
CASE REPORT

Acute Calcific Prevertebral Tendonitis: an Uncommon Cause of Acute Neck Pain Presenting with a Retropharyngeal Effusion

FNY Sin, AB Lo, KL Siu, WP Chu

Department of Radiology, Princess Margaret Hospital, Laichikok, Kowloon, Hong Kong

ABSTRACT

Acute calcific prevertebral tendonitis is a self-limiting inflammatory process due to deposition of calcium hydroxyapatite in the tendon fibres of the longus colli muscles. Its initial clinical and radiological presentation significantly overlaps with that of a retropharyngeal abscess. In both conditions, patients may present with acute/subacute-onset neck pain, painful swallowing, fever and the appearance of retropharyngeal soft tissue thickening on the lateral neck radiograph due to presence of fluid. Definitive imaging diagnosis relies on the detection of prevertebral soft tissue calcification within the tendinous insertion of the longus colli muscle at about the C1-2 level. It is important for radiologists and clinicians to be aware of this condition and its imaging findings in order to differentiate it from retropharyngeal infection, so as to avoid misdirected medical therapy and invasive attempts at surgical drainage.

Key Words: Calcinosis; Neck muscles; Retropharyngeal abscess; Tendinopathy; Tomography, X-ray computed

中文摘要

急性鈣化性椎前肌腱炎：急性頸痛伴咽後積液的一個罕見病因

單雅怡、羅彪、蕭廣樂、朱惠邦

急性鈣化性椎前肌腱炎是一種自限性炎症過程，病因為羶磷灰石鈣物質積聚在頸長肌的腱纖維內。起初的臨床及放射表徵與咽後膿腫相類似，兩種病的患者均會有急性或亞急性頸痛、吞嚥時感到痛楚、發燒，並由於積液的關係，咽後軟組織往往在放射影像中變厚。為病人確診，必須在C1-2椎骨頸長肌腱的位置發現椎前軟組織鈣化。要避免誤用藥物治療及避免手術引流的侵入式治療，臨床醫生及放射科醫生必須了解此病及放射影像表現以區別此病與咽後感染。

INTRODUCTION

Acute calcific prevertebral tendonitis is an inflammatory process caused by deposition of calcium hydroxyapatite in the superior oblique tendon fibres of the longus colli muscles. Patients usually present with the clinical triad of (1) neck pain radiating to the occiput of several days'

duration, (2) painful swallowing (odynophagia), and (3) fever. Its signs and symptoms can overlap significantly with those of a retropharyngeal abscess. Knowledge of this condition and making the correct diagnosis can save the patient from misdirected medical therapy and inappropriate attempts at surgical drainage. We

Correspondence: Dr Francesca NY Sin, Department of Radiology, HLG 1, Main Block, Princess Margaret Hospital, Laichikok, Kowloon, Hong Kong.

Tel: (852) 2990 1357; Email: fnysin@yahoo.com.hk

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present a case of acute calcific prevertebral tendonitis, initially being interpreted as a retropharyngeal abscess. The definitive diagnosis was made based on the characteristic computed tomography (CT) findings.

CASE REPORT

A 39-year-old man with good past health presented with a 2-day history of right-sided neck pain, sore throat, and odynophagia in June 2010. There was no history of trauma, foreign body ingestion, or other symptoms of upper respiratory tract infection. Physical examination revealed limited range of neck movement associated with severe tenderness. The throat was not congested and there was no cervical lymphadenopathy. There was a slightly raised body temperature of 37.8°C and a slightly elevated white cell count of 11.4×10^9 /L. The lateral cervical radiograph on admission revealed retropharyngeal soft tissue swelling over the upper cervical region. Upon retrospective review of the radiograph, very subtle calcifications were discerned inferior to the anterior arch of the C1 vertebra (Figure 1).

