

Historical Article

Nothing new under the sun: the management of epistaxis

VIJAY POTHULA, F.R.C.S., DAVID ALDERSON, F.R.C.S.

Abstract

The management of epistaxis is reviewed from ancient times onwards. Many curious methods have been employed and indeed epistaxis has been encouraged at times. Although current management is based on sound principles folklore remedies still predominate amongst some of our patients. The basis of contemporary treatments was known and practised by our ancient forebears.

Key words: Epistaxis; History of medicine

Introduction

'Nose bleeds occur in those who are beginning to have feelings of lust or who are getting the signs of manliness'

4th Century BC (Hippocrates)

'One drop of blood from the nose commonly foretells death or a very serious illness, while three drops is still more ominous'

Traditional (Weir, 1990)

'Put the tip of a nettle in the nose and a crust will form on it and rub the essence of a nettle on the testes and it will stop the bleeding'

15th Century (Doyle Kelly, 1967)

'When the spleen is inflamed, if blood comes forth out of the left Nostril it is good; but out of the right bad'

17th Century (Riverius, 1672)

These are just a few of the varied ancient beliefs regarding epistaxis which indicate what a mysterious disease it appeared. Aristotle theorized about why not only humans were afflicted with the problem and not other animals. His conclusion was that the large size of the human brain and its associated vessels was responsible (Feldman, 1996). (In fact epistaxis is well known in race horses and can occur rarely in other animals (Ferrano, 1982).

Bleeding from the nose in the ancient world

One of the earliest references to the treatment of epistaxis is by Aradnana, surgeon to the Assyrian court over 2,500 years ago. He criticized the

treatment given by another attendant as potentially dangerous: *'the dressing is a surgical mistake, because it is so attached to the nostrils that it is preventing breathing, and bleeding can only occur back through the mouth'* (Feldman, 1996). Hippocrates in 4th century BC Greece did recommend packing but only in selected cases. He theorized that the disease was due to imbalance of the humours. Illnesses above the diaphragm could be improved by vomiting, expectoration and bleeding from the nose and these were encouraged as potentially curative. Indeed he attributed the death of a woman with amenorrhoea to misguided cessation of bleeding from the nose. When bleeding was prolonged he treated it with the application of cold towels to the shaven head. On occasion he placed compressed calves rennet in the nasal cavity and described the use of wool soaked in oil of figs as an anterior pack. He also developed a method for insertion of a postnasal pack but this was used to avulse polyps by withdrawing the pack through the nasal cavity rather than to treat nose bleeds. The term epistaxis was used at this time to indicate any dripping bleed and it was not applied specifically to bleeding from the nose until the 18th century (Feldman, 1996). Conversely, *'haemorrhagia of Hypocrates'* indicated bleeding from the nose (Riverius, 1672).

Heraclides in the first century BC combined an anterior pack with digital pressure on the soft palate in order to prevent blood escaping posteriorly into the oropharynx (Feldman, 1996). He believed that blood should be redirected to other parts of the body and applied tourniquets to the extremities with this

From the Department of Otolaryngology, Arrowe Park Hospital, Upton, Wirral, Cheshire, UK.
Presented at the History of ENT Society Meeting, Birmingham, October 1997.
Accepted for publication: 16 February 1998.

aim. Scribonus Largus writing a century later continues this idea with the use of cupping. He also used a nasal airway around which to place a pack if blood issued from both sides of the nose: 'Take if possible a thick goose feather or a quill which is hollow. Cut it to the length of the nose so that both ends are open. Wrap it in linen so that the whole fits into the nose. Soak it in vinegar or other medium for stopping nose bleed.' (Feldman, 1996). Rational principles of direct pressure to the bleeding area continued to be applied late in the Roman period.

The middle ages

With the fall of the Roman Empire many of these ideas were lost to western medicine, and practitioners resorted to more curious remedies. A widespread practice in the middle ages was to write words of the Christian liturgy in Greek or Latin across the patients forehead using his own blood; for example the words '*let us stand seemly/let us stand in awe*' were written in corrupted Greek to make the shape of a cross (Grattan and Singer, 1952). Prayers were addressed to St Fiacre the 'patron saint' of epistaxis. Patients with recurrent nose bleeds were asked to drink whey with raisins or to wear a scarlet thread with nine knots (Weir, 1990). Blood stones were popularly worn or carried throughout Europe. These pieces of agate contained red seams which resembled streaks of blood; they were also used to stop epistaxis by the Aztecs (Sperati, 1994).

Many local applications were tried. The use of vinegar had survived from Roman times but to this method were added hogs' dung, burnt eggshell, burnt blood, vitriol, mussels, 'muscus ex cranio humano' and 'mummmia' amongst many others (Riverius, 1672; Willis, 1684; Morgagni, 1769; Sperati, 1995; Feldman, 1996). 'Muscus ex cranio humano' or 'cranial moss' was a mould found to grow on the skulls of executed criminals left exposed to the elements; this was only gathered during certain phases of the moon. 'Mummmia' was derived from Egyptian mummies; the resins used for embalming were held to have therapeutic effects. Interestingly both these substances were important constituents of the famous weapon salve of Paracelsus which was used to treat battle wounds – by application of the salve to the weapon that had caused the injury rather than to the wound.

