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Retropharyngeal space swelling secondary to minor blunt head and neck trauma

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Abstract
Retropharyngeal space swelling is a rare occurrence following minor head and neck trauma. Upper airway obstruction is a potentially life-threatening sequela. The authors present a case of retropharyngeal space haematoma following minor blunt head and neck trauma. Management was conservative with gradual spontaneous resolution of the haematoma. The literature is reviewed and the management and treatment principles presented.

Key words: Retropharyngeal space, Haematoma; Neck; Wounds and Injuries

Introduction

Retropharyngeal space swelling after minor blunt head and neck trauma is rare.[1] Predisposing factors include antithrombotic therapies, coagulation disorders, vascular lesions and pre-existing vertebral bone deformities such as ankylosing spondylitis and osteophytes.[2,3] The retropharyngeal space is clinically important because of its proximity to the upper airway.[4] Swelling in the space will cause the posterior pharyngeal wall to bulge anteriorly causing upper airway obstruction.

Case report

A previously fit 53-year-old man presented after a fall. He fell striking his head on a wall in a public bar and sustained a minor flexion-extension injury to the neck. Over a period of four hours he developed mild stridor, dysphonia and dysphagia. At presentation vital signs were normal and the patient was alert and orientated. Although he had consumed alcohol prior to the fall he did not appear to be intoxicated on arrival. Neurological examination was normal. Mild diffuse anterior neck swelling was present but there was no neck tenderness. Laryngeal crepitus was absent. Haemoglobin estimation, platelet count and coagulation screening were within normal limits. Fibre-optic nasendoscopic examination revealed a diffuse supra-glottic oedematous swelling of the posterior pharyngeal wall. The degree of swelling prevented a view of the glottic airway and hypopharynx. A lateral soft tissue neck radiograph showed the degree of swelling and its extent from the second to the sixth cervical vertebrae. No associated bony injury was detected (Figure 1).

The patient was admitted for close observation and monitoring to the intensive therapy unit and managed conservatively. Initial medical therapy comprised humidified oxygen, intravenous steroids and antibiotics. Computed tomography (CT) with intravenous contrast 12 hours later suggested that the swelling was secondary to haematoma rather than soft tissue oedema (Figure 2). The patient's mild stridor, dysphonia and dysphagia resolved over two to three days. Gradual resolution of the haematoma was noted on subsequent fibre-optic examinations and sequential lateral soft tissue neck radiographs (Figure 3). The patient was discharged six days following the injury.

Fig. 1
Lateral soft tissue neck radiograph at presentation showing extent of retropharyngeal swelling and anterior osteophytes of the fourth and fifth cervical vetrebrae.

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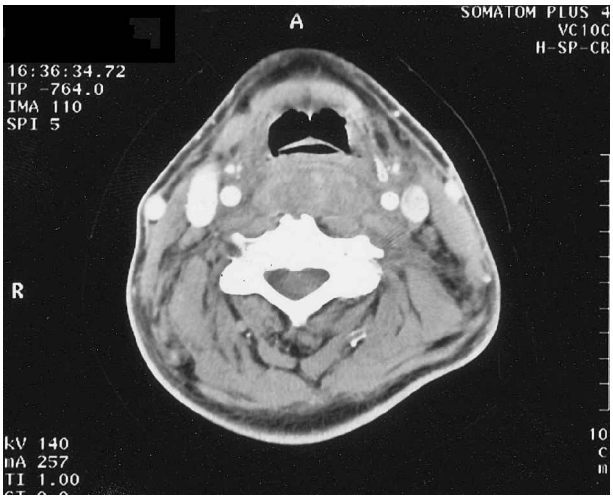

FIG. 2

Contrast enhanced axial CT scan showing large soft tissue mass positioned anterior to the vertebral body.

- **This paper presents a patient who developed a retropharyngeal haematoma following minor head and neck trauma**
- **The authors describe the management of such problems**
- **They contend that this injury is rare, which is undoubtedly true, but give no indication of the likely prevalence**

FIG. 3

Lateral soft tissue radiograph five days after presentation showing significant reduction of the soft tissue swelling and resolution of hypopharyngeal airway compression.

Discussion

The retropharyngeal space is a potential space between the middle (buccopharyngeal or alar fascia) and the deep (prevertebral fascia) layers of the deep cervical fascia. It extends from the skull base to the level of the second thoracic vertebra where these two layers fuse. The normal dimensions of the retropharyngeal space have been studied radiographically and reported in the literature. The average width of the retropharyngeal soft tissue is 3.4 mm (range 1–7 mm) at the second cervical vertebra and 14 mm (range 9–22 mm) at the sixth cervical vertebra.[4,5] In general the retropharyngeal soft tissue should measure no more than one third to one half of the width of the cervical spine. Any increase in this soft tissue width is suggestive of pathology of the retropharyngeal space.[4,5]

In the case described, CT scanning showed a large soft tissue mass (Hounsfield units 40–80) extending anteriorly from the second cervical vertebra to the cervicothoracic junction. There was no enhancement post-contrast. This is compatible with haematoma formation rather than soft tissue oedema, which has a density of less than 40 Hounsfield units. Oedema is thought to be less common following trauma as the amount of local tissue would appear to be too small to be able to cause significant oedematous swelling.[6] Haematomas on the other hand are assumed to expand within the loose areolar tissue, which is likely to give way to dissecting pressure.[6]

The management of traumatic retropharyngeal haematoma is conservative but in the presence of clinical signs of airway obstruction the airway must be secured immediately. This may take the form of either oro-tracheal or naso-tracheal intubation. Tracheostomy is preferred by some as the safest means of securing the airway in order to avoid further damage to the posterior pharyngeal wall or even rupture of the haematoma.[1,7] If the airway is not compromised at presentation the patient should be monitored closely in an intensive care unit setting. Management of the haematoma itself is not necessary in most cases. Complete resolution can take up to four weeks.[4] Transoral aspiration which is associated with an increased risk of infection and external drainage is reserved for expanding haematomas.[4,7]

Conclusion

A high index of suspicion and an early lateral soft tissue neck radiograph are crucial in the diagnosis of this rare injury. Sequential radiographs can be useful in charting the gradual resolution of haematoma but will also detect any delayed enlargement. Management, which is determined by the degree of airway compromise at presentation, must be directed at securing and maintaining the patient's airway.

References

1 O'Neill JV, Toomey JM, Snyder GG. Retropharyngeal haematoma secondary to minor blunt trauma in the elderly patient. *J Otolaryngol* 1977;**6**:43–6
2 Senthuran S, Lim S, Gunning KE. Life-threatening airway obstruction caused by a retropharyngeal haematoma. *Anaesthesia* 1999;**54**:670–82

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3 Van Velde R, Sars PRA, Olsman JG, Van De Hoeven H. Traumatic retropharyngeal haematoma treated by embolisation of the thyrocervical trunk. *Eur J Emerg Med* 2002;**9**:159–61

4 Dianiello NJ, Goldstein SI. Retropharyngeal haematoma secondary to minor blunt head and neck trauma. *Ear Nose Throat J* 1994;**73**:41–3

5 Shaw CB, Bawa R, Snider G, Wax MK. Traumatic retropharyngeal hematoma: A case report. *Otolaryngol Head Neck Surg* 1995;**113**:485–8

6 Penning L. Prevertebral haematoma in cervical spine injury: Incidence and etiologic significance. *Am J Roentgenol* 1981;**136**:553–61

7 Ophir D, Bartal N. Retropharyngeal haematoma following fishbone ingestion. *Ear, Nose and Throat J* 1998;**67**:528–30

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