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A Study Of, Role of Contact Points in Nose- As a Causal Factor In refractory headaches and the Outcome Of surgical Management.

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Abstract
The causes of headache are multi-factorial.Contact points may be a cause of secondary headache or anexacerbating factor for primary headaches.Mucosal contact headache is a newly added secondary headache disorder in theInternational Classification of Headache Disorders (ICHD-2) supported by limited evidence.
AIMS-
1. To evaluate the outcome of Surgical treatment of patients with refractory headaches with intranasal mucosal contact points.
2. To find out the most common contact point related to headache.
3. To find out the most common region of headache due to intra nasal mucosal contact point.
50Patients of chronic headache for 6 to 50 yrs duration without any sinus diseasesand a with a finding of contact point in CT Nose &PNS were presented at ENT out patient department with in the time period from october 2020 to september 2022.A detailed history were taken, clinical and systemic examination prior to otorhinological examination .A routine diagnostic nasal endoscopy followed by NCCT Nose &PNS to find out the point of contact.Once the diagnosis was made and consent was obtained, scheduled for FESS.All patients were followed up from 2 months to 6 months.Patients with chronic refractory headache / transformed migraine should be assessed for mucosal contact point headache and its appropriate surgical management for cure.
Keywords- *functional endoscopic sinus surgery,migraine, refractory headache, mucosal contact points.*

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I. Introduction

The causes of headache are multi-factorial varying from simple tension headache, migraine, myo-facial spasm , tempero-mandibular joint arthralgia, vascular headache, refractory errors of vision , and brain tumors. It requires a multidisciplinary approach to diagnose the causative factors.
Contact points may be a cause of secondary headache or anexacerbating factor for primary headaches[3]. Mucosal contact headache is a newly added secondary headache disorder in theInternational Classification of Headache Disorders (ICHD-2) supported by limited evidence.
According to the ICHD-2, these headaches are characterized by intermittent pain localized in the peri-orbital and medialcanthal or temporo-zygomatic regions, associated with evidence of mucosal contact points by nasal endoscopy or computedtomography (CT) imaging.
The contact between the structures, in addition to being a mechanical stimulus in those regions considered as origin of the pain, promote local inflammatory process, with release of mediators that are related with thepainful process. The presence of mediators as substance P and histamine reduces pain threshold in the nasal mucosa receptors.[1]
The theory of the local reflex triggered by contact between structures, with release of vasoactive amines and onset of edema is a mechanism valued by the literature.[3]
This mechanism can be the substance P as a mediator of the reflex. P substance is a neuropeptide known since 1931 and found in sensitive nervous fibers of the nasal and paranasal mucosa, among other sites.[6,7]

Here we assess the headache outcome after the surgical correction of contact points in the sino-nasal area (intra-nasal contact between opposing mucosal surfaces) in patients with chronic headaches.

AIMS & OBJECTIVES

1. To evaluate the outcome of Surgical treatment of patients with refractory headaches with intranasal mucosal contact points.
2. To find out the most common contact point related to headache.
3. To find out the most common region of headache due to intra nasal mucosal contact point.

II. Materials And Methods

These 50 patients of chronic headache were then subjected to detailed ENT examination. The youngest patient was 18 years and oldest 41 years.

All the patients were suffering from headache varying from 6 months to 5 years time. Headache was present in temporal, frontal, frontotemporal, neck and malar region in isolation or in combination of more than one location. It was intermittent with exacerbations, recurrent episodic or continuous dull ache.

All the patients were subjected to detailed history taking, clinical and systemic examination prior to otorhinological examination to rule out any systemic causes like hypertension, migraine, tension headache,neurological causes, ophthalmological examination to rule out refractory errors, gynaecological check up to eliminate premenstrual tension and premenopausal syndrome as cause of headache.

A detailed history of headache was taken, ENT examination was done in those patients.

A routine diagnostic nasal endoscopy under Local Anaesthesia was done to find out any contact point in nasal cavity ,followed by NCCT Nose & PNS.

Once the diagnosis was made and consent was obtained, surgery was scheduled. This procedure required general anaesthesia. The area between the septum and middle turbinate and/or ethmoid sinuses were visualized and the contact point was identified.