Based on the initial clinical and radiological findings, a retropharyngeal abscess was suspected and CT of the neck was arranged. Non-contrast CT images showed a small fluid collection in the retropharyngeal space, and calcifications within the proximal longus colli tendons, just inferior to the anterior arch of the C1 vertebral body (Figure 2). Contrast-enhanced CT showed no enhanced rim in the retropharyngeal fluid collection (Figure 3). No enlarged cervical lymph node was detected. The diagnosis of acute calcific prevertebral tendonitis was made. The patient was treated with oral non-steroidal anti-inflammatory drugs (NSAIDs) and a course of amoxicillin / clavulanate and responded well with rapid symptomatic improvement. The magnetic resonance image (MRI) of the cervical spine region two weeks later showed interval resolution of the prevertebral effusion. A faint hypointense focus could still be detected inferior to the anterior arch of the C1 vertebra, suggesting residual calcification (Figure 4).

DISCUSSION

The longus colli muscle is a paired neck flexor that lies on the anterior surface of the vertebral column and extends from C1 to T3 levels. Together with the longus capitis, this muscle takes up the bulk of the prevertebral space. The longus colli muscle consists of the vertical, superior oblique and inferior oblique portions. Calcific tendonitis occurs when calcium deposits on the tendons of the superior oblique portion of the longus colli

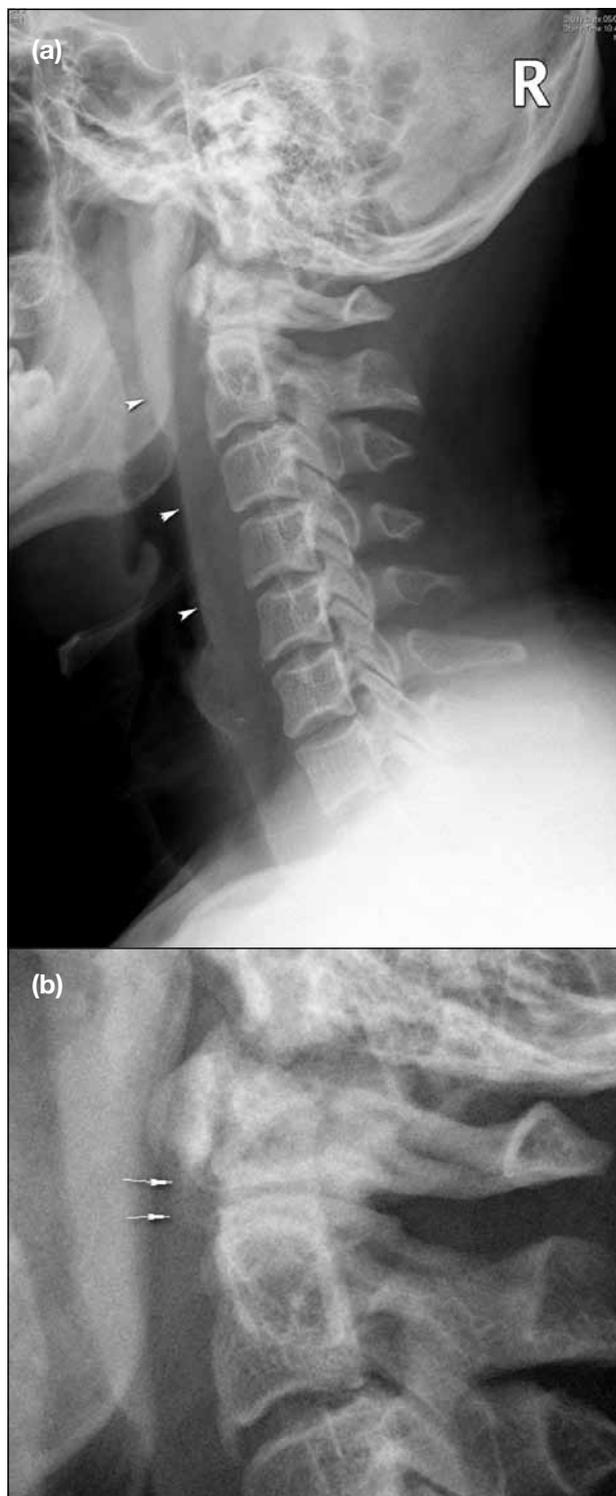


Figure 1. (a) A lateral cervical radiograph on admission shows prevertebral soft tissue swelling (arrowheads). (b) Calcifications inferior to the anterior arch of the C1 vertebra were very subtle (arrows).

muscle (originating from the transverse processes of C3 to C5 vertebral bodies) and inserts onto the anterior tubercle of the atlas.

