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Endoscopic treatment of posterior epistaxis*†

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SUMMARY

Posterior epistaxis management remains a challenge. Besides their traumatic character, the usual treatments may cause as much morbidity and even mortality as the underlying pathology. A technique of endoscopically guided monopolar selective cauterisation was introduced in Lausanne at the end of 1987. Since then, 163 patients with a posterior epistaxis have been treated in our department. For 139 of these, endoscopic monopolar cauterisation was the first treatment applied. Haemostasis was achieved at the first attempt in 82% of cases. The total success rate, including early recurrences controlled by a new cauterisation, was 92%. Endoscopic monopolar cauterisation requires the ability to perform nasal endoscopy, but presents few disadvantages. This technique represents a selective, relatively atraumatic, rapid and effective treatment. Moreover, costs are much lower than those of other methods. In our opinion, endoscopic monopolar cauterisation should be the treatment of choice for posterior epistaxis.

Key words: posterior epistaxis, endoscopy, cauterisation

INTRODUCTION

Epistaxis represents for the affected patient a spectacular and distressing condition. Furthermore, it can have important systemic consequences, particularly for a fragile subject. Anterior bleedings are frequent and are easily managed. Posterior haemorrhages represent only about 20% of the cases, but they can be much more difficult to control. Among usual treatments, deep anterior or posterior packing remains the most frequently performed (Wurman et al., 1992). However, balloon tamponade, theoretically less traumatic, is becoming more frequent (Wurman et al., 1992, Hartley and Axon, 1994, Cannon, 1993, McFerran and Edmonds, 1993). In severe cases, most authors advocate arterial embolisation, whereas others recommend surgical ligation (Wurman et al., 1992, Elahi et al., 1995, Elden et al., 1994, Pau et al., 1994, Deitmer and Schuierer, 1993, Siniluoto et al., 1993, Spafford and Durham, 1992, Waldron and Stafford, 1992, Busch, 1992). Finally, greater palatine canal injection and hot water lavage were also proposed (Bharadwaj and Novotny, 1986, Stangerup et al., 1996). Although being less selective, these treatments are potentially dangerous as they may cause severe local trauma and may lead to lethal systemic complications (Lin, 1994, Davis, 1993, Fairbanks, 1986, De Vries et al., 1986). Furthermore, their failure rates are elevated.

With modern rhinoscopy techniques, identification of the bleeding source should not be a problem. One should therefore choose a selective treatment, having minimal adverse effects. A technique of endoscopically guided selective cauterisation was introduced in our department at the end of 1987 (Agrifoglio, 1990). The aim of this retrospective study is to assess the results obtained since then.

MATERIALS AND METHODS

We defined as posterior epistaxis bleeding sites requiring an endoscopic rhinoscopy. Most of the excluded lesions involved Kiesselbach's area, the anterior part of the inferior turbinate and the anterior nasal floor. Patients presenting with diffuse bleeding due to thrombocytopenia and Osler Weber-Rendu disease were not included in this study since our technique is not appropriate for these lesions. One hundred and sixty-three patients have been admitted to our department since September 1987 for treatment of posterior epistaxis. There were 111 men and 52 women. The mean age was 56 years (18-94 years). Objective evaluation of the severity of the haemorrhage was based on the haemoglobin level, measured after haemodilution. Forty-two percent of the patients had normal values, 8% had a slight decrease (less than 10% of the normal value) and 50% had a greater decrease (more than 10%), representing a significant blood loss. Data as to aetiological factors were available for 134 patients (Table 1). One or more factors were present in 90 cases (67%). Forty-four cases of epistaxis (33%) were considered to be idiopathic. Table 2 shows the observed haemorrhage locations. Before admission to our department, another treatment had been applied in 72 cases. There were 43 anterior

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Table 1. Associated factors.

Hypertension	48	(33.8%)
Ethylism	25	(18.6%)
Medication *	21	(15.6%)
Trauma	17	(12.7%)
Rhinitis	12	(8.9%)
Idiopathic	44	(32.8%)

* anticoagulant and antiplatelet drugs

Table 2. Locations.

Sphenopalatine A.	46
Middle turbinate	26
Inferior turbinate	24
Septum	21
Ethmoidal A. *	12
Middle meatus	11
Inferior meatus	9
Multiple	18
Undefined	39

* (ant 10, post 2)

packings, 12 posterior packings and 17 cauterisations to Kiesselbach's area, to which the haemorrhage had been initially attributed.

In our department, 139 patients (85.3%) underwent endoscopic monopolar cauterisation as primary treatment.

Eighteen patients (11%) underwent anterior packing and 2 patients (1.3%) posterior packing as initial treatment. Four subjects (2.4%) were kept for observation after spontaneous cessation of the haemorrhage. Among these 24 patients, 12 underwent endoscopic cauterisation in second intention. Thus, the total number of patients having undergone this treatment was 151 (92.6%). This endoscopic technique requires 30 and 70 degree angulated optics and sheathed suction tubes of our conception (Agrifoglio, 1990). The use of a malleable single use suction cautery has also been described (Marcus, 1990). The patient is in a sitting position. We perform topical anaesthesia with a solution of 1% novesine/adrenaline. After cauterisation, we do not systematically pack the nose but just apply an anti inflammatory ointment. Usually, patients are not hospitalised.

