

A base of skull fracture presenting as haematemesis

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Abstract

In a patient presenting with haematemesis, known to have oesophageal varices, the bleeding would be expected to be from those varices. This case demonstrates an unusual presentation of a base of skull fracture; blood from a fracture of the temporal bone had run from the middle ear through the eustachian tube to the pharynx. It demonstrates the need to remain vigilant even when the diagnosis appears to be obvious.

Key words: Skull Fracture, Basilar; Haematemesis; Eustachian Tube

Case report

A 57-year-old woman, having vomited a reported 100 ml of fresh blood while in police custody, was brought to the Accident and Emergency department. She vomited twice more in the department; 50 ml and 100 ml of fresh and altered blood.

The woman could give no details of where she had been that evening. Her husband reported that she had had a high alcohol intake for some time and had been shown on previous oesophagogastroduodenoscopy (OGD) to have oesophageal varices.

Examination found signs of chronic liver disease including jaundice, palmar erythema, and dilated superficial abdominal veins. She also had a right blepharohaematoma. She had no knowledge of how she had come by this injury.

Investigations showed her haemoglobin (Hb) to be 12.4 g/dl, INR 1.4 and her liver function tests to be abnormal. The bleeding was expected to be from her known oesophageal varices and therefore an OGD was carried out later that day. At endoscopy she was found to have one oesophageal varix, but there were no stigmata of recent bleeding. Her stomach and duodenum appeared normal. It was noted however, that there was a lot of fresh blood in the pharynx and an ENT referral was requested.

Upon ENT examination it was noted that as well as the right blepharohaematoma she had a haematoma on the back of her head and left mastoid ecchymosis (Battle's sign) (Figure 1). She was also found to have a left haemotympanum (Figure 2). Nasendoscopy found fresh blood in the pharynx, that was seen to be running from the left eustachian tube (Figure 3). Neurological examination was normal.

A computed tomography (CT) scan of her head showed extensive cerebral haematoma in the right frontal lobe and left temporal and parietal lobes. The scan also showed an extradural haematoma containing gas, in the left parieto-occipital region, that corresponded to a fracture through the left mastoid air cells. A pure tone audiogram showed a 25–40 dB hearing loss in the left ear. The right was normal.

The neurosurgeons advised conservative management. Regular neurological observations remained normal. On one occasion she experienced visual hallucinations. These were thought to be related to alcohol withdrawal. The

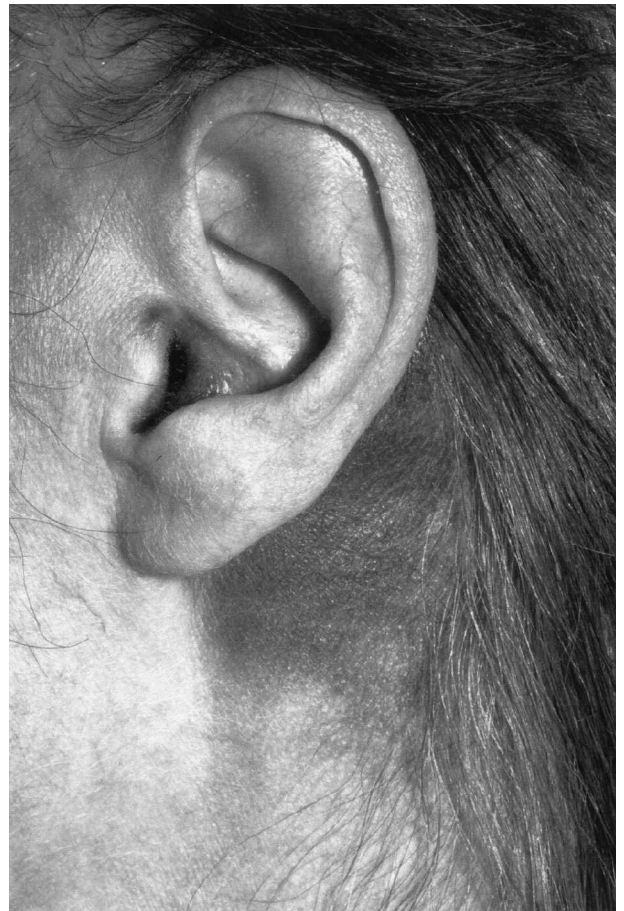


FIG. 1
Left mastoid ecchymosis (Battle's sign).

psychiatric team assessed her and felt that there was no cause for concern. The remainder of her stay in hospital was uneventful and she was discharged after a total of seven days. A follow-up audiogram two weeks later showed her hearing to have returned to normal.

