

The Xylocaine Test As A Prognostic Aid For Surgery In Sluder's Neuralgia

Hani Musa Bader,* C.A.B.M.S. (Oto.), F.I.C.M.S. (Oto.)

Mazin N. Fatoohi,* F.I.C.M.S. (Oto.)

Hamed M. Mohammed,* F.I.C.M.S., C.A.B.M.S (Oto.)

Mohamed D. Ahmed,* F.I.C.M.S., C.A.B.M.S (Oto.)

Summary:

Background: Patients with facial pain without any overt disease especially of the nose and paranasal sinuses are often diagnosed as having Sluder's neuralgia. Large middle turbinates or septal deflections compressing the ethmoidal nerves have been regarded as one of the causes of this pain in those who have their sinus computed tomography (CT) clear.

Objectives: To evaluate the xylocaine test as a prognostic aid for surgical treatment for Sluder's neuralgia.

Methods: Sixty-one cases were seen; all of them had the xylocaine test positive. They were treated surgically by endoscopic middle turbinectomy or septal surgery.

Results: All had relief from the symptoms 4 months postoperatively, except in five cases relief was achieved after revision surgeries for intranasal synechia.

Conclusion: The xylocaine (10 per cent) test seemed to be a good prognostic aid for the surgical procedures for those with Sluder's neuralgia when medical treatment did not seem to relieve the symptom.

Key words: Sluder's neuralgia; Xylocaine test, surgery.

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Introduction:

Sluder (1927) originally described the anterior ethmoidal syndrome. In this condition the pain radiates vertically from above the line of the superciliary ridge, to right or left, and downwards into the nasal bones and occasionally as far as the tip of the nose. The pain has no periodicity and is rarely very severe. But its there and wearing eye glasses can be uncomfortable. Usually this pain starts as a result of pressure irritation on the medial branches of the anterior ethmoidal nerve as they descend submucosally over the anterior part of the middle turbinate and the corresponding part of the nasal septum. Contact between these two areas is known to provoke this pain. Probing this area produces the pain and application of a local anaesthetic agent relieves the pain. Surgical procedures such as septoplasty, submucosal resection of the nasal septum (SMR) or middle turbinectomy should cure this condition.

Rhinogenic facial pain has been recognized for many years. Chronic rhinosinusitis does not cause any facial pain unless some kind of complications has supervened. Surgical treatment aimed at reduction of the middle turbinate is reported to be an effective way with which to resolve this pain in a selective number of patients (Warkins, 1970; Morgenstein and Myles, 1980). Still criteria for patient selection is to be studied.

Method:

Seventy-six patients were seen from 2002-2006 who were diagnosed as having Sluder's neuralgia. The nose was sprayed with xylocaine (10 per cent) solution and the entrance of the anterior ethmoidal nerve was anesthetized by probe with cotton wool soaked in the same solution. The pain disappeared within five to 10 minutes in all the patients. The application of an anaesthetic agent to the nose is used as a diagnostic and prognostic aid for postoperative pain relieve. Patients with negative xylocaine test were excluded from the study.

Xylocaine test:

The nose is sprayed with xylocaine (10 per cent) solution. Two puffs were directed towards the roof of the nasal cavity. Then two cotton wool carriers, soaked in the same solution, placed intranasally between the middle turbinate and the nasal septum in the area where the branches of the anterior ethmoidal nerve run submucosally. This area is the part of the septum and the middle turbinate where they are in opposition to each other. With the positive test the symptom of pain disappears instantly. With the negative test the pain persists.

The 76 patients were then treated primarily with systemic decongestant (Actifed) and local steroid (Beconase spray), to reduce the size of the middle turbinate and also reduce the mucosal swelling on the septum. The duration of the treatment was six weeks to two months.

In 61 out of 76 patients, the pain recurred or persisted irrespective of medical treatment but when the local anaesthetic agent was re-applied to the

* Department of Otolaryngology, Head and Neck Surgery, Medical City, Baghdad, Iraq.

nose the pain disappeared in these 61 patients. The other 15 patients only 9 of them reconsulted us and found to have complete disappearance of pain.

However the 61 patients were thoroughly assessed for (i) their history and physical state, (ii) neurological consultation, (iii) evaluation of head and neck, (iv) plain sinus radiology, and (v) CT scanning.

Anterior rhinoscopic examination and nasal endoscopy of these 61 patients revealed the following abnormalities:

Group (A) (30 cases). The unilateral (21 cases) and bilateral (nine cases) middle turbinates were found to be grossly enlarged and lying close to the nasal septum. The septum was not deviated.

Group (B) (31 cases). A nasal septal deviation was found to the side of the pain. No abnormality of the middle turbinate was seen except that the deviated septum was touching it.

Group (C). Patients with both nasal septal deviation and middle turbinate enlargement were excluded from the study.

Group A were selected for endoscopic middle turbinectomy and Group B for nasal septoplasty or SMR.

Results:

Sixty-one patients with Sluder's neuralgia received surgical treatment. The mean age was 31 years (20- 44 years). Forty-one were male and twenty females. The bar-chart shows the age and sex distribution of the patients. Thirty cases had endoscopic partial middle turbinectomy and 31 had a septoplasty. The follow-up period was six months to one year. Tables I and II show the time taken to achieve total postoperative pain relief in Group A and B patients. In Group A, five patients returned with recurrence of symptoms and nasal endoscopy revealed the presence of nasal synechia between the middle turbinate and the septum and they had revision surgery done for release of synechia. In Group B no recurrence of symptoms was seen postoperatively.

