

Epistaxis management for general practitioners

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Patients with epistaxis caused by a simple ruptured blood vessel can be treated by the attending physician; those with more serious causes of their epistaxis should be referred to an ENT surgeon for assessment.

Epistaxis is a common condition often seen by GPs and doctors manning the emergency room. Patients present either with a history of recurrent episodes of bleeding or with active bleeding. Patients who are actively bleeding need to be managed according to the protocol below before being assessed as either low or high risk, while those who are not actively bleeding need to have a history taken and examination performed before the epistaxis site is managed.

There are several causes of epistaxis besides a ruptured blood vessel. Such causes include tumours and systemic blood-related disorders. Patients can be categorised as being at low or high risk of having a serious cause of their epistaxis according to their age and presenting symptoms (see the box on this page). Age is important as some tumours such as juvenile angiofibroma occur only in teenage boys. Elderly patients are at a greater risk than younger patients of having associated malignancies and systemic blood-related disorders. Nasal and nasopharyngeal malignancies will usually present with associated symptoms.

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Patients in the high risk category need to be referred to an ENT surgeon for assessment; those in the low risk category can be treated by the attending physician as described below.

Bleeding sites

The two most common sites of bleeding are from:

- the anterior aspect of the nasal septum where there is a rich anastomosis of various blood vessels
- the posterior lateral area of the nose

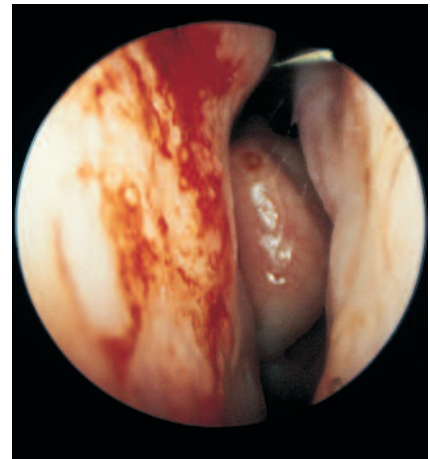


Figure 1. Dilated blood vessels and scab in the left Little's area of the septum. The middle turbinate can be seen in the distance.

close to the foramen of the sphenopalatine artery as it enters the nose.

The anterior aspect of the septum (also known as Little's area) is the most common area for bleeding, being responsible in about 85% of cases (Figure 1).

Risk categorisation of patients with epistaxis

Low risk of serious cause

- Patients aged less than 12 years
- Middle aged patients, but not of Chinese origin
- Patients with no associated symptoms

High risk of serious cause

- Males aged between 12 and 20 years (in whom angiofibroma is possible, but rare)
- Middle aged patients of Chinese origin (who have a high incidence of nasopharyngeal carcinoma)
- Patients with a systemic blood disorder or hypertension
- Patients who are taking anticoagulant therapy
- The elderly (nasal, sinus and nasopharyngeal malignancies are more common in the elderly, but associated symptoms are usually present in such cases)
- Patients with any of the following symptoms:
 - nasal obstruction
 - facial pain
 - hearing loss
 - eye symptoms (proptosis or double vision)
 - palpable neck glands

Less common, but often more severe in magnitude, are the posterior bleeders emanating from close to the sphenopalatine artery. This artery provides most of the blood to the nasal cavity, with branches supplying the lateral nasal wall as well as the posterior septum.

In small children the cause of bleeding is often more anterior to Little's area and is often caused by a small vein that lies just behind the mucocutaneous junction, the retrocolumellar vein. This vein is easily traumatised by little fingers trying to remove crusts from the nasal vestibule area.

Management

Patients who are actively bleeding

Patients who are actively bleeding and are elderly or taking anticoagulants or suspected of having a systemic blood disease should have a full blood count and clotting profile performed. Blood clotting disorders need to be managed medically. Elderly patients are often hypertensive, and this needs to be controlled.

Preparation

First ensure that you have the necessary equipment available. A good headlight is essential because it leaves both hands free. You will also need a topical analgesic and decongestant spray, such as 5% lignocaine and 0.5% phenylephrine nasal spray (Cophenylcaine Forte), a nasal speculum, a nasal packing forceps, a Fraser suction tube, a kidney dish and silver nitrate sticks (Figure 2). Proper eye protection, mask, gloves and gown should be worn as there is a significant risk of blood contamination during the treatment of active epistaxis (Figure 3).

