

Heymann's nasal scissors, all the inferior part of lower border of the inferior turbinate was trimmed. SMD carried out by a probe insulated by in a small bore catheter, by inserting a needle into the anterior& of the inferior turbinate, & advancing it until the posterior end was judged to have been reached. Attempt as made not to breach the mucosa at any point. The needle was withdrawn over a period of ten second, with two further runs on one side. On completion both nostrils were packed with paraffin packs which were removed 24 hr. post operatively. Follow-up was weekly at first month & then monthly intervals for 6 month & the other period once every month. At each visit the nose was examined for clots, crusts & adhesions & these were removed when present. same patient

Results:

250 patients have undergone surgical operation 150(60%) males & 100(40%) females [tableI]. In this study the age ranged from 18-50 years with an average of 34 years of which the third decade gave 117(46%) [tableII]. People who were operated on came from various classes in society 50 of whom were students & 50 were officials with 20% of each [tableIII]. 250(100%) patients suffering nasal obstruction, the same presentation 150(60%) affected by hot weather, 192(76.8%) patients suffering sneezing, the same presentation 17(8.8%) increase with hot weather, 50(26.1%) increase with cold weather & 125(65.1%) not affected by weather. 158(63.3%) patients suffering rhinorrhea. [tableIV]. weather, 192(76.8%) patients suffering sneezing, the same presentation 17(8.8%) increase with hot weather, 50(26.1%) increase. People who have been suffering from nasal obstruction & other complaints for one year duration are only 59(23.6%) As for duration of two years the 75(30%) [tableV]. Family history Results: 250(100%) patients suffering nasal obstruction, the same presentation 150(60%) affected by hot of atopy which include allergy & asthma relates to 167(66.8%) patients. Those who have surgical history are 58(23.2%) people undergoing tonsillectomy 25(10%), intranasal polypectomy 17(6.8%), SMR 8(3.2%), & galvanic cautery of the turbinates 8(3.2%). 83(33.2%) patients had negative medical, surgical & family history. [tableVI]. All patients examined clinically have 100% bilateral inferior turbinate hypertrophy. Patients who have mild septal deviation 167(66.8%) in number, 67(26.8%) to the Rt & 100(40%) to the Lt. Septal thickening are 100(40%). Pale mucosa 50(20%) [tableVII]. X-ray of paranasal sinuses findings reveal mucosal thickening of maxillary sinuses 208(83.2%)

patients, 192(76.8%) of them bilateral, 16(6.4%) unilateral. Hazy ethmoidal sinuses 92(36.8%). Hazy frontal sinuses 16(6.4%). Soft tissue shadow of inferior turbinate hypertrophy is 250(100%) & 42(16.8%) there is no change [tableVIII]. Inferior turbinate trimming operated on 250 patients 142(56.8%) on the Rt nostril while 108(43.2%) on the Lt nostril. SMD done on the same 250 patients 142(56.8%) on the Lt nostril while 108(43.2%) on the Rt nostril. [tableIX].

7 days after the trimming of inferior turbinate 142(56.8%) patients have acquired good air flow, while patients done SMD are only 30(20%) having good air flow. The same duration of time patients with turbinate trimming have 117(46.8%) where as 125(50%) in SMD have congested mucosa. Oedema is apparent on 108(43.2%) patients of the first group, on the other hand 167(66.8%) of the second group have oedema. Crust developed in 50(20%) patients of the first group while 103(43.2%) patients of the second group have the same crust. Adhesions can only be seen in 33(13.2%) patients with SMD. Mean while 8 patient 3.2% of SMD has got infection and bleeding

2 weeks after the trimming of inferior turbinates 235(93.2%) patients have acquired good air flow, while patients done SMD are only 117(46.8%) having good air flow. The same duration of time patients with turbinate trimming have 50(20%) where as 45(16.8%) in SMD have congested mucosa. Oedema is apparent in 17(6.8%) patients of the first group, on the other hand 100(40%) of the second group have oedema. Crust developed in 58(23.2%) patients of the first group while 92(36.8%) patients of the second group have the same crust. Adhesions can only be seen in 33(13.2%) patients with SMD.

