed using percentage with 95% confidence interval is18% (11.4 - 26.5%) The commonest organism which causes the asymptomatic bacteriuria in gestational diabetes mellitus was assessed using percentage of occurrence to the total. 61% of asymptomatic bacteriuria in GDM is due to E.coli.

Keywords:diabetes mellitus, pyelonephritis, preeclampsia, anaemia and glucose intolerance.

INTRODUCTION

The basic need for the survival of an individual is breathing. It not only affects the survival but also the productivity in an individual. Abnormalities starting from the tip of the nose to the terminal bronchioles can cause difficulty in breathing. [1]Nasal obstruction is one the common symptoms that patients preset with to the ENT surgeon. The development of new diagnostic and therapeutic materials has helped to variable extent to understand the various anatomical abnormalities or any pathologies. Symptoms maybe disproportionate to the actual findings. I will be discussing the management of nasal obstruction in my study.[2-4]

The most common causes of nasal obstruction are deviated nasal septum and inferior turbinate hypertrophy. Many patients complain of persisting nasal obstruction after undergoing septoplasty as a treatment for deviated nasal septum.It is usually due to the presence of a hypertrophied inferior turbinate. [5] Diagnostic nasal endoscopy is done preoperatively to show the difficulty in the first pass whichmaybe caused due to the deviated nasal septum as well as

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inferior turbinate hypertrophy. Temporary management of turbinate reduction can be done using modern pharmacological agents. It is temporary as the nasal obstruction is bound to occur after the stoppage of medical treatment. [6] Alternatively patient can undergo turbinate reduction procedures as a treatment option for inferior turbinate hypertrophy. The chances of crusting, atrophic rhinitis is high with total turbinectomy but nevertheless it relieves nasal obstruction immediately. The other procedures which can be done for turbinate reduction are:y study is about the added benefits of microdebrider assisted turbinoplasty when it is done along with septal correction procedures.

1. MATERIALS AND METHODOLOGY

AIM: To compare the outcome of endoscopicseptoplastyand endoscopic septoplasty combined with microdebrider assisted inferiorturbinoplasty

STUDY PLACE: SreeBalaji Medical College and Hospital, Chennai.

STUDY DESIGN: Prospective

INCLUSON CRITERIA:

1. Age 20 to 45 years ofage both sexes
2. Patients with deviated nasal septumwith inferiorturbinate hypertrophy with symptoms of nasal obstruction.
3. Patient giving consent for thestudy.
4. Patient willing forsurgery.

EXCLUSION CRITERIA:

1. Patients above the age of 45 and those below the age of

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2. Patients with associated allergic reactions or other symptomatology
3. Patients unfit for thesurgery.

INVESTIGATIONS :

A complete history with systemic examination and complete examination of ear, nose and throat including anterior and posteriorrhinoscopy.

1. Diagnostic nasalendoscopy
2. CT paranasalsinuses
3. Preopand post opquestionnaire
4. Routine pre-operative investigations (complete blood counts, renal function tests,etc.,).

CONFLICT OF INTEREST : NIL

FINANCIAL SUPPORT : NIL

PRINCIPLE INVESTIGATOR : Dr. S.THRUPTHI MS

ENT POST GRADUATE

METHODOLOGY

SreeBalaji Medical College and Hospital in Chennai was the location of the research.

Since carefully considering the inclusion criterion, patients who presented to the ENT op with signs of deviated nasal septum and inferior turbinate hypertrophy were studied clinically and radiologically. It was mainly a double-blind prospective randomised control trial in which all patients in the even number were assigned to septoplasty with inferior turbinoplasty and all patients in the odd number were assigned to septoplasty alone.

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The treatment was carried out under general anaesthesia. The submucosa of both the inferior turbinates and the submucoperichondrial layer of the nasal septum is injected with 3-4 ml. Cotton patties soaked in 4 percent lignocaine with adrenaline is used for surface decongestion of the nasal mucosa as well as topical decongestion. For general anaesthesia, a 1:20000 concentration adrenaline solution is used for surface anaesthesia, and a 1:1200000 adrenaline solution is used as an injection to avoid excessive intraoperative bleeding. Septoplasty is performed using a zero degree Hopkins endoscope after penetration and a Freer's incision on the nasal septum on the side of caudal dislocation of the nasal septum. Following that, on the same side of the incision, the mucoperichondrial and mucoperiosteal flaps are raised. The mucoperiosteum on the opposite side is raised after an incision is made at the bony cartilaginous junction of the nasal septum.

