

Evidence-based management of epistaxis in adults

Epistaxis is a common complaint presenting to both hospital doctors and GPs, the management of which is often suboptimal. This article gives an evidence-based review of the non-surgical management of this common condition.

Patients who present to their GP or accident and emergency department with epistaxis may have different problems at presentation. At one end of the continuum patients present with chronic recurrent epistaxis, who bleed daily for several minutes stopping with minimal measures. At the other end, patients present with severe prolonged epistaxis, which is difficult to control and necessitates hospital attention. This latter group may have a previous history of hospital admissions for severe epistaxis.

This article will address the aetiological factors, simple first aid and treatment of both of these groups from an evidence-based perspective. The surgical management of epistaxis is not covered.

The search looked at the following databases: Cochrane Database ENT group (www.cochrane-ent.org) Ovid (<http://www.bma.org.uk/ap.nsf/Content/LIBMEDLINEPlusNLI>), Pubmed (<http://www.ncbi.nlm.nih.gov/PubMed/>), the Evidence-Based Medicine Homepage, (<http://cebmn.net>), Evidence Based On-Call (<http://www.eboncall.org/>), Bandolier and Medline Pro.

The evidence

Past medical history and social history relevance

Anticoagulation

Non-steroidal anti-inflammatory drugs (NSAIDs) including aspirin produce platelet dysfunction by irreversibly inhibiting the synthesis of thromboxane A₂. NSAIDs also affect the synthesis of thromboxane in endothelial cells. This is reversible on stopping aspirin, but the effects on platelets lasts for 5–7 days until they are destroyed. NSAIDs play a role in the multifactorial aetiology of epistaxis (Livesey et al, 1995) but as the effects of aspirin on the cyclo-oxygenase pathway last for 5–7 days the value of stopping NSAIDs during epistaxis in the acute stage is limited. Should warfarin be stopped in those presenting with epistaxis? A small prospective study comparing patients with epistaxis and a matched group of patients taking warfarin with epistaxis reported that continuing warfarin does not result in increased length of hospital stay or increased bleeding complications, providing that the international normalized ratio

is within normal therapeutic range for their condition (Srinivasan et al, 1997).

Hypertension

Hypertension is a common condition, particularly in the elderly population. It is not surprising that many of the patients presenting with epistaxis have hypertension, but does it cause epistaxis? In a retrospective study of 1724 patients, hypertension was highlighted as an aetiological factor in 806 patients (47%) (Juselius, 1974). Controversy exists as to whether this is actually the case (Ibrashi et al, 1978; Poulsen, 1984). Two large studies of 323 and 391 patients have reported a trend between history of epistaxis and duration of diagnosed hypertension but concluded that it was an incidental finding not an aetiological factor (Petruşon et al, 1977; Neto et al, 1999).

Alcohol

In a study of 75 patients who had been referred for epistaxis management a history of heavy ethanol ingestion was reported in 30 (Jackson and Jackson, 1988). The study did not specifically address ethanol and clotting studies, but reported the need for clotting studies in only those with pre-existing clotting deficiencies or taking NSAIDs or warfarin.

Clotting disorders

The authors could find no large-scale studies investigating the link between clotting disorders and epistaxis. Two small studies, one prospective (75 patients) (Jackson and Jackson, 1988) and one retrospective (144 patients) (Thaha et al, 2000), have concluded that in patients with no history of bleeding disorder or anticoagulant therapy routine clotting studies add little value to the management and should not be undertaken. However, a survey

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of otolaryngology medical staff in Scotland revealed that 16 of the 55 responding consultants (29%) and 22 of 43 junior medical staff responding (51%) routinely requested clotting investigations (Holland et al, 1999).

Management

Self-administered first aid

Initial management of patients with epistaxis consists of first aid advice. There is widespread ignorance on the part of patients about first aid techniques for nose bleeds. In a study of 60 anticoagulated patients, 33 (55%) were only able to think of a single useful measure to arrest epistaxis, and only 4 (7%) could think of three first aid principles (Lavy, 1996). A study of 500 members of the general public suggested only 50 out of 443 respondents (11%) with no history of epistaxis could correctly offer suitable first aid advice (Strachan and England, 1998). Management advice should include placing the head forward with direct digital compression of the nostrils, thereby applying direct pressure to Little's area, which is the most likely site of bleeding, although digital pressure will not stop a posterior epistaxis. The use of ice in the mouth has been found to significantly reduce the nasal mucosal blood flow (Porter et al, 1991).