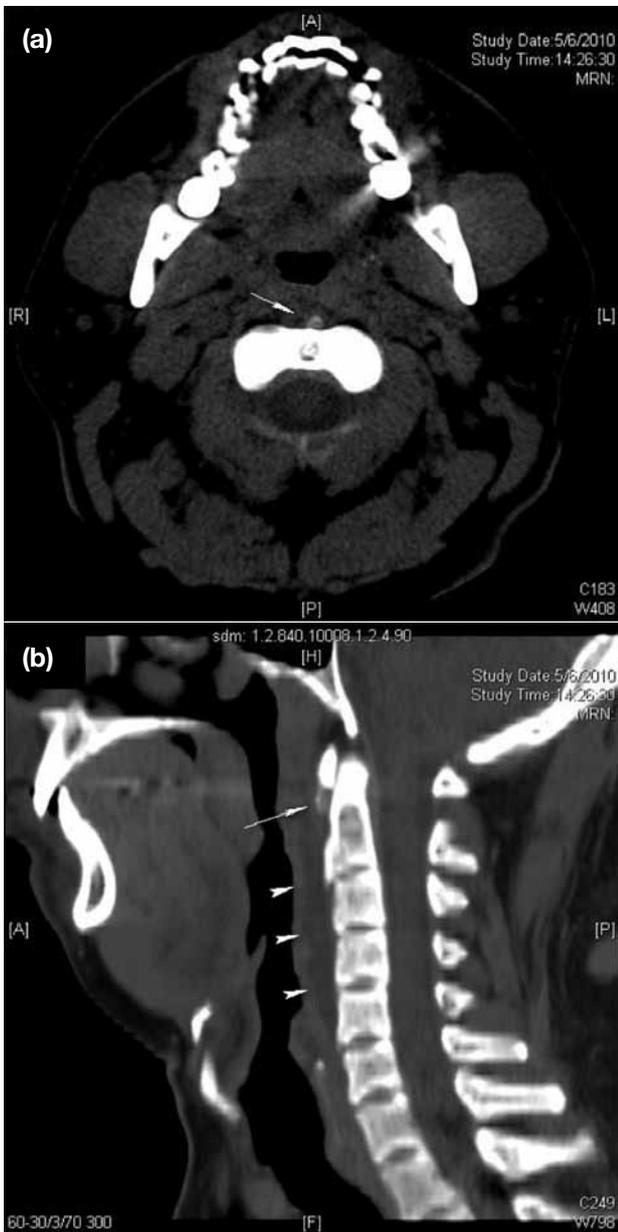


Figure 2. (a) An axial pre-contrast computed tomographic (CT) image at the level of C1, showing prevertebral calcification slightly off midline (arrow), compatible with a lesion within the superior portion of the longus colli tendon. (b) A sagittal CT image allows better demonstration of the calcification inferior to anterior arch of C1 vertebra (arrow). A fluid collection at the retropharyngeal space is also seen extending from C2 to C5 levels (arrowheads).

Acute calcific prevertebral tendonitis, also known as acute calcific retropharyngeal tendonitis or longus colli tendonitis, is a clinical syndrome originally described by Hartley in 1964¹ and was later shown to be due to calcium hydroxyapatite deposition by Ring et al in 1994.² It occurs most frequently in the third through the sixth decades of life and has a similar histopathology to calcific tendonitis of the appendicular