If the first pass is inadequate it means that either the scope cannot be passed to visualize the choana or the scope will be passed with great difficulty whereas adequate first pass indicates that the scope can be passed easily to visualize the choana.

2. RESULTS

A sample size of 100 patients were considered for the study out of which 50 patients underwent septoplasty alone and considered as the control group and the rest underwent septoplasty with inferior turbinoplasty using a microdebrider as considered to be the test group.Out of the 50 patients who were taken as the test group, 23 patients underwent bilateral turbinoplasty, 18 had left turbinoplasty and 9 of them underwent right turbinoplastyalongwithseptoplasty. The groups were randomized into test and control groups. The improvement in symptoms and post objective diagnostic nasal endoscopy were considered at the end of 3 months which is better in the test group as compared to the control group to consider this study a success.

STATISTICAL ANALYSIS

The statistical analysis was performed using the statistical analysis program Statistical Package for Social Sciences (SPSS Version 16.0). Numbers (percent) and mean standard deviation were used to reflect the data. The required statistical analyses of contrast were carried out. The unpaired t test was used to examine continuous variables. The Chi-Square Test and Fisher Exact Test were used to examine categorical variables. P 0.05 was used as the threshold for statistical significance.

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The aim of this research was to compare the outcomes of endoscopic septoplasty and endoscopic septoplasty combined with inferior turbinoplasty using microdebrider using SNOT- 20 analysis at the Department of ENT, SreeBalaji Medical College and Hospital, Chennai.

Table 1; STUDY GROUPS

Study Groups	Endoscopic Septoplasty Group	Endoscopic Septoplasty with Inferior Turbinoplasty Group	Total
Number	50	50	100
Percentage	50.00	50.00	100

Table 2: AGE GROUPS

Age Distribution	Endoscopic Septoplasty	Endoscopic Septoplasty with Inferior Turbinoplasty
Mean	31.64	32.34
SD	6.64	7.16
P value Unpaired t Test		0.613

The majority of the endoscopic septoplasty group participants (48.00 percent) were between the ages of 21 and 30, with an average age of 31.64 years, according to the age distribution table. In endoscopic septoplasty with inferior turbinoplasty population majority were too in 21-30 years age range (50.00 percent) with a mean age of 32.34 years. (p=0.613) p=0.613 p=0.613 p=0.613

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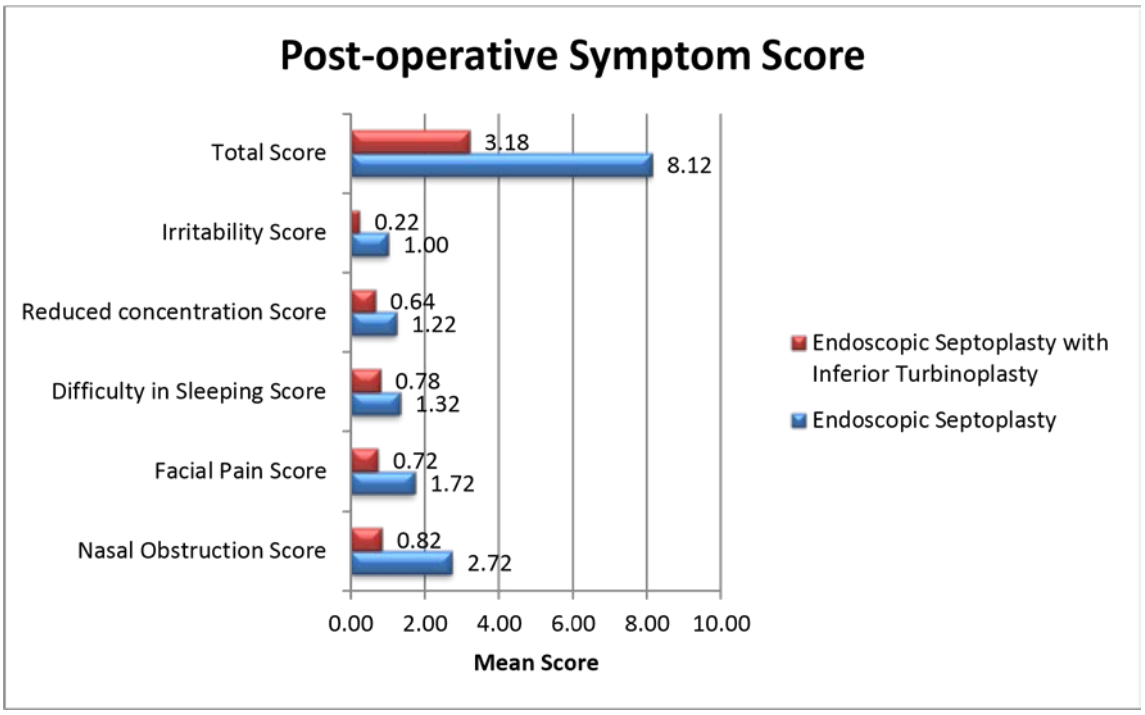
The results of the unpaired t test show that there is a statistically non-significant relationship between age distribution and intervention groups. (p 0.05) p 0.05 p 0.05 p 0.05 p