The surgery (FESS) included septoplasty, middle turbinectomy, uncinectomy and ethmoidectomy. Septoplasty was always performed first, followed by a middle turbinectomy in order to gain access to the medial wall of ethmoid cells. Next, the ethmoidectomy was performed, and the medial wall of ethmoid sinuses were removed. Patients who had contact between the septum and middle turbinate had a partial middle turbinectomy and septoplasty performed.

For follow-up headache information was obtained using standardized questionnaires at baseline and at follow-up visit(2–6 months after surgery).

At baseline we collected information on headache frequency, severity (10- point ordinal scale, where 0 was no pain and 10 was pain as bad as it can be), At follow-up we repeated the same questionnaire.

Inclusion criteria:

(i) Refractory headaches (failed to standard pharmacological headache treatments) for 6 months to 5yrs duration.

(ii) Diagnostic nasal endoscopic and/or CT imaging evidence of mucosal contact points without acute rhino-sinusitis. Contact points had to be present on CT scan.

(iii) During a headache attack, patients reported significant improvement after topical anaesthesia to the contact area.

(iv) Both male & female.

(v) Age group from 18 years to 50 years.

(vi) Patients submitted to endoscopic sinus surgery andseptoplasty for contact point headache.

Exclusion Criteria:

(i) Evidence of any sinus disease that could explain the headache symptoms.

III. Result

A total of 50 cases in ENT outpatient in the year October2020- September2022 -with chronic refractory headache those meets the inclusion criteria – were included in the study. The youngest patient was 18 years and oldest 41 years.

- The patients presenting were in the Age range of 18 yrs to 41yrs. The mean age of presentation was 26.7 years.
- 26 were females (52%) and 24 were males(48%).

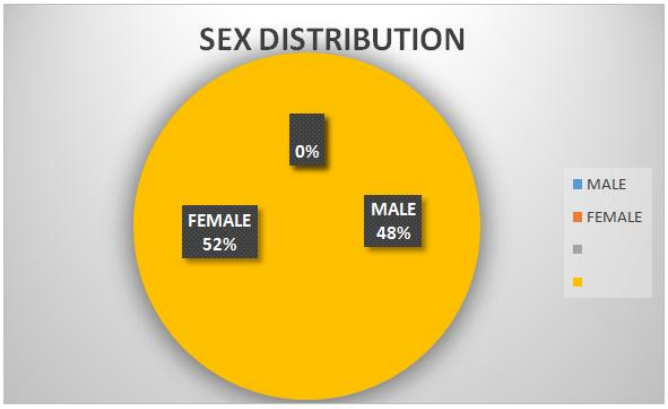

Figure 1 PIE CHART SHOWING SEX DISTRIBUTION

Anatomical Variants:

❖ It was found that 14 patients suffered from deviated nasal septum with spur (26%).

a) Isolated deviated nasal septum- 6,
b) Deviated nasal septum with middle turbinate variation- 5,
c) With inferior turbinate hypertrophy– 3.

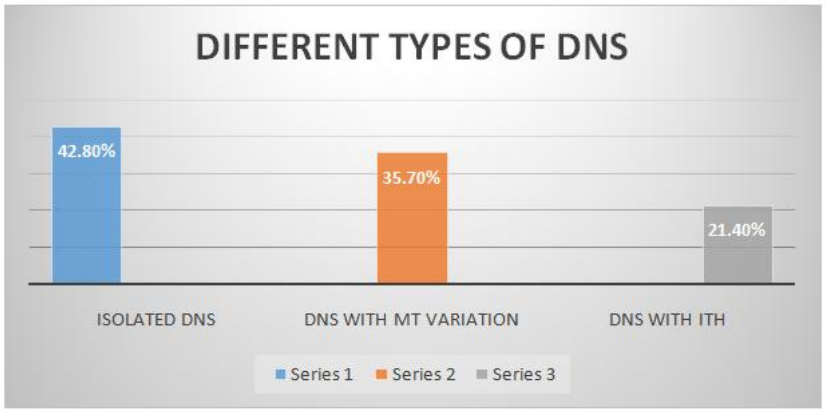

Figure 2 TYPES OF DNS

❖ 21 patients had Concha bullosa-44%

a) Unilateral – 10,
b) bilateral -7.
c) Concha associated with lateral nasal wall variation – 3.
d) Associated with septal variation- 4 .