3 weeks after the trimming of inferior turbinates 225(90%) patients have acquired good air flow, while patients done SMD are only 158(63.2%) having good air flow. Congested mucosa can only be seen in 17(6.8%) patients with SMD. Oedema is apparent in 2(6.8%) patients of the first group, on the other hand 50(20%) of the second group have oedema. Crust developed in 25(10%) patients of the first group while 50(20%) patients of the second group have the same crust. The same duration of time patients with turbinate trimming have 8(3.2%) where as 17(6.8%) in SMD have adhesions.

One month after the trimming of inferior turbinates 242(96.8%) patients have acquired good airflow, while patients done SMD are only 200(80%) having good air flow. Congested mucosa can only be seen in 8(3.2%) patients with SMD. Crust developed in 17(6.8%) patients of the first group while 33(13.2%) patient of the second group have the same crust. The same

duration of time patients with turbinate trimming have 8(3.2%) where as 17(6.8%) in SMD have adhesions. Sinusitis can only be seen in 8(3.2%) patients with SMD.

2 month after the trimming of inferior turbinate 242 (96.8%) patients have acquired good airflow, while patients done SMD are only 208(83.2%) having good air flow. Crust developed in 8(3.2%) patients of the first group & the same percentage for SMD patients after the same period of time . The same duration of time patients with turbinate trimming has 8 (3.2%) as well as in SMD have adhesions . Inferior turbinate hypertrophy can only be seen in 17(6.8%) patients with SMD . Middle turbinate hypertrophy can only be seen in eight 3.2% patients with SMD .

Three months after the trimming of inferior turbinates 242(96.8%) patients have acquired good airflow, while patients done SMD are only 208(83.2%) having good airflow . Crust can only be seen in 8(3.2%) patient with SMD. After the same period of time adhesion can be seen in both groups of patients in same percentage 8(3.2%) each sinusitis can only be seen in 8(3.2%) patient with trimming turbinate. Inferior turbinate hypertrophy can be seen in patients with SMD in 25(10%) of patients underwent this surgery. Middle turbinate hypertrophy also seen in patients with SMD in 8(3.2%) patients .

4 months after the trimming turbinate 242 (96.8%) patients have SMD are only 200(80%) having good air acquired good air flow while patients done flow. Adhesion can only be seen in 8(3.2%) patients with SMD . 25 patients of the second group have inferior turbinate hypertrophy after the same duration of time which constitute 10% . Same percentage 8(3.2%) seen as middle turbinate hypertrophy in both groups of patients .

5 months after surgery 250(100%) patients acquired excellent airflow with that group underwent trimming of inferior turbinate ,while patients done SMD are only 217 (86.8%) having good air flow . After same duration of time inferior & middle turbinate hypertrophy only 8(3.2%) in the same group .

6 months after surgery 250(100%) patients acquired excellent airflow with that group underwent trimming of inferior turbinate ,while patients with SMD turbinate hypertrophy is seen in second group with SMD patients in 25(10%) of cases 208(83.2%) having good airflow. Adhesions are only seen in 8(3.2%) patients with SMD. Inferior turbinate hypertrophy is seen in 25(10%) patients with second group of patients & middle turbinate hypertrophy seen only in 8(3.2%) patient of same group .

7 months after surgery 250(100%) patients have trimming turbinate acquired excellent airflow , while 217 (86.8%) patients with SMD having good airflow. Second group of patients has had

inferior turbinate hypertrophy 25 (10%) & middle turbinate hypertrophy 8(3.2%) for the same duration of time .

8 months after surgery 250(100%) patients having trimming turbinate acquired excellent airflow , while 217(86.8%) patients with SMD having good airflow. Only 8(3.2%) developed sinusitis with trimming turbinate group of patients after same duration of time . 8(3.2%) patient with SMD group have adhesions after this period of time . 25 (10%) of patients have developed inferior turbinate hypertrophy & 8(3.2%) of patient have developed middle turbinate hypertrophy in SMD group of patients for the same duration of time .