The majority of the endoscopic septoplasty group subjects had a mean score of 1.90 scoring points, while the endoscopic septoplasty with inferior turbinoplasty group subjects had a mean score of 2.16 scoring points (p= 0.141), according to the pre-operative irritability score distribution chart. The data subjected to unpaired t test shows the presence of statistically non-significant interaction between pre-operative nasal obstruction score/ facial pain score/ irritability score distribution and intervention groups (p 0.05) p 0.05 p 0.05 p 0.05 p According to the overall pre-operative symptom score distribution table, most endoscopic septoplasty group subjects had a mean score of 12.38 scoring points, while endoscopic septoplasty with inferior turbinoplasty group subjects had a mean score of 13.58 scoring points (p=0.001). A statistically relevant relationship exists between overall pre-operative symptom score distribution and intervention categories, according to data subjected to an unpaired t test. (p 0.05) p 0.05 p 0.05 p 0.05 p 0.05

Fig 1: POST-OPERATIVE SYMPTOM SCORE



The data subjected to unpaired t test reveals the existence of statistically significant association between post-operative nasal obstruction score/ facial pain score

/difficulty in sleeping score/ reduced concentration score/ irritability score distribution and intervention groups ($p < 0.05$).

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he data subjected to unpaired t test reveals the existence of statistically significant association between mean pre-operative vs post-operative total symptom score distribution in endoscopic septoplasty group ($p < 0.05$)

Table 3: Endoscopic Septoplasty with Inferior Turbinoplasty - Pre-operative Vs Postoperative Symptom Score

Endoscopic Septoplasty with Inferior Turbinoplasty-Pre-operative Vs Postoperative Symptom Score	Pre-operative Symptom Score		Post-operative Symptom Score		P Value Paired t Test
	Mean	SD	Mean	SD	
Nasal Obstruction Score	3.54	0.50	0.82	0.48	<0.001
Facial Pain Score	2.78	0.74	0.72	0.57	<0.001
Difficulty inSleeping Score	2.64	0.60	0.78	0.51	<0.001
Reduced concentration Score	2.50	0.74	0.64	0.53	<0.001
Irritability Score	2.16	0.89	0.22	0.42	<0.001
Total Score	13.58	1.79	3.18	0.90	<0.001

On analysis of endoscopic septoplasty with inferior turbinoplasty - pre-operative vs postoperative nasal obstruction score distribution table, it was evident that most of the endoscopic septoplasty with inferior turbinoplasty group subjects had a pre-operative mean score of 3.54 scoring points and a post-operative mean score of 0.82 scoring points (p= <0.001).

On analysis of endoscopic septoplasty with inferior turbinoplasty - pre-operative vs postoperative facial pain score distribution table, it was evident that most of the endoscopic septoplasty with inferior turbinoplasty group subjects had a pre-operative mean score of 2.78 scoring points and a post-operative mean score of 0.72 scoring points (p= <0.001).

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On analysis of endoscopic septoplasty with inferior turbinoplasty - pre-operative vs postoperative difficulty in sleeping score distribution table, it was evident that most of the endoscopic septoplasty with inferior turbinoplasty group subjects had a pre-operative mean score of 2.64scoring points and a post-operative mean score of 0.78 scoring points (p= <0.001).