❖ 10 patients had over pneumatised bulla (26%)

a) Unilateral- 4,
b) bilateral- 6

❖ 5 Patients had paradoxical middle turbinate (10%).

a) unilateral -0,
b) bilateral-5

❖ 2 patients had prominent agger nasi -4 %

a) unilateral-1 ,
b) bilateral-1 .

❖ 13 patients had associated nasal blockage (26%)

a) unilateral-7,
b) bilateral-6 .

Region of Headache :

- ❖ 16 patients had frontal headache
a) unilateral-12,
b) bilateral-4.
- ❖ 12 patients had temporal headaches
a) unilateral-7,
b) bilateral-5.
- ❖ 7 patients had fronto temporal headache
a) unilateral -7,
b) bilateral-0.
- ❖ 10 patients had pain all over head.
- ❖ 5 patients had unilateral facial pain.

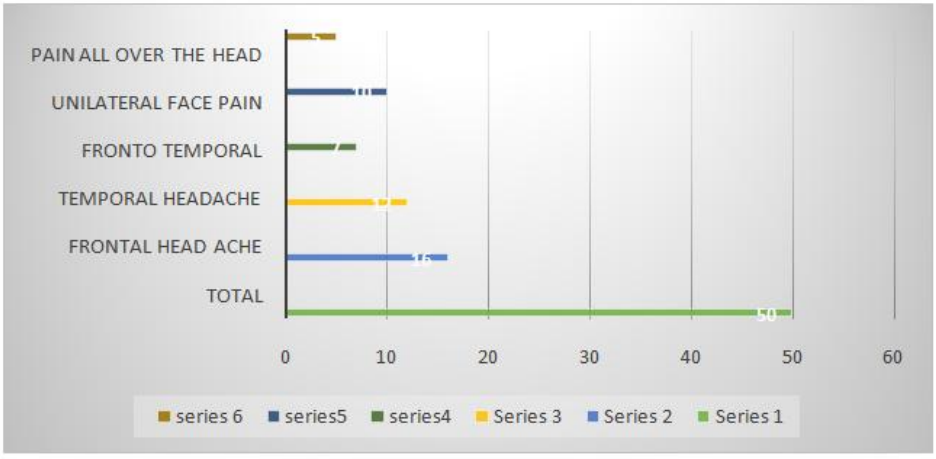

Figure 3 different types of headache

A total of 50 patients 16 subjects (32%) had headache at frontal region followed by 12 subjects (24%) had headache at temporal region.

Mucosal contact zones

CONTACT ZONE	Right Left	Left Both	Both Right	TOTAL
MTWITH SEPTUM	8	5		13
MT WITH LAT. NASAL WALL	10	7	13	30
ITWITH SEPTUM	3	1		4
SEPTUM WITH AGGER		3		3

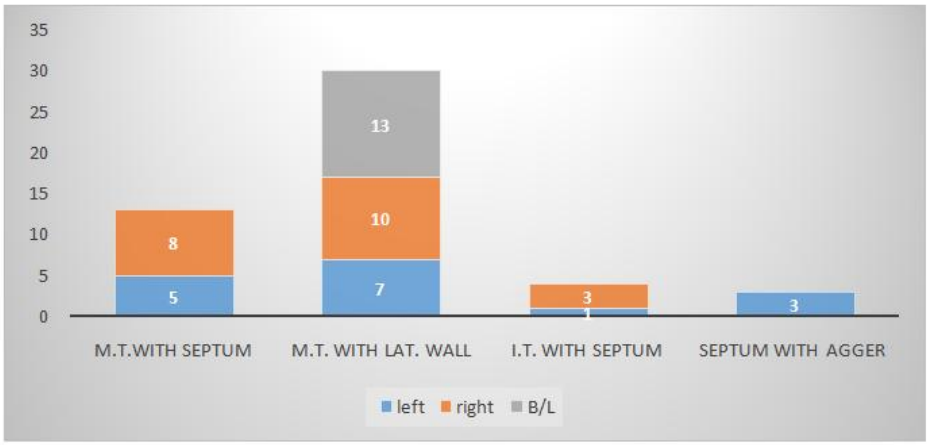

Figure 4 MUCOSAL CONTACT ZONE

The commonest mucosal contact zone is found to be between middle turbinate with lateral nasal wall, followed by middle turbinate with nasal septum-30 .