9 months after trimming turbinate 250 (100%) patients have acquired excellent airflow while those with SMD only 217 (86.8%) have good air flow. Adhesion can only be seen in 8(3.2%) patient with SMD group of patients . Inferior turbinate hypertrophy 25(10%) and middle turbinate hypertrophy 8(3.2%) is seen in SMD group of patients .

Frequent follow-up done every 6 months for a period of 5 years in which we found a recurrence of nasal obstruction at the site of SMD in 158 patients 36.2% of patients while not in the trimming turbinates of same time in those we precede for trimming of the inferior turbinate to manage the obstruction. This takes place in average rate for a period of two years.

TABLE | I | : SEX DISTRIBUTION

SEX	NO. OF PT.	%
MALE	150	60
FEMALE	100	40

TABLE | II | : AGE DISTIBUTION

YEARS	NO. OF PT.	%
18 – 20	58	23.2
21 – 30	117	46.8
31 – 40	50	20
41 – 50	25	10

TABLE | III | : OCCUPATION

OCCUPATION	No. Of Pt.	%
STUDENTS	50	20
OFFICIALS	50	20
MED. STAFF & SUBSTAFF	42	16.8
WORKERS AND ENGINEERS	42	16.8
TEACHERS	25	10
HOUSEWIVES	25	10
DRIVERS	8	3.2
FARMERS	8	3.2

TABLE [IV]: PRESENTATION OF SYMPTOMS

COMPLAINT	No. Of pt.	%
NASAL OBSTRUCTION	250	100
change with hot weather	150	60
not affected by weather	100	40
SNEEZING	192	76.8
increase with hot weather	17	8.8
increase with cold weather	50	26.1
not affected by weather	125	65.1
RHINORRHEA	158	63.33
COUGH	75	30
HEADACHE	58	23.2
ITCHING (ENT)	33	13.2
SORE THROAT	17	6.8
SNORING	17	6.8
SLEEP DISORDER	8	3.2
LOSS OF SMELL	8	3.2

TABLE [V]: DURATION

DURATION	No. Of Pt.	%
1 YEAR	59	23.6
2 YEARS	75	30
3 YEARS	8	3.2
4 YEARS	25	10
5 YEARS	8	3.2
6 YEARS	17	6.8
7 YEARS	8	3.2
9 YEARS	17	6.8
10 YEARS	25	10
12 YEARS	8	3.2

TABLE [VI]: HISTORY

HISTORY	No. Of Pt.	%
MEDICAL	0	0
SURGICAL :	58	23.2
intranasal polypectomy,	17	6.8
SMR,	8	3.2
tonsillectomy	25	10
galvanic cautery	8	3.2
FAMILY	167	8
NEGATIVE	83	2

TABLE [VII]: FINDINGS

FINDINGS	NO. OF PT.	%
Bilat. Inf. turb. hypert.	250	100
Mild septal deviation	167	66.8
Lt.	100	40
Rt.	67	26.8
Septal thickening	100	40
Pale mucosa	50	20
Previous surgical scar	8	3.2
Inferior turb. ulceration	8	3.2

TABLE [VIII]: X-RAY FINDINGS

FINDINGS	NO. OF PT.	%
Soft T. Sh. Of I.T.H.	250	100
Mucosal thickening(M.S)	208	83.2
Bilateral	192	76.8
Unilateral	16	6.4
Hazy ethmoidal sinuses	92	36.8
N.A.D.	42	6.4
Hazy frontal sinuses	16	16.8

TABLE [XI]: SURGICAL PROCEDURES

TYPE OF SURGERY	NO. OF PT.	%
Inferior turbinate		
Trimming R.	142	56.8
L.	108	43.2
SMD R.	108	43.2
L.	142	56.8

TABLE | XII |:

