

Management of nasal septal perforation using silicone nasal septal button

Il trattamento delle perforazioni settali mediante l'uso di bottone transettale in silicone

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Key words

Nose • Nasal septal perforation • Treatment • Nasal button

Parole chiave

Naso • Perforazione del setto nasale • Terapia • Bottone nasale

Summary

Nasal septal perforation may present with various symptoms: epistaxis, crusting, secondary infection, whistling and nasal obstruction. Perforation may be treated by conservative pharmacological treatment or closed by surgical approach. A useful alternative is mechanical obturation, achieved inserting a prosthesis. The present report refers to a study on 15 patients (10 male, 5 female, mean age 38.5 years) treated by insertion of a one-piece or two-piece silicone septal button (Xomed). In the follow-up period, insertion of the nasal button reduced epistaxis, eliminated whistling during inspiration, and reduced nasal obstruction and crusting around the margin of the perforation. Contraindications are presence of acute infection with osteitis, chronic septal disease (Wegener), neoplasia and extremely large perforations. The latest buttons appear to be superior to the conventional type on account of plasticity and adaptability which offer greater conformity to the septum. This study also reveals that the new septal button is well tolerated by patients.

Riassunto

La perforazione del setto nasale può manifestarsi con diversi sintomi tra cui epistassi, crostosità sierosematiche endonasali, infezioni secondarie, rumore inspiratorio e difficoltà respiratoria. Questa condizione patologica può essere trattata in modo farmacologico conservativo o aggredita chirurgicamente al fine di chiudere la perforazione settale. Una eccellente alternativa è rappresentata dalla possibilità di occludere il foro settale meccanicamente, ovvero mediante l'inserzione di un bottone nasale in silicone (Xomed). Presentiamo uno studio in cui sono stati seguiti 15 pazienti giunti alla nostra osservazione per perforazione settale, di cui 10 maschi e 5 femmine, la cui età media era di 38,5 anni, trattati mediante inserzione di bottone nasale settale in silicone, sia il tipo "one-piece" che il "two-piece". In conseguenza della inserzione del bottone nasale, durante il follow-up abbiamo rilevato: risoluzione dell'epistassi; scomparsa, quando presente durante l'inspirazione, del fastidioso rumore inspiratorio; riduzione delle crostosità sierosematiche ai margini della perforazione settale e soprattutto un miglioramento della sensazione di ostruzione nasale. Controindicazioni alla adozione del bottone per setto nasale sono rappresentate da: presenza di osteite o di infezioni acute o croniche, patologie croniche del setto nasale (Wegener), neoplasie, perforazioni settali molto ampie. Gli otturatori in silicone si sono rivelati superiori ai bottoni di diversi materiali precedentemente proposti grazie alla loro caratteristica malleabilità e adattabilità che si esprime in un notevole comfort e tollerabilità.

Introduction

Nasal septal perforation may be of infective, traumatic, iatrogenic, inflammatory, chemical or neoplastic origin^{1,2}. Most patients are asymptomatic, especially in the case of perforation localised in the deeper, osseous segment of the septum. Anterior perforations, involving the cartilaginous segment of the septum, usually present various and troublesome symptoms. The symptom complex includes epistaxis, crusting, whistling, nasal obstruction, inflammation and secondary infection. Conservative treatment of nasal perforations consists of humidification and emollients. Surgical closure of septal perforations is considered difficult and is associated with complications and failures, the rates of which vary considerably³.

The alternative to surgical closure is insertion of a nasal septal prosthesis, with several types made of acrylic, plastic and silicone having been proposed⁴⁻⁶.

The present report refers to a study concerning the management of 15 patients treated by insertion of a one-piece or two-piece silicone septal button (Xomed).

Materials and methods

During a 4-year period, 15 symptomatic patients (10 male, 5 female) with clinically established anterior nasal septal perforation were treated and included in the present study (Table I). Mean age of the study group was 38.5 years (range 23-58). The aetiological factor of septal perforation was: traumatic in 3 cases,

Table I.

No. pat.	Age (yrs)	Sex	Aetiology	Perforation size (mm)	Follow-up (months)	Results
1	46	F	Traumatic	20	43	Reshaping of device
2	30	F	Chemical	23	42	Well tolerated
3	58	M	Iatrogenic	25	38	Well tolerated
4	35	F	Chemical	19	36	Reshaping of device
5	23	F	Iatrogenic	18	34	Well tolerated
6	48	M	Iatrogenic	22	31	Reshaping of device
7	34	M	Chemical	17	26	Well tolerated
8	44	F	Unknown	23	24	Well tolerated
9	23	M	Unknown	18	23	Well tolerated
10	47	M	Iatrogenic	15	18	Well tolerated
11	33	M	Chemical	25	18	Well tolerated
12	28	M	Traumatic	24	15	Well tolerated
13	23	M	Traumatic	18	12	Well tolerated
14	48	M	Unknown	14	4	Not tolerated and removed
15	58	M	Unknown	19	3	Well tolerated

chemical (cocaine abuse) in 4, post-surgical in 4, and unknown in 4. Overall, 10 one-piece nasal buttons and 5 two-piece nasal buttons (Xomed 15-24105 and 15-24110, Medtronic, Jacksonville, Usa). Before insertion of the nasal septal button, the nasal cavity was decongested, under local anaesthesia, with lidocaine spray (Lidocaine 15% Onga Muggio, Italy). Only in two cases, presenting a septal deviation together with the septal perforation, was general anaesthesia preferred in order to perform septoplasty and perforation closure procedures. Patients were informed about the two management options available in the case of nasal septal perforation (surgical reconstruction or closure by button), the latter having been chosen by all patients. The size of the nasal perforation was assessed and the device was inserted as modelled or reshaped according to the size of the perforation. The device was inserted in one nostril and placed in the perforation with the aid of a haemostat. By rotating the button along its central axis, it was optimally adapted to the contours of the perforation (Fig. 1). When the two-piece button was employed, each single part was inserted in the nostril and then connected through the septal defect.