Common surgical procedures :

1. Lateral lamellectomy -total-15,
a) unilateral-5,
b) bilateral-10
2. Lateral lamellectomy &uncinectomy, MMA- total-5
3. Laterallamellectomy&Ant.ethmoidectomy-total-13,
a) uni-6,
b) bilat-7
4. Sub mucous resection of septum- 11
5. Sub mucous resection of septum& lateral lamellectomy-4
6. Agger nasi cell removed- 2

Follow up :

All patients were followed up from 2 months to 6 months .

a) At 2 months post operatively : The headache was relieved in 43 patients & 7 patients had headache.
b) After 6 months post- operative : only 5 patients had headache and 45 patients relieved of their symptoms.

The Mean Headache Frequency was reduced from 14.2 days to 2.4 days after 2 months of surgery. The Mean Headache Severity was reduced from 5.9 to 1.48 at 2months.

Overall, 86 % of patients - felt marked improvement in their headache, while 8% had moderate and 6% had mild symptoms of headache at the end of this study.

IV. Discussion

Very few studies have assessed the surgical treatment of mucosal contact point headaches. Limited studies show good surgical results in patients with contact point headaches.

Mahajan et al 2003 the occurrence of male female ratio of contact headache was 15:17, where as in current study 24:26.The commonest age group of occurrence of contact headache was
between 21to30 years i.e 43% also same in our study i.e50%.

***Anatomical variants were compared with other studies*.**

Deviation of the nasal septum was found in 26% of cases in the present study . In other studies, 44% in Hemant chopra,12% in Joe et al,3% in **mahajan et al**,34% in **Linnares,brazil**.

Concha bullosa was found in our study is 44%.in other studis,16% in **Hemant chopra**,37% in **Joe** et al,8% in **mahajan et al**,34% in **Linnares,brazil.**

Paradoxical middle turbinate was found in our study is 10%,in other studies 10% in **Hemant chopra**,14% in **Linnares,brazil**.

Agger nasi cells are 6% in our study,40% in **Hemant chopra**,6% in **mahajan et al**,13.5% in **Linnares,brazil**.

The Mean **Headache Frequency** was reduced from 14.2 days to 2.4 days after 6 months of surgery. The Mean **Headache Severity** was reduced from 5.9 to 1.48 at 6 months These parameters are compared with **F Behin Etal 2004**.

Follow up:

In our study, in a series of 50 patients , 86% had significant improvement after 2 month of surgery.

As per the study conducted by **Tousun F, Gerek M on 2000** showed , In a series of 30 patients, total relief was achieved in 43% of patients, significant improvement in 47% of patients, after endoscopic sinus surgery.

A similar study by **Harley DH, Powitzky ES**, clinical outcome for the surgical treatment of sinonasal headache,2003 retrospectively analysed 34 patients who presented with headaches ,were subsequently found to have contact point between the nasalseptum and atleast one turbinate. After surgery,reduction in headache intensity was reported by 91% and reduction infrequency by 85% of patients.

As per **V .J. Novak, MD. -** Most patients {356, 80%) were asymptomatic postoperative1y, (45, 10%) had a sensation of pressure in the head on rare occasions but no further migraines, and 45 (10%) continued to experience headaches that occurred only rarely and were mild and of short duration. The overall success rate was 98%.

V. Conclusion

Surgical corrections of Contact points in the nose by FESS results in relief of Intractable Headache. The results of surgical outcome of treatment of Contact headache is evident - mostly within 2 months of treatment.

Contact point - as an etiological factor for headache is more relevant in 20-30 years age group(3rd decade) i.e. after completion of development of facio-maxillary skeleton.

The most frequent contact point for headache is Middle Turbinate with lateral nasal wall.

Refractory headache can be successfully treated in carefully selected patients after precise pre-operative localisation of exact points by modern investigations (NASAL ENDOSCOPY) and appropriate surgical interventions (FESS).

Patients diagnosed to have chronic refractory headache / transformed migraine should be assessed for MUCOSAL CONTACT POINT HEADACHE and its appropriate SURGICAL MANAGENENT for CURE.

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