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Antroconchopexy for surgical treatment of perennial rhinitis

F.J. Lannigan and M.J. Gleeson

Guy's Hospital, London, United Kingdom

SUMMARY

We report on a rhinomanometric assessment of eleven patients undergoing antroconchopexy for relief of a "stuffy" nose. This little-known procedure involves the lateralization of the inferior turbinate through a large intranasal antrostomy. Our results demonstrate a significant improvement in postoperative inspiratory and expiratory nasal resistance. There was also a significant improvement in patient's scoring for nasal obstruction. Finer points of the surgical technique, and indications for the procedure are discussed.

INTRODUCTION

Surgery for the "stuffy" nose is problematic. Despite extensive assessment, there is no widely-accepted, long-lasting surgical treatment for this common ailment. Current practice aims to decrease nasal resistance by reducing obstruction secondary to hypertrophy of the inferior turbinates. The various procedures used to achieve this involve two principles, either reduction of the bulk or lateralization of the inferior turbinates. Submucous resection or submucous diathermy combined with out-fracturing of the inferior turbinates fulfill both requirements (Brain, 1987). However, these and other procedures (involving cauterization, electrocoagulation or cryosurgery of the inferior turbinates) have been criticized for their disappointing long-term effect (Ophir et al., 1985). Partial or total inferior turbinectomy has, in the past, been considered to carry an unacceptable risk of atrophic rhinitis. More recent opinion disputes this, and satisfactory results have been reported using total turbinectomy (Ophir et al., 1985; Wight et al., 1988).

We wish to report a prospective study of "antroconchopexy" (ACP) for the surgical treatment of perennial rhinitis. ACP involves lateralizing the inferior turbinate through a large inferior meatal antrostomy, so that the bulk of the inferior turbinate is retained within the maxillary antrum. The procedure has been described previously (Fateen, 1967; Legler, 1976), but this is the first report to have subjected results to prospective analysis.

MATERIALS AND METHODS

Twelve consecutive patients undergoing surgery were selected for study (5 male and 7 female; age range 23–49, mean age 30 years). All patients suffered from uncomplicated perennial rhinitis for a minimum of two years and had failed to respond to prolonged, continuous medical treatment (at least four months). All complained of nasal obstruction, four patients also complained of rhinorrhoea. Five patients were diagnosed as allergic and the remainder as vasomotor rhinitis, on the basis of history and serum IgE estimations. Preoperative sinus X-rays were normal in five patients; X-rays of seven patients were considered to show "mucosal thickening".

Patients were asked to make an assessment of general nasal patency using a visual analogue scale preoperatively, and six weeks postoperatively.

Posterior active rhinomanometry was performed preoperatively and six weeks postoperatively according to guidelines established by the European International Meeting on the Standardization of Rhinomanometry (Clement, 1984) using a commercially available rhinomanometer (NR3, Mercury Electronics Ltd, Scotland).

Operative technique

All procedures were performed by the same surgeon under general anaesthesia. Since little has been written about this operation, the technique will be described in detail.

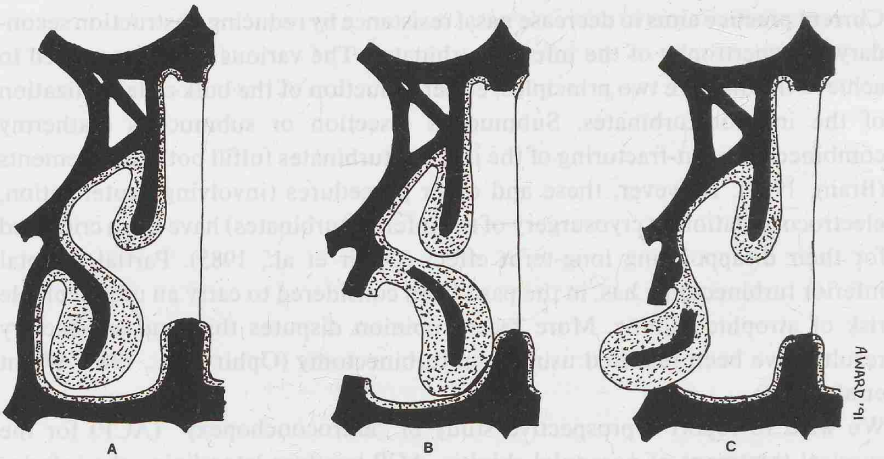

Figure 1 A: Preoperative appearance;
B: Inferior turbinate in-fractured medially, and large inferior meatal antrostomy fashioned;
C: Postoperative appearance with inferior turbinate out-fractured laterally through antrostomy.

