CASE REPORT

Intramural oesophageal haematoma following traumatic neck injury

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SUMMARY

This case describes a previously well 90-year-old woman who presented with neck pain, swelling, dysphagia and hoarseness following a motor vehicle collision. Oesophageal oedema was visualised on CT of cervical spine and subsequent CT angiography highlighted an actively bleeding intramural oesophageal haematoma (IOH) extending from the cervical oesophagus to the carina. This rare phenomenon (IOH) has been described as a possible consequence of blunt trauma to the neck; however, we found no cases resulting from acceleration/deceleration injury. Although this was a potentially life-threatening injury, our patient made a full recovery with conservative management.

BACKGROUND

Most days working in the Emergency Department involve the assessment of neck pain following trauma. This was a very unusual presentation which emphasised the importance of keeping a high index

of suspicion and of understanding the mechanism of injury in trauma (the lack of headrest in this case exacerbating the whiplash effect and likelihood of soft tissue damage). Although intramural oesophageal haematoma (IOH) has been described in the literature as a possible consequence of blunt trauma to the neck, we found no cases resulting from acceleration/deceleration injury and felt it was important to highlight this as a potential cause.

CASE PRESENTATION

A 90-year-old woman self-presented to our emergency department with neck pain following a rear-end motor vehicle collision 3 hours previously. She had been the restrained driver of a car travelling at 60 km/hour. Interestingly, she had removed the headrest from the driver's seat because she found it uncomfortable.

She described acute onset of right-sided anterior neck pain immediately after the accident and later presented with persistent pain and new-onset dysphagia, hoarseness and neck swelling. She also had two episodes of vomiting (without haematemesis) before her arrival. Prior to this attendance, the patient was fit, well and independent. She had a background of hypertension, a hiatus hernia and hearing impairment, and was taking aspirin 75 mg, a proton pump inhibitor (PPI) and an antihypertensive agent. She lives at home with her husband and is a non-smoker.

She had bony tenderness from C2 to C5 with maximal tenderness in the soft tissues on the right side of the neck. There was very subtle anterior neck swelling. She had no evidence of any other injury and was haemodynamically stable and oriented with a Glasgow Coma Scale score of 15/15.

INVESTIGATIONS

Imaging

Plain X-ray of cervical spine ([figure 1](#)) showed no fracture but significant swelling in the prevertebral soft tissues. CT cervical spine ([figure 2](#)) confirmed no evidence of a fracture; however, there was marked oedema of the pharyngeal and thoracic oesophagus, with the suspicion of a large intramural haematoma. The trachea was displaced anteriorly but reported as not at risk.

A dynamic intravenous contrast-enhanced CT was performed. This demonstrated an actively bleeding oesophageal haematoma extending from the cervical oesophagus to the carina. The main radiological feature of 'active' bleeding was a

Figure 1 Lateral cervical spine X-ray showing prevertebral soft tissue swelling.

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Figure 2 Axial image of CT of thorax demonstrating intramural haematoma with anterior displacement of the trachea.

contrast blush in the cervical oesophagus posterior to the thyroid gland (figure 3). This was visible prior to venous enhancement indicating an arterial source.

A further CT neck was requested to assess for ongoing bleeding and requirement for involvement of endovascular surgery or interventional radiology. Continuous bleeding was established; however, the size of the haematoma had not increased dramatically and it remained contained.

Figure 3 Sagittal image of contrast-enhanced CT showing contrast blush in cervical oesophagus.

DIFFERENTIAL DIAGNOSIS

After the primary survey, we were immediately concerned about a cervical spine injury and due to her unusual presentation, an injury to the vasculature in the neck.

TREATMENT

Initial treatment consisted of spinal immobilisation, analgesia, antiemetic and nil per oral (NPO) order. After diagnosis of active bleeding, intravenous tranexamic acid 1 g was given because we felt that the risk of hypovolaemic shock outweighed the risk of thrombosis at this point. Intravenous PPI (esomeprazole 80 mg) was given after surgical review and dexamethasone 8 mg was given on anaesthetic recommendation.

The case was discussed with vascular surgery and interventional radiology who felt she should be managed conservatively while she remained haemodynamically stable. The patient was transferred to the intensive care unit (ICU) under care of the general surgical team for close observation, a conservative approach and the possibility of therapeutic endoscopy should she deteriorate.

OUTCOME AND FOLLOW-UP

At day 1 after admission, there was no clinical or radiological evidence of ongoing bleeding. Our patient remained stable in ICU for 48 hours. After transfer to the ward on day 3, she tolerated gradual introduction of fluids and soft diet. She was discharged home on day 6 with outpatient clinic follow-up. Endoscopy 2 months after discharge showed a normal oesophagus and she was discharged from surgical care.

DISCUSSION

IOH is a rare but well-described phenomenon. Precipitating events include prolonged vomiting, mechanical trauma (particularly endoscopy)¹ and ingestion of foreign bodies and toxic substances.² IOH may also be spontaneous in patients with coagulation disorders or on anticoagulation therapy.³ Reported cases typically describe IOH as occurring in the mid to lower third of the oesophagus and not forming as high as the cervical oesophagus.

Signs and symptoms

Typical presenting symptoms include (retrosteral) chest pain, dysphagia, odynophagia and vomiting.⁴ Later, haematemesis may occur as the haematoma expands and ruptures.⁵ Haemodynamic compromise (due to left atrial compression and blood loss)⁶ and tracheal compression⁷ have been reported with large thoracic haematomas. Neck pain has not been reported in the literature and, in this case, was due to the mechanism of injury and resulting 'high' cervical oesophageal haematoma.

Diagnosis/investigation

IOH may be diagnosed by CT or during endoscopy, depending on presenting symptoms.

Treatment/prognosis

The majority of cases resolve spontaneously with conservative medical management⁸ comprising an NPO order, cautious intravenous fluids and antiemetics plus supportive care. The aim is to prevent worsening of the haematoma with aggressive fluid resuscitation, inadequate blood pressure management or vomiting.^{6,7} Persistent bleeding may require endoscopic surgical intervention or arterial embolisation, if available.⁹ Following resolution of active bleeding, a soft diet can be gradually introduced.

Treatment with PPIs to reduce the risk of oesophageal ulceration is also recommended¹⁰ as well as correction of coagulation abnormalities.¹¹ Symptoms usually begin to settle after 36 hours with complete resolution within 2–3 weeks.⁵

A note on neck injuries

Older people are more predisposed to neck injuries due to physiological and structural differences compared with the younger population.¹² Neck injuries and insurance claims have prompted studies of optimal headrest design which aim to minimise relative movement between head and torso during impact. Minimising backset (distance between occiput and head restraint) and optimising height of head restraint (to be level with the top of the head) have been shown to reduce likelihood of injury.¹³

In Ireland and the UK, the rules for drivers state that before moving off 'head restraints must be properly adjusted to reduce the risk of neck and spine injuries in the event of a collision.'¹⁴ However, it is not actually illegal to drive without a headrest. Perhaps, this should be a governmental recommendation to reduce risk of serious neck injury. Success of headrests as a safety measure relies on public awareness and compliance.

Learning points

- ▶ For traumatic neck pain in older persons, should intramural oesophageal haematoma (IOH) be considered?
- ▶ Adopt a high degree of clinical suspicion of neck injury in older persons.
- ▶ Use your headrests properly! There is evidence.
- ▶ Manage traumatic IOH conservatively if haemodynamically stable.

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