Epistaxis as a treatment

Epistaxis was considered beneficial in many cases and the dilemma for the medical practitioner was not so much what treatment to give but whether to treat it at all. In *Domestic Medicine – The Family Physician* Buchan (1769) wrote: '*It often cures a vertigo, the headach, a phrenzy, and even an epilepsy . . . It is a common practice to stop the bleeding without considering whether it be a disease or the cure of a disease. This conduct proceeds from fear; but it has often bad and sometimes fatal consequences . . . whenever bleeding relieves any bad symptom, and does not proceed so far as to endanger the patient's*

life, it ought not to be stopped'. He did recommend treatment if the bleeding became troublesome: '*when it returns frequently, or continues till the pulse becomes low, the extremities begin to grow cold, the lips pale . . . it must immediately be stopped . . . If the genitals be immersed for some time in cold water, it will generally stop a bleeding at the nose. I have not known this fail*'. Spontaneous bleeding from the nose was found to be more efficacious than the letting of the same volume of blood with a lancet in a range of illnesses. It was not until the late 19th century that the development of the sphygmomanometer by Mahomed allowed explanation of these apparent benefits in terms of reducing arterial hypertension (Watkinson, 1997).

The origins of contemporary management

Willis (1684) produced an exhaustive list of treatments commonly used in the years following the English civil wars. The remedies ranged from placing pledgets in the nose to wearing a toad in a silk bag around the neck: he felt that '*in a serious case everything is to be tried*'. Attempts to divert blood away from the nose featured in many of the treatments. Cupping, ligatures, cautery to the sole of the foot and blood letting combined with an upright position were all employed to this end and progression to a state of unconsciousness was considered beneficial: '*the Blood and Spirits are drawn inwardly more strongly by swooning*' (Riverius, 1672). Fainting could also be caused by inducing a state of extreme terror into the patient although the loss of consciousness produced in this way was sometimes irreversible (Morgagni, 1769).

Success from placing a large metal key on the nape of the neck was traditionally attributed in some countries to intervention from the god Thor (Weir, 1990). It may be that the cold metal induced a vasoconstrictor response and other cooling regimes also remained popular. Fabricius Hildanus, one of the most prominent German practitioners of the 17th century, describes treatment by immersion in cold water: '*A young, strong, nobleman from Lausanne became overheated in the dog days of 1606, and slept with his new wife in a way which was not conducive to his good health, and got a bad nosebleed . . . I tried everything but to no avail . . . I told the bystanders and friends that they should expect his death. I had a bath filled with cold water and the patients whole body immersed. In this way the blood was cooled and thickened and the bleeding gradually stopped.*' (Willis, 1684; Feldman, 1996).

In the 18th century interest began to focus once again on the exact origin of the bleeding. Valsalva taught that many bleeds originated from the anterior septum. '*about a finger's breadth, more or less, from the bottom of the nostrils*' and advised direct compression by the introduction of a finger into the nose (Morgagni, 1769). The area now known in this country as Little's area has variously been known as organos Cortii, glandula Virchowii, locus Valsalvae and locus Kiesselbachii; the question of the correct

eponym has been hotly debated in the past (Rainey, 1952; Feldman, 1996).

Ball (1760) suggested cautery directly to the vessel, using a 'canula' to protect the alar rim from the heat, but only if 'the patients life seems to be in danger'. The idea of applying continuous pressure to this area was developed in the early 19th century with the use of a dried pig intestine filled with water as an intranasal balloon. Ady in 1887 refined the method by using the serosal layer of a chicken appendix. He went on to suggest that 'if a chicken is not available then use a rubber condom' (Feldman, 1996). The modern intranasal balloon is obviously a close derivative of these methods.

As already mentioned the problem of bleeding continuing posteriorly despite an anterior pack had been recognized from ancient times. However it was not until the early 18th century that Henri le Dran successfully applied the principle of Hippocrates' postnasal pack to this problem (Morgagni, 1769). He describes passing forceps through the nose and grasping a shoelace held in the nasopharynx by his index finger. The forceps were withdrawn and the shoelace used to pull packing into the postnasal space. One can imagine the discomfort to the patient of this method and by the early 19th century a specially designed instrument was in widespread use. Belloc's tube consisted of a hollow tube to be placed in the nasal cavity. A flexible metal probe could then be advanced through the tube and would pass into the oropharynx. Ties could then be withdrawn through the nose. Morrel MacKenzie called it 'an ingenious instrument' but found that it was 'seldom to hand when you need it'. He and other authors later in the 19th century preferred to use a soft catheter for this purpose. Voltolini in 1888 called the tube 'bulky, unrefined and mostly unusable' and more likely to cause than to prevent bleeding (Feldman, 1996).