RESULT OF T.T.	1W. %	2W. %	3W. %	1M. %	2M. %	3M. %	4M. %	5M. %	6M. %	7M. %	8M. %	9M. %
Good air way	56.8	93.2	90	96.8	96.8	96.8	96.8	100	100	100	100	100
Congested Mu	46.8	20										
Oedema	43.2	6.8	6.8									
Crust	20	23.2	10	6.8	3.2							
Adhesions			3.2	3.2	3.2	3.2						
Sinusitis						3.2	3.2					
Mid turb.Hyp.												
RESULT OF T.T	1.6 y%	2 y%	2.6 y%	3 y%	3.6 y%	4 y%	4.6 y%	5 y%				
Good air way	100	100	100	100	100	100	100	100				

RESULT OF SMD	1W. %	2W. %	3W. %	1M. %	2M. %	3M. %	4M. %	5M. %	6M. %	7M. %	8M. %	9M. %
Good air way	20	46.8	63.2	80	83.2	83.2	80	86.8	83.2	86.8	86.8	86.8
Congested Mu.	50	16.8	6.8	3.2								
Oedema	66.8	40	20									
Crust	43.2	36.8	20	13.2	3.2	3.2						
Adhesions	13.2	13.2	6.8	6.8	3.2	3.2	3.2		3.2		3.2	3.2
Sinusitis				3.2								
Mid. T. Hypert.					3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
Inf. T. Hypert.					6.8	10	10	10	10	10	10	10
Bleeding	3.2											
RESULT OF SMD	1.6 y%	2 y%	2.6 y%	3 y%	3.6 y%	4 y%	4.6 y%	5 y%				
Good air way	60	56.3	49									
Inf. T. Hypert	35	36.2	37.1									

DISCUSION:

In a review of current practice in 1951, House stated that partial or complete inferior turbinectomy has largely been abandoned due to the profound physiological changes such surgery produces. These traditional views have been supported by a recent study (Moore 1985) in which an extended follow-up was made of 18 out of 40 patients undergoing total inferior turbinectomy. In this study 16 patients reported that nasal crusting had developed following surgery with 12 showing crusting on inspection crusting on inspection.

Odetoyinbo and Ophir 1987 found post operatively that there was no crust formation or dryness. Richardson 1948 and Thompson and Negus 1948 found a formation of crust. Martinez 1983 found (6.9%) crusting and (10.35%) dryness. Dawes 1987 found (4.44%) crusting.

Moore 1985 found 11 patients were dissatisfied with their nasal patience, relieve of nasal obstruction was 81.2% good results & 12.5% poor results [Bhargave, Shirali, Ahhyankar & Gadre 1987]. Odetoyinbo 1987 finding on post

operative examination wide patent nasal air way in 95%. Ophir 82% improvement in airway. Meredith 1988 found from 22 patients 100% had nasal obstruction & after SMD improvement was 88% Enthusiasm for radical trimming of the turbinates has however been expressed by other authors: Martinez 1983, Courtiss 1978, Ophir 1985, Fry 1973. Fry reported earlier work by Caust, where 200 patients underwent turbinectomy 1 patient develop rhinitis sicca. Odetoyinbo 1987 finding on post operative examination 1 patient reported a foul odor. Ophir found that there was no foul odor post operatively. Nabil Fanous found no signs of atrophic rhinitis