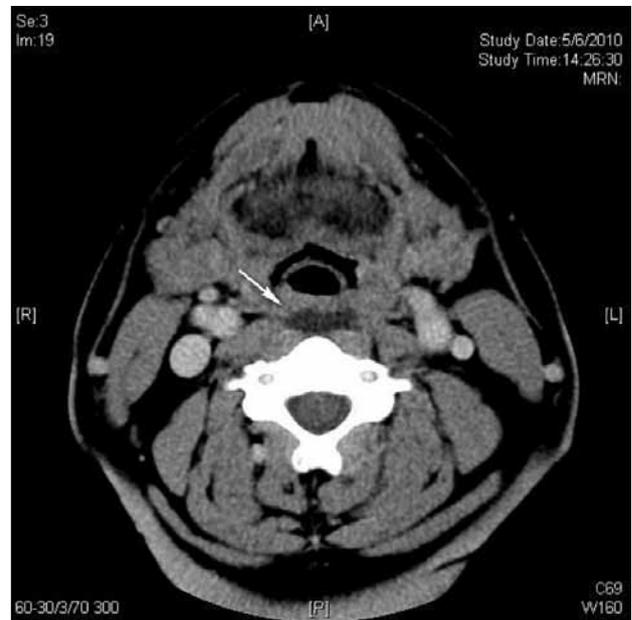


Figure 3. An axial contrast computed tomographic image shows a fluid collection (arrow) without an enhancing rim smoothly expanding the retropharyngeal space. Peripheral fat planes were preserved. No enlarged cervical lymph node was detected (not shown).



Figure 4. Magnetic resonance imaging examination performed two weeks after the initial presentation shows interval resolution of the prevertebral effusion on sagittal STIR (short tau inversion recovery) image. Faint hypointense focus could still be detected inferior to the anterior arch of C1 suggesting residual calcification (arrow).

skeleton, most commonly in the shoulder. Rupture of the calcareous deposits within the tendon of the longus colli muscle result in inflammation, producing pain and spasm. Symptoms normally improve with the gradual resorption of the extruded calcium.³

The initial clinical presentation and radiological features of acute calcific prevertebral tendonitis can mimic an infective process such as retropharyngeal abscess. Typically, the patient presents with acute-to-subacute-onset neck pain, sore throat, odynophagia, and a low-grade fever. The white cell count may be mildly elevated. In both conditions, lateral cervical radiography yields thickening of the prevertebral soft tissues due to presence of retropharyngeal fluid.

An accurate diagnosis of acute calcific prevertebral tendonitis can only be made when the characteristic prevertebral calcifications at the region of tendinous insertion of the longus colli muscles can be detected. On a lateral neck radiograph, the characteristic calcifications can sometimes be discerned, but may be very subtle and overlooked by clinicians initially attending to the patient. Cross-sectional imaging that reveals acute calcific retropharyngeal tendonitis could include a smooth expansion of the retropharyngeal space (due to spread of retropharyngeal fluid in all directions), and no enhancing wall should be present as might be seen in a retropharyngeal abscess. Moreover, no suppurative lymph nodes with low-density centres should be detected in the retropharyngeal space. Finally, pathognomonic tendinous calcifications within the insertion site of longus colli muscle are not present in an abscess. The calcific deposits tend to lie slightly off the midline, consistent with the superomedial course of the superior oblique portion of the longus colli muscle.⁴ With the advent of multidetector CT, this previously underdiagnosed entity is increasingly recognised, especially if the prevertebral calcifications are not easily noted on lateral cervical radiographs. Both CT and MRI can readily detect the retropharyngeal fluid collection, but CT scan is more sensitive in demonstrating the characteristic calcifications in the tendon; calcific foci appear as hypointense foci in MRIs.

Eastwood et al⁵ had stressed that if the characteristic radiological features of this self-limiting entity are not observed, this condition can be mistaken for a retropharyngeal space infection. It is important to distinguish between these two disease processes as their clinical management differs considerably. Retropharyngeal abscess formation is treated with antibiotics and surgical drainage. Whereas in acute calcific tendonitis, a conservative approach with anti-inflammatory drugs is usually sufficient.

If not treated, symptoms of acute calcific prevertebral tendonitis which is generally a benign and self-limiting disorder will resolve within several weeks. Treatment with an NSAID may hasten resolution of inflammation, and symptoms may subside within 72 hours.⁶ A short course of steroid may be used as supplementary treatment for patients with severe symptoms.

Recognising acute calcific prevertebral tendonitis as a cause of acute neck pain with prevertebral soft tissue swelling is important. Awareness of its existence and recognition of its typical appearance on radiographs and CT images are crucial to establishing an accurate diagnosis. Success in differentiating it from retropharyngeal abscess formation may save the patient from an unnecessary diagnostic workup and surgical procedures.

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