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A MIMICKER OF MENINGITIS, RETROPHARYNGEAL ABSCESS AND CERVICAL SPONDYLODISCITIS – ACUTE CALCIFIC TENDINITIS OF LONGUS COLLI MUSCLE

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ABSTRACT

Introduction: Acute calcific tendinitis of the longus colli muscle can present with symptoms resembling severe conditions such as meningitis, an intracranial abscess, a retropharyngeal abscess or cervical spondylodiscitis.

Case description: A 37-year-old Chinese female was admitted with neck pain, headache, fever and odynophagia, raising concerns for meningitis, a retropharyngeal abscess or cervical spondylodiscitis. The physical examination was unremarkable except for restricted neck movement and tenderness over right upper paravertebral area. Laboratory investigations were unremarkable. A CT scan of the neck showed nodular calcification just below the C1 anterior arch; MRI with contrast revealed T2-weighted hyperintensity with enhancement in the retropharyngeal space, along with minor oedema over the adjacent longus coli muscle. A final diagnosis of acute calcific tendinitis of longus colli was established, based on the radiological findings and clinical response to treatment.

Discussion: Acute calcific tendinitis of the longus muscle is a rare inflammatory condition caused by the deposition of amorphous calcium hydroxyapatite crystals in the anterior C1–C2 disc space. Due to its anatomical location, inflammation will result in triggering similar symptoms as in meningitis, an intracranial abscess, a retropharyngeal abscess or cervical spondylodiscitis. CT and MRI imaging are the gold standard for diagnostic investigation; there are no formal treatment guidelines, and management is conservative, primarily involving analgesia.

Conclusion: Clinicians should be aware that acute calcific tendinitis of the longus muscle can present with symptoms that mimic other severe conditions such as meningitis, an intracranial abscess, a retropharyngeal abscess or cervical spondylodiscitis.

KEYWORDS

Neck pain, odynophagia, amorphous calcium hydroxyapatite crystals deposition, calcific tendinitis of longus colli muscle

LEARNING POINTS

- Be aware of the presentation of acute calcific tendinitis of the longus colli muscle, which can mimic severe conditions such as meningitis, an intracranial abscess, a retropharyngeal abscess or cervical spondylodiscitis.
- Recognising the characteristic radiological findings of acute calcific tendinitis of the longus colli muscle is crucial to avoid unnecessary invasive and surgical interventions and ensure appropriate conservative management.

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INTRODUCTION

Acute calcific tendinitis of the longus colli muscle is a benign, rare, aseptic inflammatory condition. First reported by Hartley et al. in 1964[1], the signs and symptoms, such as neck pain, neck stiffness, odynophagia and fever can mimic several severe conditions, including meningitis, an intracranial abscess, a retropharyngeal abscess or cervical spondylodiscitis. This report presents a case of a young female who initially presented with neck pain, headache and odynophagia, raising concerns of meningitis, a retropharyngeal abscess or cervical spondylodiscitis. However, she was eventually diagnosed with acute calcific tendinitis of the longus colli muscle. This highlights the importance of including this rare condition in the differential diagnosis, which can lead to more accurate diagnoses and appropriate treatment plans, ultimately improving patient care and reducing unnecessary interventions.

CASE DESCRIPTION

A 37-year-old Chinese female presented with right sided posterior neck pain for one week. The pain was pulling in nature, worsening with neck movements and without any alleviating factors. She described the pain as the worst in her life. She later also developed headache and odynophagia. She sought medical review at a primary care physician three days after the onset of symptoms and was diagnosed with neck muscle strain. Despite being prescribed oral tramadol and gabapentin for analgesia, her symptoms persisted, which prompted her to seek medical attention at the Emergency Department. On system review she denied fever, photophobia, blurred vision, nausea, vomiting, limb numbness, weakness, runny nose, sore throat, neck swelling and constitutional symptoms.

Her initial vital signs, including temperature, blood pressure, heart rate and respiratory rate, were within normal limits. Examination of her neck revealed restricted movement in all directions due to pain. Kernig's sign was negative, but Brudzinski's sign could not be performed due to her neck pain. She had tenderness on palpation of the right upper paravertebral area but there was no midline cervical spine tenderness. Her oral hygiene was fair, with normal tonsils and no throat erythema. There was no palpable neck mass or cervical lymph node, and no neurological deficits were observed. Other examinations, including cardiovascular, respiratory and abdominal systems were unremarkable.

Initial blood tests showed normal total white blood cell count, normal procalcitonin of <0.06 µg/l, normal erythrocyte sedimentation rate of 12 mm/hr and a mildly raised C-reactive protein of 12.5 mg/l. A cervical spine X-ray with antero-posterior and lateral views showed straightening of cervical lordosis but no pre-vertebral soft tissue thickening. She was initially treated with intravenous tramadol for symptom control. Antibiotics were not administered due to low suspicion of infection, given her insignificant inflammatory markers.