Topical treatment

The use of topical treatment in the management of epistaxis has been shown to be invaluable in the management of recurrent epistaxis. A small randomized controlled trial in a mixed group of adults and children compared naseptin cream (chlorhexidine hydrochloride 1%, neomycin sulphate 3250 units/g) alone with naseptin cream and silver nitrate cautery. The study demonstrated that there was no additional benefit conferred in using silver nitrate cautery and that 20 out of 22 patients (91%) gained symptom control with naseptin alone (Murthy et al, 1999). Furthermore there was no difference in the response to treatment between adults and children. A further study of 100 patients using once-weekly application of triamcinolone (0.025%) and daily petroleum jelly to the nasal septum resulted in complete resolution of symptoms in 89 of the patients (89%) (London and Lindsey, 1999). The simple application of topical cream can lead to cessation of chronic epistaxis and should therefore be used in conjunction with first aid as a first-line treatment of epistaxis in the community before referral to an ear, nose and throat department.

Tranexamic acid

Tranexamic acid use has been investigated as an adjunct to controlling epistaxis and reducing recurrent epistaxis by inhibiting fibrinolysis. In two randomized, double blind parallel studies (89 and 68 patients respectively) comparing tranexamic acid or placebo, there was no statistically significant difference in rebleeding rates between the two groups (Tibbelin et al, 1995; White and O'Reilly, 1988).

Nasal packing

Nasal packing of epistaxis is frequently necessary in those with profuse epistaxis. Bismuth subnitrate and iodoform paraffin paste (BIPP) has historically been used to pack the nose but in a randomized control trial (50 patients) there was no significant difference in efficacy between polyvinyl acetate polymer sponge (Merocel, Medtronic Xomed Surgical Products Inc, Florida) and BIPP in arresting epistaxis (Corbridge et al, 1995). The ease of application of Merocel tampons makes them suitable for use in both accident and emergency departments and general practice.

Home management of the nasally packed patient

Can patients with nasal packs in situ be discharged home from hospital? Bilateral nasal packing of any type, in both elective surgical cases and epistaxis patients, results in significant elevation in carbon dioxide and bicarbonate concentration, together with significant reduction in oxygen concentration (Hady et al, 1983; Jensen et al, 1991). The effect of bilateral packing is not only alterations in the oxygen, carbon dioxide and bicarbonate concentration but fundamental changes in the lung capacity which are likely to contribute to the gaseous changes.

Bilateral packing causes an actual decrease in airway resistance as all respiration occurs through the oral cavity. This results in a significant decrease in the functional residual capacity (FRC), residual volume (RV) and total lung capacity (TLC) (Swift et al, 1988). The resultant decreases in lung volumes may make a patient more susceptible to the gaseous and acid base disturbances previously alluded to. Patients with bilateral nasal pack in situ need to be admitted to hospital for monitoring and for supplemental oxygen if necessary. Use of a single nasal pack is thought to be much safer, leading to fewer hypoxic symptoms as it doesn't result in the reduction of FRC, RV and TLC that bilateral packing appears to cause. In younger, fitter patients discharge home may be appropriate, although the authors could find no studies to support this theory. If patients are discharged there must be rigid local protocols in place as to who manages these patients in the community.

Conclusions

The treatment of epistaxis is simple and should always begin with first aid management. It is crucial that all patients and their families are educated in the initial steps as this will undoubtedly result in more successful first aid. In the chronic epistaxis sufferer, symptoms can often be successfully treated using topical creams. Anticoagulation with warfarin does not result in increased hospital stay if the international normalized ratio is within therapeutic range. There is a correlation between the use of NSAIDs and epistaxis and their use should be reviewed in those patients with chronic epistaxis, although in the acute situation it will have no bearing on management as a result of the prolonged effect on the

cyclo-oxygenase pathway. Bilateral nasal packing necessitates hospital admission but the authors could find no information on unilateral packing. **BJHM**

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KEY POINTS

- Simple first aid is a requirement in all patients.
- Topical cream appears to be as effective as cauterly in those with recurrent self-limiting epistaxis.
- Nasal packing should be reserved for those in whom simple first aid or nasal cauterly is ineffective.