CASE REPORT

Retropharyngeal cellulitis in adolescence

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SUMMARY

A healthy 10-year-old boy presented with fever and progressively worsening sore throat and dysphagia. Physical examination showed pharyngeal erythema with tender left cervical lymphadenopathy. Radiography revealed 9 mm deep prevertebral soft tissues at the C2 level, and contrast-enhanced CT showed fluid collection with no major ring enhancement in the retropharyngeal space. He was diagnosed with retropharyngeal cellulitis and treated with intravenous antibiotics. Retropharyngeal cellulitis or abscess is a relatively rare infection in adolescents but is more frequent in 2–4-year-old children. Retropharyngeal cellulitis may rapidly extend caudally, with fatal consequences. For adolescents, physicians need to be aware of this clinical entity and carefully evaluate imaging findings even when only the mild pharyngeal physical findings are noted.

BACKGROUND

Retropharyngeal cellulitis may rapidly extend caudally, causing upper-airway compromise, epidural abscess, mediastinitis, carotid artery aneurysm or erosion, internal jugular vein thrombophlebitis, septic pulmonary embolism, cranial nerve dysfunction (IX–XII), cavernous sinus thrombosis, aspiration pneumonia, or a rare but life-threatening descending necrotising mediastinitis and sepsis.¹ As retropharyngeal cellulitis is believed to be a predecessor of a retropharyngeal abscess, early detection may alleviate the necessity for surgical drainage. Retropharyngeal cellulitis or abscess is a relatively uncommon infection in adolescents, but much more common in children aged between 2 and 4 years.^{2–3}

CASE PRESENTATION

A healthy 10-year-old boy presenting with fever and progressively worsening sore throat and dysphagia was admitted to our hospital. The patient had no history of being scratched by a cat, no headache, chest pain, drooling, dyspnoea, cough, conjunctival hyperaemia or history of trauma. On admission, his temperature was 38.5°C; pulse rate, 90 bpm; blood pressure, 116/62 mm Hg; respiratory rate, 24/min; and Glasgow Coma Scale score, E4V5M6. Physical examination revealed pharyngeal erythema with tender left cervical lymphadenopathy; however, no strawberry tongue, trismus, deviation of the uvula, obvious pharyngeal oedema or tenderness to palpation on moving the larynx side-to-side was noted. However, the patient preferred to maintain his neck in an extended position.

INVESTIGATIONS

Laboratory tests showed inflammation (white blood cell count, 10 500/μl (neutrophils, 78.3%; eosinophils, 0.3%; monocytes, 11.1%; and

lymphocytes, 10.1%); C reactive protein level, 130 mg/l), and serum antistreptolysin O test and blood culture results were negative. A radiograph showed 9 mm deep prevertebral soft tissues at the C2 level; therefore, contrast-enhanced CT was performed. Axial enhanced CT showed fluid collection within the retropharyngeal space with widening of the space; however, no major ring enhancement surrounded this fluid collection, indicating the absence of abscess formation (figure 1). Further, no cystic hygroma or fluid collection around the lateral retropharyngeal lymph node was observed. The sagittal plane showed a focus of low-density area within the prevertebral/retropharyngeal space, anterior to the C1 through the C4 vertebrae, which was consistent with a diagnosis of retropharyngeal cellulitis.

DIFFERENTIAL DIAGNOSIS

- ▶ Cat scratch disease
- ▶ Cystic hygroma
- ▶ Epiglottitis
- ▶ Kawasaki disease
- ▶ Lymphadenopathy
- ▶ Lymphoproliferative disorders
- ▶ Tuberculosis.

OUTCOME AND FOLLOW-UP

The patient received intravenous antibiotic therapy, underwent laryngoscopy daily and received careful

Figure 1 Cervical CT image showing soft tissue swelling and effusion in the retropharyngeal space.

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monitoring; finally, after 5 days, he was discharged with no complications.

DISCUSSION

Retropharyngeal cellulitis is a rare infection in adolescents with serious consequences. Examination findings for retropharyngeal cellulitis may include diffuse oedema and erythema of the posterior pharynx; however, these findings are not always evident.⁴ If there are no signs of airway compromise and the suspicion is low, lateral-neck radiography may be the initial study; if the suspicion is strong, CT with contrast is the preferred study. In the present case, lateral-neck radiography revealed widening of the retropharyngeal soft tissues, indicating an abscess; however, since the thickness of the cellulitis changes did not exceed a few millimeters, it would have been easy to overlook these findings.⁵ CT scanning is useful in differentiating retropharyngeal cellulitis and an abscess; its ability to distinguish cellulitis from an abscess is important in determining the medical treatment and the need for surgical intervention.³ In the present case, cellulitis was observed in low-density areas, and no major ring enhancement around the abnormal area was observed (figure 1). Premature incision in a cellulitis area may actually worsen the clinical condition by breaking down the natural defenses and hastening the spread of infection. Although we did not perform MRI, this imaging modality can provide critical information when intracranial or intraspinal involvement is suspected.

In conclusion, the rapid onset and potentially life-threatening course of these infections makes it imperative for clinicians to be aware of these clinical entities and carefully evaluate imaging findings even when only mild pharyngeal physical findings are noted.

Learning points

- ▶ Retropharyngeal cellulitis is believed to be a predecessor of a retropharyngeal abscess, and early detection may alleviate the necessity for surgical drainage.
- ▶ Retropharyngeal cellulitis may rapidly extend superiorly to the base of the skull and inferiorly to the mediastinum, leading to potentially life-threatening complications.
- ▶ CT scanning is useful in differentiating retropharyngeal cellulitis and a retropharyngeal abscess.

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Competing interests None.

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