The patient was instructed to use a nasal saline spray and to apply a non-petroleum-based nasal cream for one month. A follow-up appointment was scheduled 15 and 30 days after the insertion. Final follow-up ranged between 3 and 43 months.

The device was well tolerated in 11 cases: no infection or discomfort was reported during follow-up. In 3 patients, it was necessary to reshape the nasal button on account of a bed sore. In these patients, all the symptoms decreased significantly following insertion of the nasal button. Only in one case was it necessary to remove the nasal button, for psychological reasons.

Discussion

Most septal perforations are asymptomatic and these cases require no treatment. The size of the perforation and its localisation on the septum are relevant on the degree of symptomatology. Whistling is more commonly associated with small perforations whereas bleeding and crusting are usually associated with larger defects. The more anterior the lesion, the more likely it is to cause symptoms.

The first step in the management of septal perforation is to cure the causative disease process and to encourage a possible natural healing of the lesion. The second step is closure of the perforation in order to restore the physiological conditions of the nasal mucosa and to eliminate the symptomatology.

Conservative treatment, consisting in humidification, douching and emollients, will help to alleviate the symptoms. If the lesion does not heal, surgical or mechanical obturation of these defects should be considered.

The disadvantages of surgery are that the difficulties in effectively closing the septal perforation are directly related to the size of the defect. Another problem is the fact that an unsuccessful operation can result in a larger perforation⁷. The use of composite grafts have recently been reported to achieve excellent results^{8,9}. In some instances, surgery may be contraindicated on account of the patient's age, general medical condition, or underlying pathology. In these cases, a nasal septal prosthesis may be used as temporary or definitive alternative treatment. Mechanical closure has been achieved with various materials including rubber, acrylic, resin and silicone obturators, either standard or individually shaped^{1,5,10-14}. The advantages of nasal button application are: the technique is easy to perform, the possibility of treatment in the

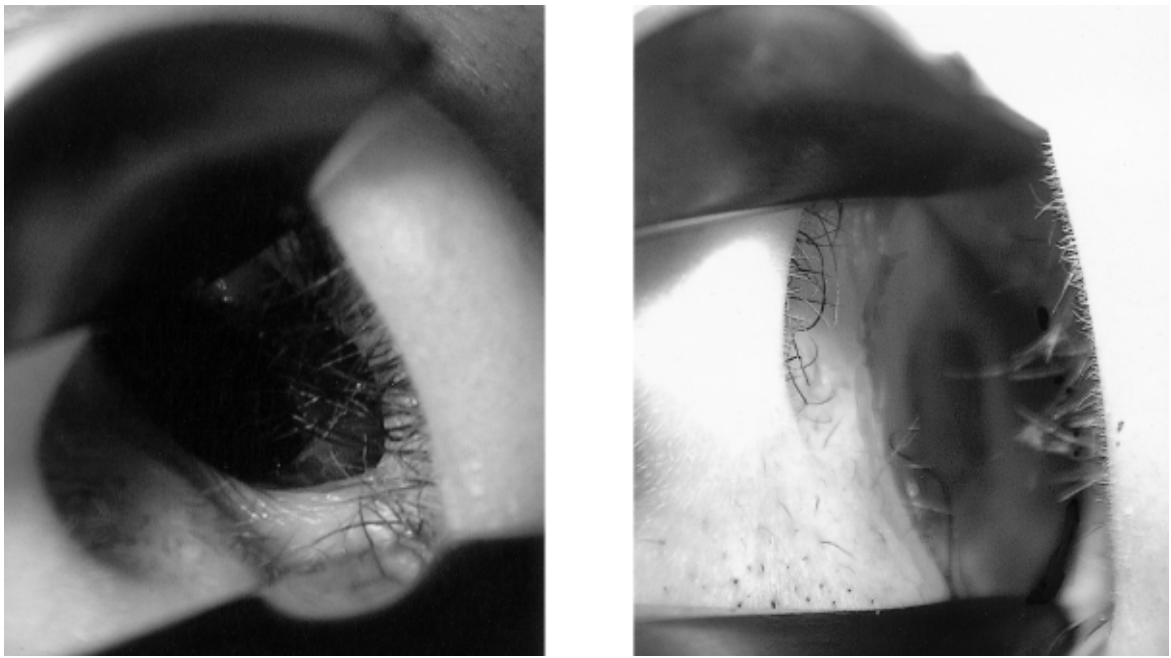


Fig. 1. Left: rhinoscopic view from left nostril. An anterior septal perforation is visible. Right: one-piece nasal button inserted in same nasal perforation 1 month after treatment.

day surgery or day hospital setting, the use of local anaesthesia in the majority of cases.

In a recent article appearing in the literature, Luff et al.¹³ reported that despite a reduction in symptoms, septal buttons are poorly tolerated by patients in 50% of cases.

The present study, however, demonstrates that our pa-

tients tolerated septal buttons well and reported an improvement in symptoms following obturator application. No infection or discomfort were observed and only in one case was removal of the device necessary. In conclusion, we suggest the use of the silicone nasal button as an effective alternative treatment not only if the patient's local or general conditions do not allow surgical closure.

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