Identify the bleeding side

Ask the patient which side of the nose started to bleed first. It is extremely rare for there to be more than one site of bleeding. Once a blood clot has formed in the postnasal space, bleeding may enter the opposite nasal cavity from



Figure 2 (above). Equipment needed to manage active epistaxis. Clockwise from top right: a headlight, container of silver nitrate sticks, two silver nitrate sticks, Fraser suction, Thudicum nasal speculum, lignocaine/phenylephrine nasal spray, kidney dish and Fraser suction tube.

Figure 3 (right). Protective clothing to be worn when managing a patient with active epistaxis.



behind and then run out of the nose on the opposite side to that which is actually bleeding. Nasal packing or cautery is very rarely needed in both nasal cavities.

Remove blood clots

The first step in the management of the epistaxis is to clear the nasal cavities and postnasal space of blood clots. Give the patient three to four paper towels and ask him or her to blow all the blood clots from the nose; several big blows will be required.

Provide analgesia, decongestion and vasoconstriction

Once the clots are cleared, ask the patient to keep his or her head forward so the blood (which is now usually running freely) can drip into the kidney dish. The 5% lignocaine and phenylephrine nasal spray is then used in both nostrils – three to four sprays each side. This provides analgesia as well as decongestion and allows the physician to work in the nose with a minimum of discomfort for the patient. The phenylephrine in the spray produces vasoconstriction, and this may slow the bleeding. It also provides

decongestion, which improves the visibility in the nasal cavity. Wait three to four minutes after spraying for the full effect. The spray can be used again if necessary to ensure proper nasal penetration, with a maximum of 16 sprays in an adult.

The patient leans forward again and allows any continuing bleeding to drip into the kidney dish. After waiting a few minutes for the spray to take effect the headlight is used with the nasal speculum to obtain a view into the nasal cavity.

A Fraser suction tube is placed in the nose and any remaining blood removed. The suction should cope easily with ongoing blood flow, which should not run down the back of the patient's throat.

Control the bleeding

The physician should be able to visualise the site of bleeding. As mentioned earlier, it is extremely rare for active bleeding to be coming from more than one site.

If the bleeding is from Little's area, the application of silver nitrate via a stick should control and stop the bleeding in most cases. If there is an arterial bleeding

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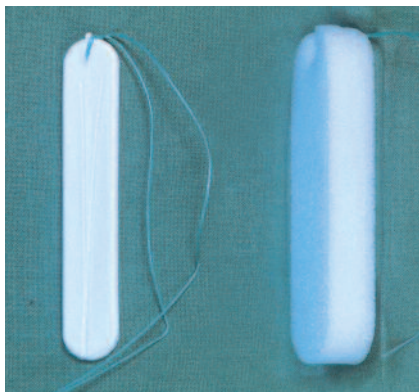


Figure 4. Expandable nasal sponge in its unexpanded form (left) and fully expanded (right).



Figure 6. Necrotic skin on the right nasal vestibular rim caused by pressure from an unsupported umbilical clamp.

site, it is useful to cauterise around the bleeding point before placing the stick on the bleeder.

If the bleeding is coming from the posterior area of the nose, the physician should insert an expandable sponge into this area (Figure 4). This sponge comes in a collapsed form, which aids insertion. Care should be taken to insert the sponge fully so that it comes into contact with the affected area and can therefore help control the posterior epistaxis. The physician should insert the sponge with packing forceps, using the headlight and the nasal speculum to improve visualisation



Figure 5. A patient with continuing epistaxis after the nose has been packed with a size 14 Foley's catheter and an expandable sponge. The gauze supports the umbilical clamp as the catheter is placed under tension. The catheter and clamp should not touch the nasal vestibular skin.



Figure 7. Equipment used by specialists managing epistaxis. From the left: bismuth iodoform paraffin paste (BIPP), BIPP soaked ribbon gauze, Tilley's packing forceps and Thudicum speculum.

so that the forceps are not pushed into the inferior turbinate or septum. This measure should control the epistaxis at least temporarily while the physician refers the patient to an ENT surgeon for further management.

If an ENT surgeon is not available and the bleeding is controlled, the pack can be removed after 24 hours.

