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The place of endonasal endoscopy in the relief of middle turbinate sinonasal headache syndrome*†

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SUMMARY

Middle turbinate sinonasal headache syndrome is a rare but not uncommon treatable cause of headache. The true incidence of headache from this cause is unknown. Pneumatization (concha bullosa) or hypertrophy of the middle turbinate can result in it contacting the septum or the lateral nasal wall and may give headaches in the periorbital region. It may occur in the absence of inflammatory sinus disease. The clinical history, nasal endoscopic examination and, coronal CT-scan should point towards the diagnosis and a local anaesthetic challenge test should confirm the diagnosis. Treatment is by relieving the contact point by medical or surgical means. Twenty-one cases of middle turbinate sinonasal headache syndrome refractory to medical treatment are presented with emphasis on the results of endonasal endoscopic surgical treatment.

Key words: middle turbinate, headaches, concha bullosa, coronal CT-scan, endonasal endoscopy

INTRODUCTION

Many conditions can cause recurrent headaches. A less well-known cause is contact headache from an enlarged middle turbinate caused by pneumatization or hypertrophy. Wolff (1948) first recognized that sinonasal headache may occur in the absence of inflammatory sinus disease. He demonstrated in his trial on volunteers that stimulation of the anterior aspect of the middle turbinate or the septal region opposite the anterior middle turbinate (both innervated by the anterior ethmoidal nerve) caused referred pain in the inner canthal or supraorbital region. Greenfield (1990) attributed the referred pain to the fact that afferent fibres of the trigeminal nerve from the nasal mucosa and the cutaneous divisions relay into the cortex together. Stammberger et al. (1988) postulated that stimulation of the nasal mucosa may be involved in the release of substance P. Blaugrund (1989) and Goldsmith (1993) documented the relation between concha bullosa and middle turbinate sinonasal headaches syndrome.

MATERIAL AND METHODS

Twenty-one patients with the diagnosis of middle turbinate sinonasal headache syndrome refractory to medical treatment were treated by the author in the period from 1989 to 1993. The diagnosis was based on clinical presentation, anterior rhinoscopy, endonasal endoscopy, coronal CT-scan and positive results to a local anaesthetic challenge test. The test involve the use of topical surface anaesthesia in the form of 10% lignocaine solution or a placebo (normal saline) applied to the site of contact between middle turbinate and septum. A positive result was conformed by true positive total relief of symptoms. The surgical technique involves selective excision of either medial or lateral aspect of middle turbinate or partial middle turbinectomy. Patients were followed up on a weekly basis for three weeks and every three months thereafter.

RESULTS

Twenty-one patients diagnosed as having middle turbinate sinonasal headache syndrome refractory to medical treatment were studied retrospectively. The average age was 32 years, ranging from 21-48 years. The male to female ratio was 2:1. The average follow-up period was eight months with a range from 3 to 16 months. Five patients had middle turbinate enlargement on anterior rhinoscopy, and in another seven patients middle turbinate enlargement and encroachment were suspected on endoscopic nasal examination. In 11 patients the diagnosis was suspected only after a CT scan. The CT scan in all patients failed to demonstrate any evidence of chronic sinusitis. Six patients had hypertrophy of the middle turbinates (two unilaterally and four bilaterally) and the remaining patients had concha bullosa (12 unilaterally and three bilaterally). All our patients were cured from their symptoms after surgery with no complications during the follow-up period.

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DISCUSSION

Sinonasal headaches are usually caused by inflammatory disease of the sinus or its ostium. However, sinonasal headaches may occur in the absence of inflammatory sinus disease. Theoretically, an enlarged middle turbinate, most commonly due to concha bullosa, can contact the septum or lateral nasal wall and give rise to headaches referred to the ophthalmic division of the trigeminal nerve (the main sensory innervation of the anterior part of the middle turbinate). The pain is usually unilateral, intermittent and can be associated with a sense of nasal congestion. As the nasal mucosal congestion is mediated by gravity, the pain decreases when the patient is in the vertical position or in the supine position with the affected side down. Pain usually increases when bowing down and when prostrate. There are generally no associated signs of sinusitis. The headaches usually last only several hours, but recur frequently. Coronal CT is presently the most accurate radiographic method for determining enlargement of the middle turbinate whether due to hypertrophy or pneumatization. The diagnosis is usually confirmed by obtaining complete relief of the headache by applying local anaesthesia to the septum at the anterior middle turbinate contact point. The initial treatment should be medical. Surgical treatment should be considered when medical treatment fails to relieve the symptoms. Surgery includes turbinate resection, or selective removal of the medial or lateral half of the middle turbinate.

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