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Accepted for publication: 6 June 2002.

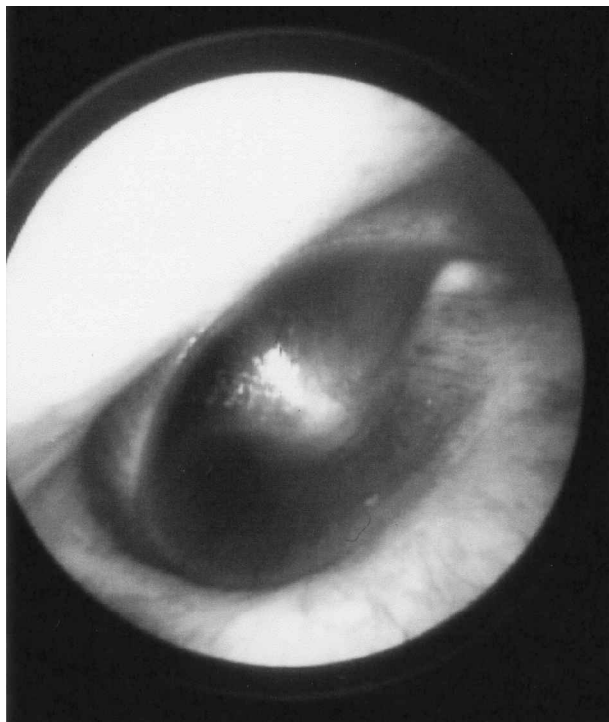


FIG. 2
Left haematympanum.

Discussion

Haematemesis in a patient with known oesophageal varices could reasonably be expected to be the result of bleeding from those varices.¹ OGD would be the investigation of choice for confirmation and treatment in such a patient. OGD would also be expected to pick up the other common causes of haematemesis in a patient known to have a high alcohol intake such as peptic ulcer, gastritis and Mallory-Weiss tear. However, with an apparently obvious diagnosis it still remains important to keep an open mind to signs of other pathology.

On admission the patient was noted to have a black eye and although alcohol intoxication may have explained the amnesia, a head injury should have been suspected. Pretto Flores *et al.*² found, in a prospective study, that in patients presenting after head injury, with a Glasgow Coma Score 13–15, blepharohaematoma had a positive predictive value of 78 per cent for base of skull fracture, and Battle's sign 66 per cent.

This case demonstrates a surprising cause of haematemesis. No previous report of a base of skull fracture presenting with haematemesis could be found on carrying out a literature search and indeed we cannot be certain that another source of bleeding was not missed on OGD. However cerebrospinal fluid rhinorrhoea has been reported after traumatic fracture of the lamina cribrosa of the internal auditory canal, CSF passing to the nose via the eustachian tube.³ The quantity of blood she is reported to have vomited might seem more than would be expected to pass through the eustachian tube but the vomited fluid will have included gastric juice and saliva as well as blood.

Hearing loss after temporal bone fracture can occur through a variety of mechanisms. These include direct trauma to the cochlear nerve, disruption of the membra-



FIG. 3
View at nasendoscopy showing blood running from the left eustachian tube.

nous labyrinth, vascular compromise or haemorrhage into the inner ear, perilymphatic fistula, and endolymphatic hydrops.⁴ In this case her complete recovery suggests that the hearing loss was purely due to blood filling the middle ear splinting the tympanic membrane.

This case demonstrates the need to remain vigilant for other diagnoses even when an apparently obvious cause for a patient's presenting problem is discovered.

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Mr A. Cruise takes responsibility for the integrity of the content of the paper.

Competing interests: None declared