A CT scan of the neck revealed no retropharyngeal collection

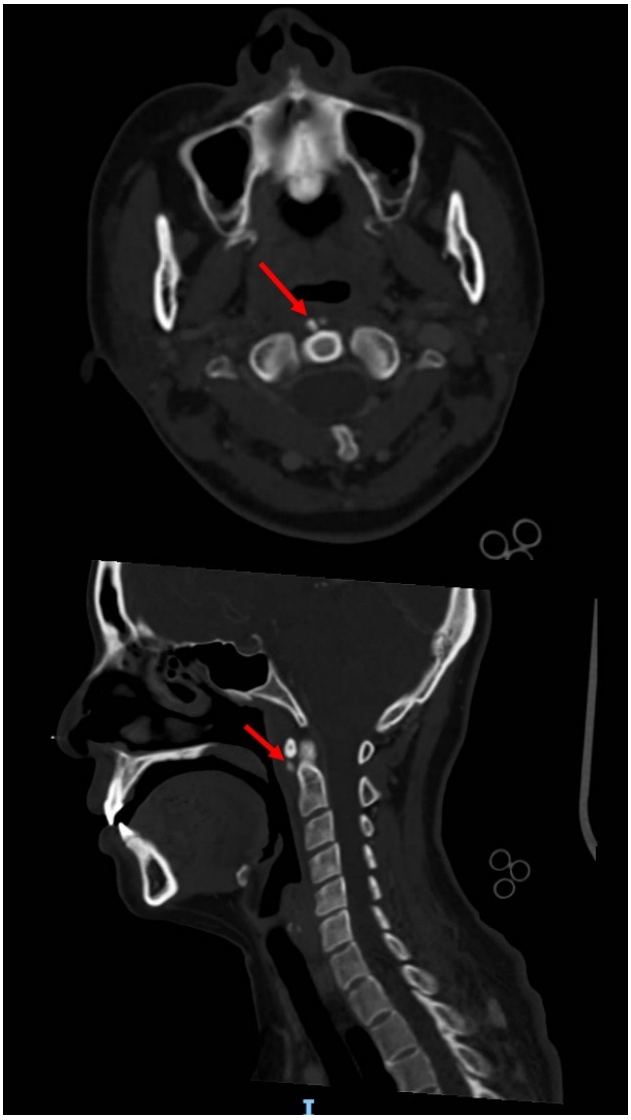


Figure 1. CT of the neck without contrast in the bone window (coronal plane on the left) showed nodular calcification on the C1 vertebra and below the anterior arch of C1 (sagittal plane on the right).

or evidence of spondylodiscitis. Nodular calcification just below the C1 anterior arch raised the possibility of calcific tendinitis of the longus colli muscle *(Fig. 1)*. MRI of the cervical spine without contrast showed prominent fluid accumulation in the retropharyngeal space from C1–C4 level *(Fig. 2)*, which could indicate infection or inflammation.

The patient subsequently developed a fever of 38.3°C, was started on intravenous piperacillin/tazobactam to cover the possibility of a retropharyngeal abscess, given the MRI findings. A nasoendoscopy was performed by an otorhinolaryngologist, which showed no mass over the post-nasal space; the mucosa over the retropharyngeal wall was smooth, without any obvious irregularity.

The patient then underwent an MRI of the neck with contrast, to further delineate the fluid in the retropharyngeal space and a magnetic resonance angiography (MRA) of the neck to evaluate for possible carotid or subclavian artery dissection. The MRI neck with contrast revealed retropharyngeal T2-weighted hyperintensity with enhancement, likely representing residual reactive or inflammatory changes,

while the retropharyngeal fluid had resolved. Minor enhancement and oedema of the adjacent longus colli were probably inflammatory *(Fig. 3)*. The MRA showed no luminal stenosis, dissection or aneurysm in the intra- and extracranial arteries.

A final diagnosis of acute calcific tendinitis of the longus colli muscle was established. Her neck pain improved with oral tramadol at the time of final diagnosis. Her fever subsided and was attributed to thrombophlebitis. Intravenous piperacillin/tazobactam was discontinued and changed to oral amoxicillin and clavulanic acid prior to discharge. She was reviewed in the outpatient clinic two weeks after discharge; her symptoms had entirely resolved.

DISCUSSION

Acute calcific tendinitis of the longus colli muscle is a rare condition characterised by non-infective inflammation of the superior oblique tendons of the longus colli muscle[2]. This inflammation is due to the deposition of amorphous calcium hydroxyapatite crystals in the anterior C1–C2 disc space[2]. Some cases occur in unusual areas such as C5–C6[3,4]. However, the precise aetiology and pathogenesis remain unclear[5].

The longus colli is a long, flat muscle that attaches to the anterior surface of the spine. It comprises three segments: the superior oblique, inferior oblique and vertical portion, which connect the cervical vertebral bodies to the associated transverse processes. The longus colli muscle acts bilaterally to flex and unilaterally to tilt the head at the cranio-cervical junction. Consequently, inflammation or straining of the longus colli muscle can elicit symptoms such as neck stiffness and neck pain[5], which may mimic the symptoms of meningitis, spondylodiscitis or retropharyngeal abscess[6].

