

Septal mucoperichondrial flap for closure of nostril in atrophic rhinitis*

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SUMMARY

The aetiology of primary atrophic rhinitis is still unknown. Treatment of this disease is conservative in the first place. Surgery is indicated if the medical treatment fails. The aim of surgery is either to narrow the nasal cavity or in special cases to close the nostril. Closure of the nostril (Young's operation), is achieved by raising a circular skin flap. Raising the skin flap is difficult, the suture line may break down and an excessive scar tissue may form resulting in vestibular stenosis. We therefore developed a septal mucoperichondrial flap to close the nostril. This new and easy technique has been used to treat 17 patients with excellent results. The description of this technique and the results of surgery will be discussed.

Keywords: atrophic rhinitis, septal mucoperichondrial flap

INTRODUCTION

Primary atrophic rhinitis is a chronic disease characterised by progressive atrophy of the nasal mucosa and underlying bones and the formation of thick, dry crusts which emit odour in the greatly enlarged nasal cavity. The Latin names of rhinitis *fetida* and *rhinitis crustosa* characterise the disease. The Greek-derived term ozaena, meaning stenches, is a frequently used synonym for atrophic rhinitis.

The true aetiology of atrophic rhinitis has not been established. Hereditary factors and endocrine imbalances have been implicated; poor nutrition is another factor and Barnet (1965), considered that atrophic rhinitis is an Iron deficiency disease. Fouad et al. (1980), raised the possibility that atrophic rhinitis could be an auto-immune disease. Bacterial infection, especially of *Klebsiella ozaenae* is considered a superinfection.

Treatment of atrophic rhinitis is medical in the first place. The medical treatment consists of the correction of anaemia. Nasal irrigation with normal saline helps to remove the thick crusts. Instillation of glucose 25% in glycerine prevents the adherence of new crusts and inhibits saprophytic infection. Oral potassium-iodide has been used to increase the glandular activity and nasal secretion. Antibiotics have also been used for treating atrophic rhinitis (Nielsen et al., 1995).

Surgery is indicated if medical treatment fails. The aim of the surgery is to narrow the abnormally wide nasal cavity. This can be achieved by submucosal implantation of allogeneic or autogeneic spongiotic bone after the elevation of flaps from septum, nasal, floor and lateral wall of the nose (Cottle 1958; Van Bolhuis 1967; Huizing 1969; Chatterji 1980; Weir 1987). Vitallium, Acryl, Polyethylene, Silastic, Teflon and Proplast

(Whitehead, 1975) have also been used. Young (1967), has introduced the technique of closure of the nostril for atrophic rhinitis with good results but also with complications e.g. breakdown of the suture line and vestibular stenosis. In Al Hada hospital we developed a new septal mucoperichondrial flap to close the nostril. Description of this flap and the results of surgery will be discussed.

MATERIALS AND METHODS

Seventeen patients with atrophic rhinitis, 10 females and 7 males, between the age of 14-25 years underwent closure of the nostril using the septal mucoperichondrial flap. One nostril was closed to be reopened after a period of six months following which the other nostril then was closed. The patients were followed up for a minimum of one year post surgery.

The septal mucoperichondrial flap is raised by performing a hemitransfixion on the opposite side to the nostril to be closed. A five-millimetre mucoperichondrial flap is raised (Figure 1). The septal cartilage is incised to reach the plane under the mucoperichondrials of the other side and then dissection is carried out in this plane (Figure 2). In the nostril to be closed a short skin flap is raised at the intercartilaginous line and the raised mucoperichondrial flap is cut distally, inverted and then sutured to the skin flap using 5-0 Vicryl. The patients were followed up weekly for a month and then monthly for a year.

RESULTS

All the patients tolerated the procedure well. There was no breakdown of the suture lines. There was no vestibular stenosis. Nasal stent or nasal dilation were not required after reopening.

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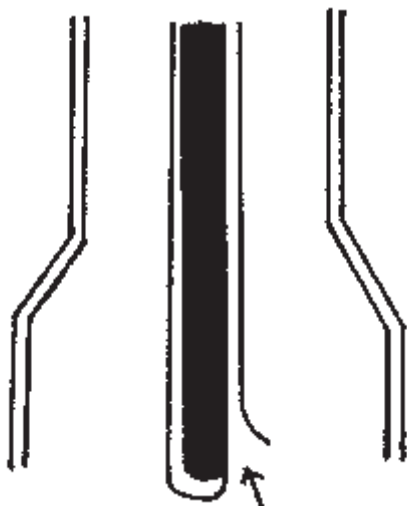


Figure 1 Hemitransfixation incision and elevation of the flap on the opposite side.

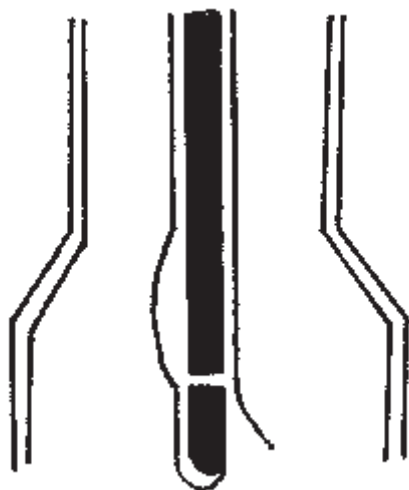


Figure 2 Cutting the septal cartilage and elevation of the flap on the side to be closed.

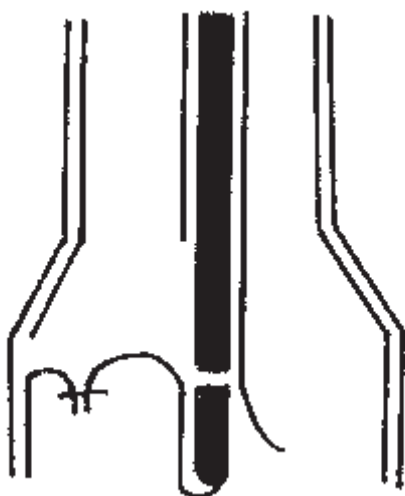


Figure 3 Cutting and inversion of the septal flap and suturing it to the skin flap.

Fifteen patients were cured. Two female patients had recurrence of the disease after two years and the procedure was successfully repeated for them with no reoccurrence to this present date.

DISCUSSION

The two surgical procedures most commonly used to treat atrophic rhinitis are Young's operation, narrowing of the nasal cavity using biological or non-biological implants. The use of autogenous bone graft taken of the iliac crest is associated with considerable morbidity and the bone graft may absorb. Previous inferior nasal antrostomy, complete submucous resection of the nasal septum and septal perforations may prevent the implantation of the bone or non-biological material. Despite advances in development of surgical implants and meticulous surgical techniques, artificial implants are often rejected (Goodman et al., 1992).

Young (1967), has introduced closure of the nostril for the treatment of atrophic rhinitis. This is achieved by raising a circular skin flap 1 cm cephalic to the alar rim. Raising this flap is difficult especially on the medial side. If the flap is not long enough, the suture line may break. Vestibular stenosis is reported after Young's operation with both nasal stent and nasal dilation being required. The septomucoperichondrial flap described in this paper is easy to raise. Suture line break-down was not seen as the flap is long. No cases of vestibular stenosis were observed in our series.

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