The nasal fossae are first prepared using 25% cocaine paste. The inferior turbinates are in-fractured (medialized) to expose the lateral wall of the inferior meatus. The antrum is punctured, and a large intranasal antrostomy fashioned using punch forceps. At the posterior limit of the antrostomy, a 0.5-cm rim of the medial antral wall is preserved. The inferior turbinate is out-fractured (lateralized) through the antrostomy, so that its bulk lies within the maxillary antrum (Figure 1). Great care must be taken with the posterior end of the inferior turbinate as it extends beyond the posterior limit of the antrostomy.

The posterior end of the inferior turbinate must be lifted forwards with a Howarth's elevator whilst displacing the whole turbinate laterally. As the bulk of the turbinate passes into the antrum, the posterior end is "delivered" into the antrum using the tip of the elevator. The natural recoil of the posterior end of the inferior turbinate impinges against the posterior wall of the antrum and helps maintain the turbinate in its lateralized position.

The nasal cavity is packed with vaseline-impregnated gauze. This is removed on the first postoperative morning, and the patient is usually discharged later the same day.

RESULTS

There were no postoperative complications in this series. The results were analyzed using an unpaired Student's t-test. All the patients were pleased with the effect of surgery. This was demonstrated by a significant reduction ($p < 0.05$) in symptom scores for nasal obstruction. Three of the four patients with rhinorrhoea noted a subjective improvement in this symptom.

One patient was unable to tolerate rhinomanometry. In the remaining eleven patients, preoperative inspiratory and expiratory nasal resistance were compared to postoperative resistance. Mean inspiratory resistance fell from 0.97 $Pa/cm^3/s$ to 0.33 $Pa/cm^3/s$ ($p < 0.001$). Mean expiratory resistance fell from 1.34 $Pa/cm^3/s$ to 0.39 $Pa/cm^3/s$ ($p < 0.05$).

DISCUSSION

The majority of patients with uncomplicated allergic/vasomotor rhinitis obtain adequate symptomatic relief from medical treatment. All patients in this study failed to respond to high doses (2 puffs each nostril q.d.s.) of topical steroids over a period of 4 months. These results demonstrate the efficacy of ACP in relieving nasal obstruction due to allergic/vasomotor rhinitis.

When surgical treatment is proposed, it is essential that the patient understands that surgery does not "cure" the underlying pathology, regardless of the operation. This is especially so when contemplating electrocoagulation, cryosurgery or galvanocautery of the inferior turbinate, all of which provide only temporary relief. ACP does not "cure" the pathology, but it should provide more permanent relief of nasal obstruction. All patients in this series experienced a significant

improvement in nasal obstruction. However, we have noted other patients who require prolonged medical treatment postoperatively in order to achieve maximal relief of symptoms.

The follow-up period in this study is short, however ACP has been performed in this Department for almost 20 years. Long-term follow-up has not revealed any complications relating to altered mucociliary flow. The only postoperative complications encountered have been primary and secondary haemorrhage – which have responded to conservative management – and the formation of intranasal adhesions, particularly when ACP is combined with septal surgery. In this instance, we would recommend the use of silastic splints (with anti-staphylococcal prophylaxis) to prevent the formation of adhesions, as with other procedures involving simultaneous septal and lateral nasal wall surgery. We do not perform the procedure in children, or where radiography reveals hypoplasia of the maxillary sinus.

In conclusion, antroconchopexy offers an effective surgical option in the management of perennial rhinitis.

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F.J. Lannigan, FRCS
ENT Department
The General Infirmary
Great George Street
Leeds LS1 3EX
United Kingdom