Rare disease

An elderly woman with increasing dyspnoea after a fall

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Summary

An otherwise healthy 92-year-old woman was admitted to our department with shortness of breath and dysphagia 10 h after a fall in her bathroom. Medical checkup at another institution had not uncovered the causation of the complaints. Clinical and radiological examinations at our department then revealed an expanding retropharyngeal and prevertebral haematoma. Because of increasing dyspnoea, a lateral cervical approach was used to remove the haematoma and to achieve haemostasis. The authors could demonstrate that the source of bleeding was a minor injury of the anterior longitudinal ligament. Retropharyngeal haematoma is a potentially life-threatening condition because it can rapidly progress to airway obstruction. Large retropharyngeal haematoma after minor blunt head and neck trauma is not a well-recognised condition. This case, however, illustrates that precarious retropharyngeal haematoma can occur after low-energy trauma even without anticoagulation therapy. A high index of suspicion for this airway collapse is advisable in older patients.

BACKGROUND

Retropharyngeal haematoma is a potentially life-threatening condition because it can rapidly progress to airway obstruction. Most retropharyngeal haematomas are related to fractures of the cervical spine after high-energy accidents and occur in patients with anticoagulant treatment.^{1–4} Extensive retropharyngeal haematoma secondary to minor blunt head and neck trauma in patients without anticoagulants or antiplatelet agents is not a well-recognised condition, but clinicians should be alert to the potential for this delayed airway collapse.^{5–6} The mechanism of haemorrhage in these cases has been uncertain, and the source of bleeding has not been definitely demonstrated because most cases are managed conservatively by tracheal intubation or tracheostomy.²

CASE PRESENTATION

A 92-year-old woman was admitted to our department with an increasing foreign body sensation and odynophagia 10 h after a fall in her bathroom. Medical checkup at another institution had not uncovered the causation of the complaints. In spite of her old age, the woman was notably healthy and mentally fit. She was taking losartan and hydrochlorothiazide for arterial hypertension but no anticoagulants or antiplatelet agents.

INVESTIGATIONS

On examination, the old lady presented a bruise of the left-sided zygomatic and temporal region. A slightly swollen neck had also been noted by her family. Vital signs, neurological examination and blood test results including haemoglobin level, platelet count and coagulation screening were normal. Inspection of the oropharynx revealed the posterior pharyngeal wall to be bulged out and coloured dark blue. Fibreoptic nasendoscopy indicated narrowing of the hypopharynx and larynx from a posterior pharyngeal wall swelling which extended from

the nasopharynx to the piriform sinuses. CT with contrast medium and CT angiography confirmed that a large retropharyngeal haematoma narrowed the pharyngeal lumen (figure 1). Age-related tortuosity of the right-sided internal carotid artery was seen, but the major cervical vessels were intact. Despite advanced degenerative changes of the spine, fractures of the vertebrae were excluded.

TREATMENT

Intensive care monitoring and conservative treatment with intravenous corticoids and antibiotics (2nd generation cephalosporin and metronidazole) was started. As the patient developed increasing dyspnoea within the next 5 h, she was prepared for surgery. After transoral endotracheal intubation, a lateral cervical approach to the retropharyngeal and prevertebral space was used to remove clot and to drain the haematoma, which extended from the nasopharynx to the upper mediastinum. Intraoperatively, we could clearly demonstrate that a circumscribed tear of the anterior longitudinal ligament with dilaceration of small-sized arterial vessels was the source of a continuous bleeding into the retropharyngeal space. Haemostasis was achieved and assured by bipolar coagulation and use of a haemostatic collagen sponge coated with the human coagulation factors fibrinogen and thrombin which was positioned onto the anterior longitudinal ligament in the prevertebral space (figure 2). A cervical drain and a nasogastric feeding tube were inserted.

OUTCOME AND FOLLOW-UP

Postoperatively, the patient was successfully weaned from ventilation over a period of 1 day. Tracheostomy could be avoided. The cervical drain was removed after 3 days and the feeding tube after 6 days. MRI excluded other relevant injuries of intervertebral discs and ligaments, and the patient could be discharged 8 days after surgery.