Imaging techniques such as CT or MRI are considered the gold standard diagnostic tests for acute calcific tendinitis of the longus colli muscle[5]. A CT of the neck typically reveals calcium deposition in the longus colli muscle with retropharyngeal oedema[5]. MRI of the neck also shows calcium deposition, oedema and non-enhancing retropharyngeal effusion[5]. In non-infectious retropharyngeal effusion, the fluid is usually elongated and non-enhancing, whereas in retropharyngeal abscess, the fluid is likely to be more rounded in shape and rim-enhancing[5]. In our case, the patient's MRI of the cervical spine showed elongated fluid from C1–C4 level, suggesting a likely non-infectious cause.

Our patient's neck pain symptoms had persisted for one week prior to seeking medical attention. Her presentation is unusual, as most case reports document improvement of symptoms within three days. Total symptom resolution is typically expected within 1–2 weeks[6,7].

However, the diagnosis of acute calcific tendinitis of the longus colli muscle was confirmed by the MRI findings of elongated fluid accumulation in the retropharyngeal space from C1–C4, CT findings of nodular calcification just below the C1 anterior arch, low inflammatory markers and resolution of symptoms with analgesics.



Figure 2. MRI of the cervical spine without contrast on a T2-weighted image showed prominent fluid accumulation in the retropharyngeal space from the C1 to C4 levels.

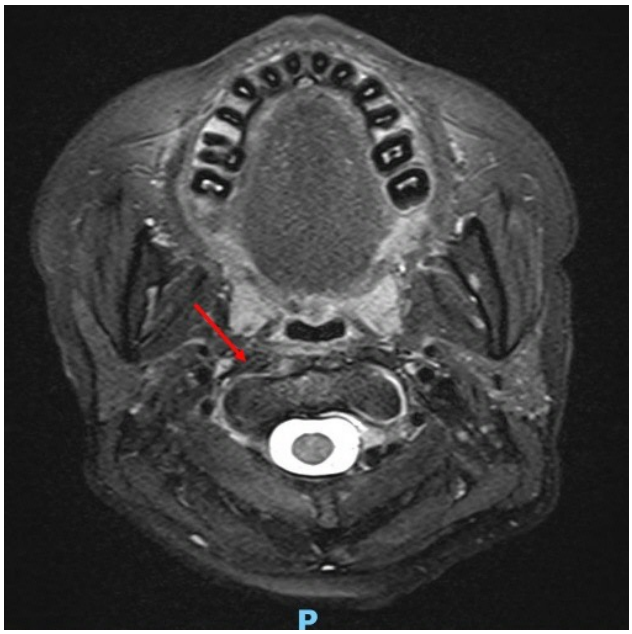


Figure 3. MRI of the neck, T2-weighted image with contrast showed minor enhancement and oedema of the adjacent longus colli, which are probably inflammatory.

Regarding treatment, there are no formal guidelines for managing acute calcific tendinitis of the longus colli muscle[8]. It is a self-limiting disease, and NSAIDs are commonly used for treatment. In our case, the patient was not given NSAIDs but was instead administered tramadol, as her symptoms had improved significantly by the time of final diagnosis confirmation.

CONCLUSION

This case report describes the presentation, radiographic findings and management of a patient with acute calcific tendinitis of the longus colli muscle. Clinicians must be aware

of this condition, which can mimic other severe conditions such as meningitis, spondylodiscitis or retropharyngeal abscess in terms of presentation. This awareness is crucial to avoid unnecessary invasive and surgical interventions.

REFERENCES

1. Hartley J. Acute cervical pain associated with retropharyngeal calcium deposit: a case report. *J Bone Joint Surg Am* 1964;**46**:1753–1754.
2. Estimable K, Rizk C, Pujalte GG. A rare case of neck pain: acute longus colli calcific tendinitis in a possibly immunocompromised individual. *J Am Board Fam Med* 2015;**28**:146–150.
3. Zibis AH, Giannis D, Malizos KN, Kitsioulis P, Arvanitis DL. Acute calcific tendinitis of the longus colli muscle: case report and review of the literature. *Eur Spine J* 2013;**22**(Suppl.3):S434–438.
4. Park SY, Jin W, Lee SH, Park JS, Yang DM, Ryu KN. Acute retropharyngeal calcific tendinitis: a case report with unusual location of calcification. *Skeletal Radiol* 2010;**39**:817–820.
5. Langford B, Kleinman Sween J, Penn DM, Hooten WM. Severe neck pain and odynophagia secondary to acute calcific longus colli tendinitis: a case report. *J Med Case Rep* 2020;**14**:148.
6. Alamoudi U, Al-Sayed AA, AlSallumi Y, Rigby MH, Taylor SM, Hart RD, et al. Acute calcific tendinitis of the longus colli muscle masquerading as a retropharyngeal abscess: a case report and review of the literature. *Int J Surg Case Rep* 2017;**41**:343–346.
7. Chung T, Rebello R, Gooden EE. Retropharyngeal calcific tendinitis: case report and review of literature. *Emerg Radiol* 2005;**11**:375–380.
8. Abdelbaki A, Abdelbaki S, Bhatt N, Gupta N, Li S, Ghasemiesfe A, et al. Acute calcific tendinitis of the longus colli muscle: report of two cases and review of the literature. *Cureus* 2017;**9**:e1597.