

Experience with the xylocaine test as a prognostic aid for surgery in Sluder's neuralgia

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Abstract

Facial pain is a common symptom. Patients with this symptom without any overt disease of nose and paranasal sinuses are often diagnosed as having chronic rhinosinusitis. Thirty-six cases were seen and treated surgically by middle turbinectomy or septal surgery in this series. The xylocaine (10 per cent) test seemed to be a good prognostic aid for the surgical procedures. Medical treatment did not seem to relieve the symptoms. Larger series with control trials are recommended in order to establish this practice.

Key words: Facial pain; Nose, surgery

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 it is 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, SMR and middle turbinectomy should cure this condition.

Rhinogenic facial pain has been recognized for many years. A large middle turbinate or septal deflection compressing the ethmoidal nerves has been regarded as one of the causes of this pain. Chronic rhinosinusitis does not cause any facial pain unless some kind of complication has supervened. Surgical treatment aimed at removal or reduction of the middle turbinate is reported to be an effective way with which to resolve this pain in a selective number of patients (Watkins, 1970; Morgenstein and Myles, 1980). Criterion are not laid down for selecting the patients who would benefit from surgery.

Method

Fifty-six patients were seen by the author (S.A.K.) from 1983–1989 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 52 out of the 56 patients. The application of an anaesthetic agent to the nose is used as a diagnostic and prognostic aid for post-operative pain relief.

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 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 persisted.

The 52 patients were then treated primarily with systemic decongestant and local steroid (Beconase spray). The idea of this therapy is 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. The systemic decongestant and antihistamine used were Dimotapp (LA) and actified, Sudafed.

In 36 out of 52 patients, the pain recurred or persisted irrespective of medical treatment but when the local anaesthetic agent was re-applied to the nose the pain disappeared in these 36 patients. The other 16 patients did not return and were therefore lost to follow-up. Whether their symptoms recurred or disappeared is not known.

However the 36 patients were thoroughly assessed for (i) their history and physical state, (ii) neurological assessment, (iii) evaluation of head and neck, (iv) plain sinus radiology, (v) CT scan on some cases, (vi) haematology, biochemistry and bacteriology.

Anterior rhinoscopic examination of these 36 patients revealed the following abnormalities:

Group A (23 cases). The unilateral (15 cases) and bilateral (eight cases) middle turbinates were found to be grossly enlarged and lying close to the septum. The nasal septum was not deviated.

Group B (13 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 nasal septum was touching it.

Group A were selected for middle turbinectomy and Group B for nasal septoplasty or submucosal resection of the nasal septum. All of them had the xylocaine test done prior to surgery to reconfirm the diagnosis.

Results

Thirty-six patients with Sluder's neuralgia received surgical treatment. The mean age was 31 years (21–59 years). Twenty-eight were male and eight female. Twenty-three cases had a partial middle turbinectomy and 13 had a septoplasty. The follow-up period was six months to four years. Tables I and II show the time taken to achieve total post-operative pain relief in Group A and B patients. In Group A, two patients returned with recurrence of symptoms after two years and had revision surgery done to further debulk the middle turbinate. They were still xylocaine test positive and the pain disappeared completely after revision surgery. In Group B no recurrence of symptoms was seen two years post-operatively.

Discussion

Patients with a symptom complex suggestive of chronic rhinosinusitis are often seen in the clinic by the 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 larger size, inferior or middle turbinates.

Extensive investigations on these patients usually show no significant paranasal sinus pathology. Watkins (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. Friedman and Rosenblum (1989) and Stammberger and Wolf (1988) mentioned that intense mucosal opposition caused local irritation with the release of P substance, which mediates 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.

TABLE I

TIME TAKEN TO ACHIEVE TOTAL POST-OPERATIVE PAIN RELIEF: GROUP A (23 PATIENTS)

8 Patients	6 Weeks
5 Patients	4 Months
6 Patients	8 Months
2 Patients	15 Months
1 Patient	18 Months

TABLE II

TIME TAKEN TO ACHIEVE TOTAL PART-OPERATIVE PAIN RELIEF: GROUP B (13 PATIENTS)

4 Patients	6 Weeks
3 Patients	3 Months
2 Patients	6 Months
2 Patients	10 Months
2 Patients	18 Months

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 only 36 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 six months to eight years and all had relief from the symptoms 18 months post-operatively. The longest follow-up period was four years. These patients received medical treatment, i.e. Beconase spray locally and systematic antihistamine decongestants for a period of time without any improvement in their symptoms.

The findings in this study are interesting and need further verification for their validity using a larger series and a control group. In the xylocaine test the nose was sprayed first and then a cotton wool ball soaked in the same solution applied to the 'site'. The diffuse nature of this application may anaesthetize other sources of pain in the nasal cavity. However none of these 36 patients had pain post-operatively. Whether fibrosis followed by surgical trauma to the lining mucosa had eased the pain in some cases, is not known.

Conclusion

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. If the xylocaine test is found to cause relief of pain, then these patients may get cured of their pain by surgery to the middle turbinate and/or nasal septum.

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