RESULTS

In 13 cases (8.6%), an additional intervention was associated with the cauterisation (Table 3). The available data do not reveal whether the anterior packing in 8 patients was inserted because of persistent haemorrhage or as a security measure. Therefore, these patients have been excluded from the analysis of the results. Four septoplasties were performed to allow access to the lesion. Posterior packing was performed as a security measure in an elderly patient admitted in a preshocked state. In 12 cases (7.9%), general anaesthesia was necessary (Table 4). The only complication noted was a transient loss of consciousness due to a naso-vagal reflex. Forty-seven patients (31%) were hospitalised when general anaesthesia and/or blood transfusion were necessary. Mean duration of stay was 3.5 days (1-8 days).

Table 3. Associated interventions N 13 (8.6%).

Anterior packing	8
Septoplasty	4
Posterior packing	1

Table 4. General anaesthesia N 12 (7.9%).

Septoplasty	4
After post. packing	3
Associated post. packing	1
Difficult access	1
Unknown	3

One hundred and forty-three patients were considered for evaluation of the technique. We had 11 failures (7.7%). They were due to persistent haemorrhage in 5 cases and early recurrence in 4 cases. One lesion could not be reached for anatomical reasons and one patient presented with multiple bleeding sources on a severely injured mucosa due to previous balloon tamponade. These patients were treated by deep anterior packing in 7 cases, posterior packing in 1 case, arterial embolisation in 2 cases and arterial ligation in 1 case. Immediate haemorrhage control was obtained in 117 cases (81.8%). The total success rate, including haemostasis after a repeated cauterisation for early recurrence, was 132 (92.3%).

DISCUSSION

Several conditions are well known to favour epistaxis. It is interesting to note that we found an important number of alcoholic patients of whom two thirds showed no blood coagulation disorders on routine testing. This could be due to alcohol induced platelet dysfunction (McGarry et al., 1995). All the underlying pathologies were investigated and treated. Several treatments of posterior epistaxis have been proposed; deep anterior or posterior packing is still the most commonly used (Wurman et al., 1992), but it presents numerous disadvantages. Most locations are difficult to pack effectively, explaining a failure rate varying from 20 to 50% according to various authors. It is a less specific treatment, causing severe trauma to the mucosa. Cardio-respiratory or infectious systemic complications can be lethal (Fairbanks, 1986). Finally, this intervention is painful and nasal obstruction is uncomfortable. These remarks can also be applied to balloon tamponade (Davis, 1993). Arterial embolisation is an invasive intervention, with potential severe complications (Lin, 1994, De Vries et al., 1986). Its efficacy is limited by the multiple anastomoses of the nasal vascular network. Greater palatine canal injection and hot water lavage were proposed (Bharadwaj and Novotny, 1986, Stangerup et al., 1996), but are of limited interest because of the high failure rate. After failure of the conservative treatments, surgical haemostasis remains the last solution (Wurman et al., 1992, Spafford and Durham, 1992, Waldron and Stafford, 1992, Busch, 1992). Arterial ligations are effective, but general anaesthesia is necessary and patients are therefore exposed to the risks of surgery.

Recent advances in endoscopic rhinosinusal surgery permit the use of endoscopic monopolar cauterisation for treatment of

posterior epistaxis (Wurman et al., 1992, Agrifoglio, 1990, El Silimy, 1993, O'Leary-Stickney et al., 1992, McGarry, 1991, Bingham and Dingle, 1991, Wurman et al., 1988, Borgstein, 1987, Tolsdorff, 1985, Elwany and Abdel-Fatah, 1996). Published series have small sample sizes. However, it seems obvious that this intervention allows a rapid, effective, less painful and cheaper management of this condition.

In our experience, these benefits were realised. In a few cases only an additional intervention was combined with cauterisation. General anaesthesia was seldomly necessary. No significant complications were noted. The success rate was higher than 90% and less than one third of the patients required hospitalisation . In our hospital, the cost of this treatment was 80 US dollars per patient. Although in private practice the price is higher, costs are about 20 times higher when hospitalisation for posterior packing is carried out.

CONCLUSION

In our view, endoscopic monopolar cauterisation is the treatment which best meets the needs of both patients and doctors. It requires the ability to perform nasal endoscopy, which can make its application difficult in a teaching centre. However, its success rate in such a centre exceeds 90%. A septoplasty may be necessary, requiring a general anaesthesia. On the other hand, this endoscopic technique allows for selective treatment of the source of bleeding, which is a prerequisite for success in a vascular network rich in anastomoses. Less traumatic for the patient and the mucosa, endoscopic monopolar cauterisation is also particularly interesting in the light of the current state of health economy.

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