If an ENT surgeon is not available and the bleeding continues despite insertion of the expandable pack, the pack should be removed. A size 14 Foley's catheter should then be placed through the nasal cavity until it can be seen in the pharynx. It is

pulled back until it is behind the soft palate and inflated with between 10 and 15 mL of saline.¹ The catheter is then pulled back until the balloon lodges in the posterior choana. A new expandable nasal pack is inserted into the nasal cavity under vision until the pack touches the bulb of the catheter.

Tension is maintained on the catheter by placing five layers of gauze around the catheter at the nasal vestibule and securing the catheter with an umbilical clamp (Figure 5). Great care should be taken to ensure that the umbilical clamp is not in contact with the vestibular skin or the skin around the nares as this can cause pressure necrosis with an ugly cosmetic defect (Figure 6).

The patient should be transferred to a hospital that provides emergency ENT cover. The clamp should be released and the balloon deflated after 12 hours.

Quantifying blood lost

Quantifying the amount of blood lost can be difficult to ascertain, but the patient should be asked to estimate it in terms of the approximate number of cups (250 mL) of blood he or she has lost. Patients who have lost more than one cup of blood should be given intravenous fluid replacement. Blood transfusion should be considered in patients who have a significant drop in their haemoglobin level (below 100 g/L) with systemic disease influencing their compensation abilities.

Bleeding recurrences

A recurrence of bleeding should be managed by an ENT surgeon. Patients at low risk of a serious cause for their epistaxis who had a simple bleeder that was managed by cautery should be followed up to ensure that no recurrence of bleeding occurs and that additional symptoms do not develop. Patients who are discharged after a major nasal bleed should be referred to an ENT surgeon for follow up so that a full examination of the nasal cavity and postnasal space can be conducted.

Patients with a history of epistaxis

In patients at low risk of having a serious cause of their epistaxis, the anterior septum (Little's area; see Figure 1) should be inspected and the bleeding site cauterised.

Use of a headlight and opening of the anterior nares with nasal speculum is often necessary to obtain a view. The speculum also pushes away the nasal hairs, which may obscure visualisation of the septum. A headlight leaves both hands free, which in turn allows the speculum to be held in one hand and a silver nitrate cautery stick in the other.

Often a prominent vessel or a little scab can be seen where the vessel has ruptured. The patient's nose should be sprayed with a lignocaine and phenylephrine nasal spray to provide analgesia and decongestion. The scab can be removed gently and the underlying vessel cauterised with the silver nitrate stick. Trichloroacetic acid should not be used routinely because it causes significant tissue loss.

Only one side of the septum should be cauterised at one time as cautery to both can lead to loss of mucosa over corresponding areas on both sides of the septum with necrosis of the cartilage and the development of a septal perforation.

The patient should be reviewed to ensure that no further bleeding occurs and that no additional symptoms develop.

Nasal antibiotic ointments (such as mupirocin [Bactroban Nasal Ointment]) can be a useful alternative to cautery in small children as they often pick at crusts in the nasal vestibule and damage the retrocolumellar vein, with subsequent epistaxis. Ointments may be applied twice a day to the nasal vestibule. This will decrease crusting and allow healing of the area with resolution of the epistaxis.

As mentioned above, patients at high risk of having a serious cause of their epistaxis should be referred to the ENT surgeon for assessment.

Specialist management of epistaxis

The ENT surgeon will either pack the

postnasal space and posterior nasal cavity with a combination of a balloon catheter and gauze (usually impregnated with bismuth iodoform paraffin paste [BIPP]) or other packing material of his or her choice (Figure 7). Packing the actively bleeding nose with ribbon gauze is not recommended for physicians who have not been trained to do this as it often results in trauma to the septum and inferior turbinate.

The ENT surgeon may also consider cautery of the bleeder under endoscopic control or ligation of the sphenopalatine artery as it emerges from the sphenopalatine foramen. This latter procedure has been shown to be very effective in the management of difficult posterior epistaxis.

Should there be a contraindication or unavailability of a suitably trained surgeon, then radiological embolisation of the maxillary artery can be performed.² This is usually used only as a second choice procedure because the risks of embolisation are greater than those of simple arterial ligation under local or general anaesthesia.

Summary

Most patients with epistaxis present with bleeding (or a history of bleeding) from the anterior nasal septum. This area is easily accessible, and emergency physicians or GPs should be able to manage epistaxis from this area.

Patients with posterior bleeds should be referred to an ENT surgeon for management. MT

References

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