Figure 1 Axial and sagittal CT of the retropharyngeal haematoma extending from the vertebral body C2 to T3 (dimension indicated by dots: 6.2 × 4.4 × 8.8 cm).

Figure 2 Lateral view into the retropharyngeal space after transcervical drainage of the haematoma displays minor damage of the anterior longitudinal ligament. TachoSil was inserted to maintain haemostasis and closure of the haematoma cavity.

DISCUSSION

The retropharyngeal and prevertebral space is a potential space of loose connective tissue that lies between the middle and the deep layers of the deep cervical fascia and extends from the skull base to the level of the third thoracic vertebra where these layers fuse.¹⁻⁷ As blood enters the retropharyngeal space, the expanding haematoma can extend from the skull base to the mediastinum and cause life-threatening airway obstruction at different levels.⁵⁻⁸ Retropharyngeal haematomas not associated with cervical spine fractures have been observed after car accidents with high-energy hyperextension injuries.¹⁻² It is presumed that the haematoma in these cases results from extensive damage of muscles and ligaments which cover the anterior aspect of the vertebral bodies and from the rupture of large anterior branches of vertebral arteries.¹⁻⁹ Retropharyngeal and prevertebral haematoma, after minor blunt trauma of the head or neck, is an uncommon condition that has infrequently been reported in older people with pre-existing risk factors including osteophytes, degenerative soft tissue changes and particularly anticoagulation therapy.⁸⁻⁹ Possible symptoms of retropharyngeal haematomas include dysphagia, dyspnoea, a sore throat, neck pain, dysphonia and swelling of the neck in case of widespread

haematomas. Particularly after low-energy traumas, these symptoms may first become apparent after a free interval of hours or even days but can then rapidly progress to life-threatening airway obstruction even without neurological disorders or pain.⁵ There is no consensus in the literature regarding the optimal treatment of retropharyngeal haematomas. Conservative therapy including observation and antibiotic coverage has been recommended as the treatment of choice by most authors.⁸ Large haematomas may threaten airway patency and require airway management. In these cases, primary tracheostomy in local anaesthesia has been recommended because it has been argued that endotracheal intubation may result in rupture of the haematoma.⁷⁻⁸ However, this complication has never been reported.⁷ Given an adequate remaining pharyngeal lumen, we have performed a careful, non-traumatic endotracheal intubation under the attendance of a head and neck surgeon and transcervical drainage of the haematoma to avoid tracheostomy, to limit the duration of intubation and hospital stay and to manage the source of bleeding adequately. A transpharyngeal approach to drain the haematoma was deemed inferior and more invasive because of an increased risk of postoperative swelling with the need for tracheostomy, the risk of bacterial contamination

Learning points

- ▶ Extensive life-threatening retropharyngeal haematomas can occur after low-energy traumas, even without anticoagulation therapy.
- ▶ A high index of suspicion for retropharyngeal haematomas is advisable particularly in older patients who complain of dysphagia or dyspnoea after head and neck traumas, especially hyperextension injuries.
- ▶ A transcervical approach provides an adequate overview of the retropharyngeal space, enables identification of the source of bleeding and drainage of extensive retropharyngeal haematomas, can prevent abscess formation and tracheostomy and shortens hospitalisation.

of the retropharyngeal space, the impossibility to place a drain for preventing reformation of the haematoma and, due to the dimension of the haematoma, the necessity of a large pharyngeal incision to localise the source of bleeding and to manage it adequately. We could demonstrate that large retropharyngeal haematomas are not only related to extensive anterior ligament damage with the rupture of larger blood vessel but can also, due to the local anatomic conditions of the retropharyngeal space, even result from the moderate bleeding of minor injuries of the anterior longitudinal ligament. Because retropharyngeal haematomas

tend to reform after surgical drainage, we have inserted a drain and a haemostatic surgical patch which reacts upon contact with blood and other fluids to form a clot and which is absorbed by the body within several weeks.¹⁰

Competing interests None.

Patient consent Obtained.

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