



## Bipolar diathermy for the outpatient control of posterior epistaxis

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**To the Editor:** Epistaxis remains a major cause of emergency otolaryngology admissions.

Epistaxis is classified as anterior or posterior. Anterior bleeding sites are bleeders anterior to the bony nasal aperture, and are relatively easy to manage because the vessel may be visualised and controlled with basic equipment such as a headlight, nasal suction device and nasal speculum and simple cautery techniques.

Posterior epistaxis, which originates posterior to the bony nasal aperture, poses a more difficult problem. Generally these bleeders are not visible without the use of nasal endoscopy, especially if they occur on the lateral wall of the nasal cavity, a complex anatomical area characterised by the turbinate bones and meati, which have recesses between them.

As a result of these factors the traditional treatment of posterior bleeds has been the use of 'blind' techniques of nasal packing with ribbon gauze soaked in BIPP (bisthmus iodine and phosphate paste) and inflating the balloon of a Foley's catheter in the patient's nasopharynx (this allows for control of the epistaxis where the actual bleeding site is not specifically identified).

However, newer technology in the form of nasal endoscopes and bipolar nasal cautery probes potentially permits the localisation and cauterisation of the bleeding site in an awake patient in an outpatient setting. Nasal endoscopy and a bipolar diathermy probe have been found effective in localising the source of bleeding in the outpatient clinic, in the hands of an expert and dedicated nasal endoscopist.<sup>1,2</sup>

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Blind nasal packing is the management protocol for patients presenting with posterior epistaxis in tertiary academic hospitals in South Africa, as was our department's policy before this study. These patients all had their noses packed, were observed as inpatients and had the packs removed 48 hours later. When the pack failed to control the epistaxis the patient would be taken to theatre for localisation of the bleeder and diathermy, or endoscopic sphenopalatine artery ligation. If this failed, embolisation of the internal maxillary artery was performed.

We conducted an audit looking at the management of 100 successive patients with epistaxis admitted to our institution during 2004. The protocol described above resulted in prolonged hospital stays (average for posterior epistaxis 82 hours) and a low incidence of direct localisation of the bleeding site (only 7.7% of posterior sites, 1/13, were localised). By comparison a national survey in the UK revealed that the mean duration of stay in hospital was 70 hours for epistaxis patients, and that 20% of patients admitted to otolaryngology units were managed by direct control of the bleeding point.<sup>3</sup>

We therefore decided to investigate the viability of localisation and cauterisation as a primary intervention for posterior epistaxis in the context of a South African training hospital.

### Methods

A prospective study was undertaken on patients presenting to the Tygerberg Hospital ENT department with active posterior epistaxis between 1 June 2006 and 1 October 2007. All patients with traumatic epistaxis, any coagulopathy or Osler-Weber-Rendu syndrome, and those younger than 18 years of age, were excluded from the study.

The sample consisted of both patients who presented to our department directly and those referred to us. Any packs inserted before presentation at Tygerberg Hospital were removed. Any anterior bleeding source was cauterised and



the patient discharged. Only patients with active posterior bleeding sources were included in the study.

The nose was initially cleared of any blood or clots by suction and blowing the nose. Before endoscopy the rate of bleeding was reduced using pledgelets soaked in 2 ml of 10% cocaine. The nose was inspected with a 2.7 mm, 25° rigid nasal endoscope and repeated suctioning. Once the source of the bleeding was located, the cocaine pledgelets were reintroduced over that specific site to achieve haemostasis.

The bleeding source was then cauterised using a guarded bipolar diathermy probe. Patients in whom the bleeding was controlled were admitted for overnight observation, without any nasal packing. Patients in whom primary control of the bleeding failed were packed with an anterior and, if necessary, a posterior pack and then taken to the operating theatre for definitive management.

## Results

Fourteen patients fulfilled the inclusion criteria. Their ages ranged from 28 to 73 years, with a mean age of 58 years. There were 9 men and 5 women. The site of bleeding was localised to the nasal septum in 10 patients (71%) and to the lateral nasal wall in 3 (21%), while 1 patient (7%) had a combination of bleeding sites.

Eleven (79%) of the 14 patients had successful localisation and cauterity of the bleeding site, with no subsequent bleeding during the 24-hour observation period. We were unable to control the bleeding in the outpatient department in 3 patients (21%), who were packed and taken to theatre for further management.

Of the 14 patients in the study, 1 returned with epistaxis. He was the first of those needing definitive control in theatre, synchiae having obstructed the initial endoscopic view. He presented the second time 4 months after the sphenopalatine artery ligation, and on this occasion the source was successfully visualised and controlled in the outpatient department using the endoscopic protocol.

## Discussion

Our study confirmed that most posterior bleeding sites can be successfully localised using nasal endoscopy and a systematic examination of the nasal cavity. In 10 (71%) of our 14 patients the site of bleeding was the nasal septum, which is in keeping with other authors' findings.<sup>4</sup> The fact that most bleeding sites are not located in the more complex lateral nasal wall, a significant factor in permitting accurate localisation of the bleeder, contributed to the high success rates in this management protocol.

Correct technique is important, and while active bleeding is necessary for localisation of the bleeder, excessive bleeding makes visualisation of the specific vessel difficult and prevents effective cauterity. Attention to haemorrhage control before endoscopy is a key element in successful localisation. Others have used a combination of cocaine and local infiltration of adrenaline through a spinal needle to reduce persistent bleeding.<sup>3</sup> We found topical cocaine effective. As the bleeding subsides the endoscopy more easily reveals the site of bleeding, and the cocaine pack can be placed more accurately over the bleeding vessel. We found that the vessel is usually fairly prominent, often protruding from the septum at 90°. Initial attempts at cauterity often resulted in the recurrence of bleeding. The cocaine pledgelet was then repositioned over the bleeder, and cauterity repeated once bleeding had stopped.

We admitted our patients for observation overnight because of socio-economic issues limiting access to transport, should the patients rebleed, and because this was a new protocol for our department. Patients in whom a single, prominent bleeding site was localised and cauterised did not rebleed and were discharged the following morning. Their hospital stay was significantly shortened to 20 hours from a previous mean of 82 hours.

Our results indicate that direct localisation of the posterior bleed should become the routine, first-line management in the treatment of posterior epistaxis. However, our numbers are small and the study is limited as there was only one investigator. We are now investigating the applicability of this technique to all registrar trainees in our department.

## Conclusion

Endoscopic examination in cases of posterior epistaxis enables the source of bleeding to be localised and controlled in a high proportion of cases. The benefits to the patient, hospital, doctor and health care system are significant. This should become the routine management of posterior epistaxis in ENT departments in South Africa that have the facility of nasal endoscopy, and in private ENT practice.

## References

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