On analysis of endoscopic septoplasty with inferior turbinoplasty - pre-operative vs postoperative reduced concentration score distribution table, it was evident that most of the endoscopic septoplasty with inferior turbinoplasty group subjects had a pre-operative mean score of 2.50 scoring points and a post-operative mean score of

0.64 scoring points (p= <0.001).

On analysis of endoscopic septoplasty with inferior turbinoplasty - pre-operative vs postoperative irritability score distribution table, it was evident that most of the endoscopic septoplasty with inferior turbinoplasty group subjects had a pre-operative mean score of 2.16 scoring points and a post-operative mean score of 0.22 scoring points (p= <0.001).The data subjected to unpaired t test reveals the existence of statistically significant association between - pre-operative vs post-operative nasal obstruction score./facial pain score /difficulty in sleeping score/ reduced concentration score/ irritability score distribution in endoscopic septoplasty with inferior turbinoplasty group (p< 0.05)

On analysis of endoscopic septoplasty with inferior turbinoplasty - pre-operative vs postoperative total symptom score distribution table, it was evident that most of the endoscopic septoplasty with inferior turbinoplasty group subjects had a pre-operative mean score of

13.58 scoring points and a post-operative mean score of 3.18 scoring points (p= <0.001).

The data subjected to unpaired t test reveals the existence of statistically significant association between mean pre-operative vs post-operative total symptom score distribution in endoscopic septoplasty with inferior turbinoplasty group (p < 0.05)

TOTAL SYMPTOM SCORE

On analysis of endoscopic septoplastyvs endoscopic septoplasty with inferior turbinoplasty - pre-operative vs post-operative total symptom score distribution table, it was evident that the difference in mean pre-operative vs post- operative total symptom score is 4.26

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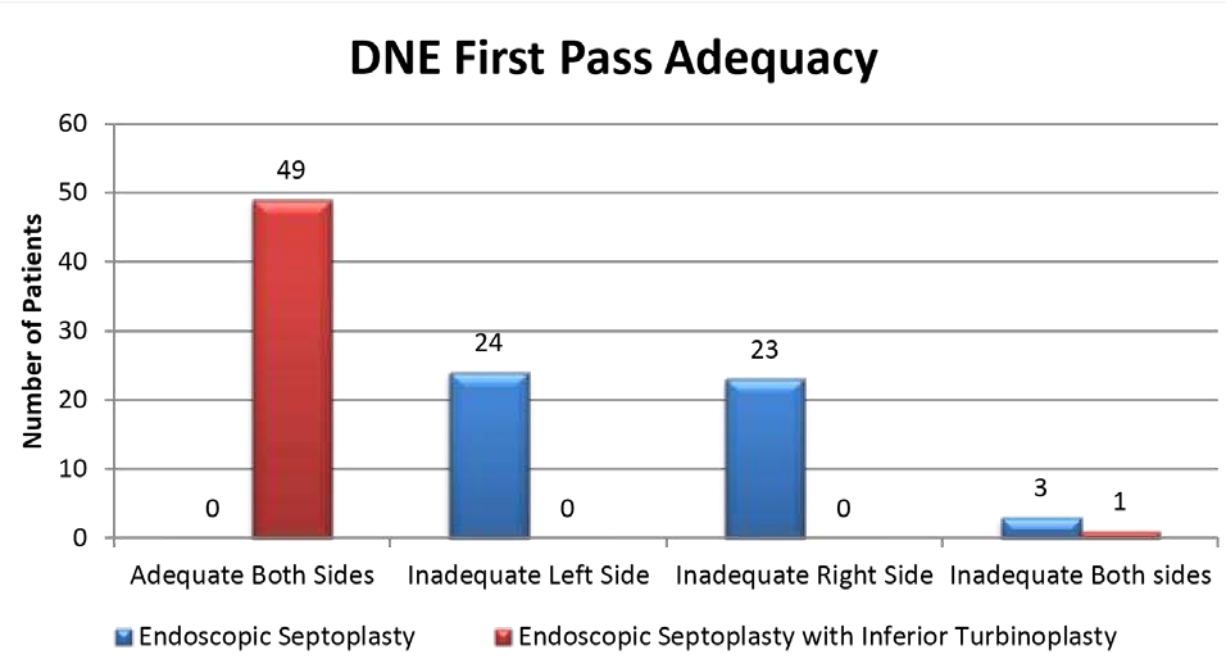
score points in endoscopic septoplasty and 10.40 score points in endoscopic septoplasty with inferior turbinoplasty group. (p= <0.001).