Table I

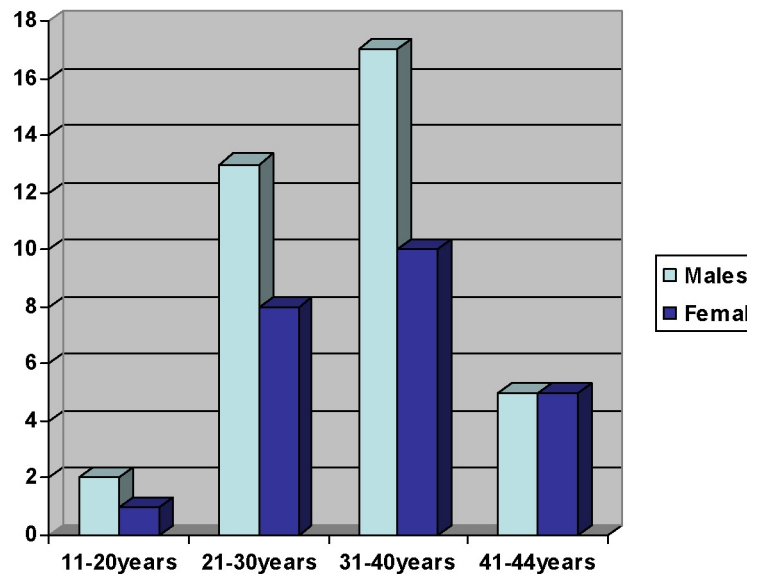
Time Taken To Achieve Total Postoperative Pain Relief: Group A (30 Patients)

17 patients	6 weeks
4 patients	8 weeks
2 patients	3 months
2 patients	4 months
5 patients	Revision surgery

Table II Time Taken To Achieve Total Postoperative Pain Relief: Group B (31 Patients)

16 patients	6 weeks
15 patients	8 weeks
0 patient	3 months
0 patient	4 months

**BAR-CHART
DISTRIBUTION OF CASES ACCORDING TO AGE AND SEX**



Discussion:

Patient with symptoms suggestive of chronic rhinosinusitis are often seen in the clinic by otolaryngologists. Headache or facial pain is the usual complaint but no definite intranasal pathology was detected when they were examined except anatomical irregularities like deviated nasal septum and/or large size, inferior or middle turbinates.

Extensive investigations on these patients usually show no significant paranasal sinus pathology. Warkins (1970), Morgenstein and Myles (1980) and Schsted-Madsen *et al*, (1986) suggested that anatomical variations related to the middle turbinate in contact with other intranasal structures may cause referred facial pain. Kamal, S. A. (1995) reported that rhinogenic facial pain may be due to compression of branches of anterior ethmoidal nerves either on the lateral surface of the nasal septum or on the medial surface of the middle turbinate. Friedman and Rosenblum (1989) and Stammberger and Wolf (1988) mentioned that intense mucosal opposition caused local irritation with the release of P substance, which mediate pain in the nasal mucosal lining.

The pain is usually dull and there is a constant sensation of fullness or pressure. The distribution of pain is the same as that mentioned by Sluder (1927). The pain can become intense at times. It has been mentioned by Stammberger and Wolf (1988) that local irritation resulting in reflex vasodilatation with release of bradykinin histamine and prostaglandins, which will produce pain.

Hansen (1968) Morgenstein and Myles (1980), Watkins (1970) and Stammberger and Wolf (1988) all advocated middle turbinectomy as a method of treating facial pain in those patients where conservative medical treatment did not succeed and

the xylocaine-like test was found to be positive. Gerbe *et al*, (1984) found a positive correlation between the relief of facial pain after topical application of vasoconstrictor nasal drops and the disappearance of symptoms after middle turbinate surgery.

In this series 61 cases were subjected to surgical procedures and they were all found to be positive for the xylocaine test. Time or duration of the symptoms in these cases was one to ten years and all had relief from the symptoms 4 months postoperatively, except in five cases relief was achieved after revision surgeries. The longest follow-up period was one year. These patients received medical treatment preoperatively, i.e. Beconase spray locally and systemic antihistamine-decongestant combination for a period of time without any improvement in their symptoms.

References

1. Friedman, W. H., Rosenblum, B. N. (1989) Paranasal sinus etiology of headache and facial pain. *Otolaryngology Clinics of North America* 22: 1059-1072.
2. Gerbe, R. W., Fry, T. L., Fisher, N. O. (1984) Headaches of nasal spur origin: an easily diagnosed and surgically correctable cause of facial pain. *Headache* 24: 329-330.
3. Hansen, R. M. (1968) Pain of nasal origin. *Laryngoscope* 78: 1164-1171.
4. Kamal, S. A. (1995) Experience with the xylocaine test as a prognostic aid for surgery in Sluder's neuralgia. *The Journal of Laryngology and Otology* 109: 193-195.
5. Morgenstein, K. M., Myles, K. K. (1980) Experiences in middle turbinectomy. *Laryngoscope* 90: 1596-1603.
6. Schsted-Madsen, N., Stoksted, P., Christen, P. H. (1986) Chronic headache related to nasal obstruction. *Journal of Laryngology and Otology* 100: 165-170.
7. Sluder, G. (1927) *Nasal Neurology, Headaches and Eye Disorders*. Kimpton, London.
8. Stammberger, H., Wolf, G. (1988) Headaches and sinus disease: the endoscopic approach. *Annals of Otolaryngology* 97(suppl 134):3-23.
9. Watkins, A. B. K. (1970) Middle turbinectomy headache. *Medical Journal of Australia* 21: 382-384.