Even with adequate anterior and postnasal packs in place bleeding could still be troublesome. Abernethy (1795) was the first to attempt to ligate the common carotid and the procedure was successfully applied to haemorrhage by Flemming in 1803 (Bartlett and McKittrick, 1917). Seiffert (1928) made the procedure more specific by ligating the maxillary artery via a transantral approach. Goodyear (1937) tied the anterior ethmoidal artery in a 74-year-old man with refractory bleeding from the middle turbinate: 'To ligate the external carotid would have no effect on bleeding from this area, and to ligate the internal carotid would be precarious in a somewhat frail and aged patient'. It is interesting to note that even in the late 1930s internal carotid ligation was still considered for younger patients.

In the early part of this century epistaxis was largely managed at home with only the most severe cases referred for admission. The typical scene which greeted the attending doctor was described by Stewart (1957): 'the patient slumped in his bed with a blood-stained bath towel draped round his neck and shoulders, or with his head dependent over the side coughing and spluttering blood into some homely receptacle. The room was probably packed with

anxious members of his family . . . and the scene would not be complete if one omitted the old crone sitting in her corner ofily repeating that she "smelt death". Copious and frequent libations from a bottle of brandy or some other spirit were pressed on the patient to keep his strength up, along with exhortations to fight the good fight, and at times the set-up might resemble Dante's inferno'. This situation changed in the United Kingdom on the inception of the National Health Service with a dramatic increase in the number of hospital outpatient referrals and admissions in the years immediately after 1948. Stewart identified the cause as ' . . . the average GP who now seems to consider his surgery a clearing station for the hospitals'.

Over the last decade the introduction of the Hopkins' rod to the management of epistaxis has allowed diagnosis and treatment to become more precise (Bingham and Dingle, 1991), however the standard treatments used in most ENT departments have changed little in recent times; indeed many of the procedures performed for epistaxis on a day to day basis would have been understood by our ancient forebears. As King Solomon wrote 3,000 years ago (Ecclesiastes 1:9):

*'What has been will be again,
what has been done will be done again;
there is nothing new under the sun.'*

References

- Ball, J. (1760) *The modern Practice of Physic* (or a method of judiciously treating the several disorders incident to the human body). vol. II. A. Millar, London. pp 134–139.
- Barlett, W., McKittrick, O. F. (1917) A study of secondary hemorrhage treated by ligation of the common carotid artery. *Annals of Surgery* **65**: 715–719.
- Bingham, B., Dingle, A. F. (1991) Endoscopic management of severe epistaxis. *Journal of Otolaryngology* **20**(6): 442–443.
- Buchan, W. (1769) *Of bleeding at the nose in domestic medicine (or the family physician)* Balfour, Auld and Smellie, Edinburgh, pp 398–401.
- Doyle Kelly, W. (1967) Epistaxis. *Irish Journal of Medical Science* **6**(496): 161–175.
- Feldman, H. (1996) Nasenbluten in der Geschichte der Rhinologie. *Laryngologie-Rhinologie-Otologie* **75**: 111–120.
- Ferrano, G. L. (1982) Epistaxis in racehorses. *Modern Veterinary Practice* **63**(5): 395–397.
- Goodyear, H. M. (1937) Nasal hemorrhage: ligation of the anterior ethmoid artery. *Laryngoscope* **47**: 97–99.
- Grattan, J. H. G., Singer, C. (1952) *Ango-Saxon Magic and Medicine*. Oxford University Press, Oxford, pp 49–50.
- Hippocrates *Airs, waters and situations*. Translation by Francis Clifton (1734) J. Watts, London, pp 383–343.
- Morgagni, J. B. (1769) The seats and causes of diseases investigated by anatomy. Book I Letter XIV Articles 24, 25 Millar and Cadell, London, pp 336–340.
- Rainey, J. J. (1952) James Lawrence Little, a forgotten pioneer. *American Medical Association Archives of Otolaryngology* **55**: 451–452.
- Riverius, L. (1672) *Practice of Physic in several books*. Book IV Chapter VII, J. Streater, London, pp 114–122.
- Seiffert, A. (1928) Unterbindung der arteria maxillaris interna. *Zeitschrift für Hals-Nasen und Ohrenheilkunde* **22**: 323–325.
- Sperati, G. (1994) La terapia delle epistassi attraverso I secoli (II): Amuleti e talismani. *Acta Otorhinologica Italica* **14**: 659–660.

- Sperati, G. (1995) La terapia delle epistassi attraverso I secoli (III): Rimedi di origine vegetale, animale e minerale. *Acta Otorhinologica Italica* **15**: 54–55.
- Stewart, J. P. (1957) Changing patterns of epistaxis during the past 45 years. *British Medical Journal* **2**: 1231–1233.
- Watkinson, J. C. (1997) Epistaxis. In *Scott-Brown's Otolaryngology*, 6th Edition (Kerr, A. G., MacKay, I. S., Bull, T. R., eds.) Butterworth-Heinemann, Oxford, pp 1–4.
- Weir, N. (1990) *Otolaryngology: an Illustrated History*. 1st Edition, Butterworths, London, p 12.
- Willis, T. (1684) *Practice of Physick*. Section III Chapter II *Of Remedies restraining or stopping of Blood*. Dring, Harper, Leigh, London, pp 134–140.

Address for correspondence:
Mr David Alderson,
65 Barn Hey Crescent,
Meols,
Wirral L47 9RW.