Fry reported 13 out of 200 patients had postoperative hemorrhage of varying severity. A study by Dawes 1988 shows an over all hemorrhage rate of 8.9% only 3% require further treatment under general anaesthesia. Nabil Fanous found the only true complications of turbinectomy is post operative bleeding 2.7% cases recorded. 1 patient readmitted for transfusion. Meredith 1988 record 4.9% bleeding after trimming turbinates. Only 1 patient out of 126 develops bleeding after SMD (White & Murray 1987). Pollock & Rohrich 1984 record 8.6% hemorrhage cases as a complication post operatively. Courtiss 1978 record 3.41% hemorrhage cases. Martinez 1983 record 3.45% as hemorrhage cases post operatively. Ophir 1987 record 4.67%. Other study by Fry record 6.5%. Dawes 1987 record 8.89% bleeding cases post operatively. Bhargave, Shirali, Abhyankar & Gadre 1987 work was resulted 15 out of 27 were male, the age ranged from 16-30 years. White & Murray 1987 the patient was ranged from 5-15 years operated upon them as SMD. Bhargave, Shirali, Abhyankar & Garde 1987 results was sneezing 77.8% good [0-5 sneezes/day] [6-10 sneezes/day] were fair results & account 11.1% poor results 11.1%, rhinorrhea 66.7% good & 11.1% poor. Ophir record 27% improvement, headache 80% good results & 20% poor results. ,adhesion in 1 patient

White & Murray 1987 found out of 70 patients with adhesion 49% required a general anaesthetic to solve the problem. 33% required a local anaesthetic to divide the adhesions. Ophir 1987 found that adhesion account 4% after nasal surgery. Dawes 1987 found adhesions account 4.44%. Recurrence of symptoms over 3 years period recorded by Bhargave, Shirali, Abhyankar & Grade 1987. Odetoyinbo found 58% were aware of an olfactory disability. Meredith 1988 found 59% had recurrent sinusitis underwent SMD. Dawes found 3.33% as post operative infection. Toxic shock syndrome a rare case record developed after turbinate

surgery.[Huang, Podkomorska, Murphy, Hoffer, Jacobson & Kasworm 1986].

CONCLUSIONS:

The management of hypertrophic inferior turbinates in chronic rhinitis remains a matter of controversy. The place of radical trimming of the inferior turbinates in the treatment of this condition has to be established.

The inferior turbinate has a rich vascular supply necessary for its function of warming & humidifying inspired air. Bleeding from this structure both pre-operatively and post-operatively is a well recognized complication of turbinate surgery specially turbinectomy & vary in severity from mild requiring no treatment to severe life threatening hemorrhage. In those not controlled by (48) hours nasal packing or required treatment under anesthesia using diathermy or trimming of mucosal tags together with anterior & posterior nasal packing which resulted in prompt & continued arrest of hemorrhage.

Nasal obstruction results in impaired olfactory function. Odor perception in man is involved in orientation, in self-protection, in alimenation & in enjoyment of a food, wine, flowers, perfumes, etc., those influencing the quality of life at the sensual & emotional level.

The causes of turbinate hypertrophy are multiple, as a result chronic temporary hypertrophy becomes irreversible, at least with out topical agents shrinking the lining, so conservative management of nasal obstruction is a waste of time.

There is a consensus that inferior total turbinectomy improves nasal air ways in the absence of gross septal deviation. The theoretical complications of atrophic rhinitis, rhinitis sicca & the actual complications of post operative hemorrhage, adhesion formation & diminution of olfactory acuity must be assessed in the light of the undoubted benefit of the operation.

Under local anesthesia adhesions devided & packed with sufratoll which left inplace for (5-7) days to let healing process take place.

SMD causes shrinkage of the mucous membrane of the inferior turbinate by destroying some of its large cavernous blood spaces or sinusoids. This initiates the formation of fibrous tissue anchoring the mucosa to the periosteum. There was a noticeable reduction in the number & congestion of the tunical blood vessels & their lumina became less dilated. This might be responsible for the diminished edema & cellular infiltration from the blood. Interruption of many terminal cholinergic nerve fibers in the turbinate might result from the heat of diathermy & this may be responsible, in addition to the coagulation, for the reduction in number & activity of the nasal glands.

Cryosurgery relieve the sensation of nasal obstruction more reliably than they reduce nasal resistance. This may depend in part upon the disease process.

Submucosal resection of inferior turbinate recently used to reduce the bulk of the turbinate & or change the position for cases caused by hypertrophy of inferior turbinate & has its advantage in which no crust formation found but to a less extent benefit from turbinectomy advantage in relieving nasal obstruction for the same cause.

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