Fig 2: DNE First Pass Adequacy



On analysis of DNE first pass adequacy distribution table, it was evident that most of the endoscopic septoplasty group subjects had DNE first pass adequacy in both sides (98%) and In endoscopic septoplasty with inferior turbinoplasty group all the subjects had DNE first pass inadequacy on either of the sides (100%). The data subjected to unpaired t test reveals the existence of statistically significant association between DNE first pass adequacy distribution and intervention groups ($p < 0.05$)

3. DISCUSSION

The study was done to compare the outcome of septoplasty and septoplasty with inferior turbinoplasty using microdebrider in patients who have a deviated nasal septum with inferior turbinate hypertrophy.[7-8] The patients were taken into the study based on the inclusion and exclusion criteria. Patients who had allergic symptoms and related symptoms were excluded from the study. Patients with co-moribidities were also excluded from my study.[9]There was a 36.3% improvement in the control group who underwent only septoplasty as compared to the test group who underwent septoplasty and turbinoplasty with a 77% improvement in symptoms. Patients were taken as the control and test group by randomization. The study is a double blinded

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study.[10]

A total of 100 patients were equally divided into control (50) and test(50) group. Patients in the age group of 20-45 were considered for the study. The following agegroup was considered due to the reduced rate of co-morbidities, reliability of answers and reduced morbidity of the procedure.[12]The gender distribution in the test group were 50% each of males and females and 56% males and 44% females in the control group.Decreased mean post-operative nasal obstruction score (mean increased difference of 0.96 score points, 26% lower) in endoscopic septoplasty group compared with preoperative nasal obstruction score.Decreased mean post-operative facial pain score (mean increased difference of 0.96 score points, 36% lower) in endoscopic septoplasty group compared with preoperative facial pain score. Decreased mean post-operative total symptom score (mean increased difference of 10.40 score points, 77% lower) in endoscopic septoplasty with inferior turbinoplasty group compared with pre-operative irritability score.[13]

A study which was conducted by Lee CF, Chen TA on 29 patients with chronic hypertrophic rhinitis were treated with endoscopic inferior turbinoplasty and an average increase in nasal airflow was observed. There was no permanent synechaie or atrophic change which is similar to our study.Lee CF, Chen TA also observed that there was a 91% improvement in the nasal obstruction as compared to 100% improvement in our study. They also proved that powered endoscopic turbinoplasty along with endoscopic septoplasty or sinus surgery is a surgical option for disease clearance.[14]Another study which was done by BandosRD et alobserved that there was a satisfactory improvement in nasalobstruction post septoplasty with inferior turbinectomy.Bhandarkar N D et al did a study in 2010 and concluded that inferior turbinate surgery has favourableoutcomes and we observed that there was a decrease in the usage of decongestants and other drugs postoperatively in the test group than the control group. Hence inferior turbinate surgery is recommended as a treatment option for patients with turbinate hypertrophy who are not responsive to medical modes of treatment.[15]Ilium P did on 45 patients in 1993 and concluded that there was no subjective improvement from inferior turbinoplasty on the opposite side of the septal deviation whereas in our study there is a symptomatic improvement when septoplasty is combined with inferior turbinoplasty.

CONCLUSION

Cases of deviated nasal septum with symptoms of nasal obstruction were treated

surgically by both septoplasty and submucous resection of septum. Nowadays septoplasty and Submucous resection of septum is combined with inferior turbinoplasty for better outcome. Precise tissue removal can be done in inferior turbinoplasty using a microdebrider with the help of endoscope as the visualization is better.Inferior turbinoplasty is advised as in our study there is an excellent improvement in the symptoms postoperatively as observed during follow up in patients undergoing septoplasty with inferior turbinoplasty as compared to the control group who underwent only septoplasty.Using a microdebrider for inferior turbinoplasty reduces the post operative complications like crusting, atrophic changes when compared to other inferior turbinate procedures which shows the benefit of poweredinstruments.Therefore,septoplasty when associated with inferior turbinoplasty using a microdebrider has an upper hand when compared to septoplasty alone in certain cases deviated septum with inferior turbinate hypertrophy.

FUNDING: No funding sources

ETHICAL APPROVAL: The study was approved by the Institutional Ethics Committee

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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