

Acute Calcific Tendinitis of Longus Colli: An Uncommon Cause of Acute Neck Pain

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ABSTRACT

Acute calcific tendinitis of the longus colli muscle is an inflammatory condition associated with calcifications in longus colli muscle fibers which can present as acute neck pain. We present a case of a patient presenting with acute neck pain. MRI showed retropharyngeal effusion and edema of the left side longus colli muscle. CT showed amorphous calcifications in prevertebral region at C2 level which is a characteristic finding. Effusion in left lateral atlantoaxial joint is an uncommon associated finding in this condition which was seen in this case. It is important to recognize imaging features to prevent unnecessary investigations and surgical intervention.

Key words: Calcific tendinitis; CT; longus colli; magnetic resonance imaging

Introduction

Acute calcific tendinitis of the longus colli muscle is an inflammatory condition associated with calcium deposition in the longus colli muscle.^[1] It can mimic other causes of neck pain caused by infection, neoplasm, and trauma.^[2] CT shows characteristic calcifications in superior fibers of the longus colli muscle.^[1] It is important to recognize imaging findings since this is a benign condition and resolves in few days. We report a case of acute longus colli calcific tendinitis presenting with acute neck pain.

Case Report

A 50-year-old male presented with acute neck pain and odynophagia since 7 days. There was associated sore throat. Mild elevation of white cell count was seen. There was no history of trauma. Initial plain radiography of neck revealed increased thickness of prevertebral soft tissue [Figure 1]. MRI showed a uniform retropharyngeal effusion from C1-C4 level [Figure 2]. There was increased signal on T2-weighted images on the left side longus colli muscle at C1-C2 level [Figure 3]. Effusion was seen in left atlanto axial joint [Figure 4]. C5 and C6 vertebrae

showed signal abnormalities of endplates, hypointense on T1weighted and hyperintense on T2weighted images which represent degenerative endplate changes. CT scan of the neck showed focal calcifications anterior to C2 vertebra [Figures 5 and 6]. Based on imaging findings, the diagnosis of acute longus colli calcific tendinitis was evoked. The patient was treated with anti-inflammatory medicines and rest. After 1 week there was complete resolution of symptoms. A follow-up plain radiograph of lateral cervical spine showed decreased thickness of prevertebral soft tissue [Figure 7]. Normal thickness of posterior pharyngeal space at level of C3 vertebra ranges from 1.5 to 4.5 mm.^[3]

Discussion

Acute calcific tendinitis of the longus colli muscle is an inflammatory condition. It is associated with calcium hydroxyapatite deposition in the longus colli muscle. The condition was described originally by Hartley^[4] in 1964 and was demonstrated by Ring^[2] and colleagues in 1994 to be secondary to calcium hydroxyapatite deposition in the longus colli muscle. Calcific tendinitis is a well-known condition of shoulder.^[5] It has also been described at other sites like rectus femoris,^[6] hip (gluteus maximus), ankle (peroneus longus),^[5] hand, and wrist.^[7,8]

The aetiopathogenesis of calcific tendinitis is still controversial, but it seems to be the result of an active cell-mediated process.^[9] Different theories have been proposed to explain the pathophysiology. Uthoff *et al.* proposed the theory of reactive calcification which involves an active cell-mediated process.^[10] Benjamin *et al.* suggested

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that calcium deposits are formed by a process resembling endochondral ossification.^[11] Rui *et al.* proposed theory

of ectopic bone formation from metaplasia of stem cells normally present in tendon tissue into osteogenic cells.^[12]

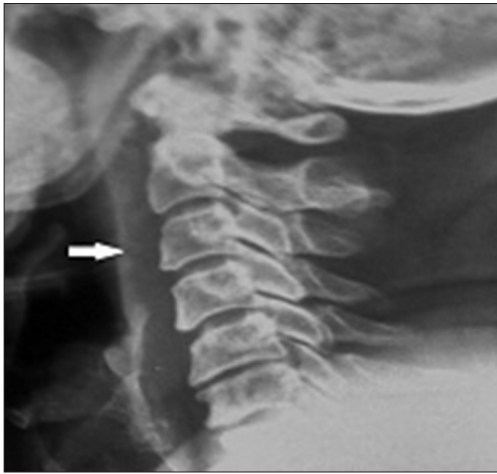


Figure 1: 50 year old male with acute longus colli calcific tendinitis. Lateral radiograph of cervical spine shows increased prevertebral soft tissue thickness (arrow)

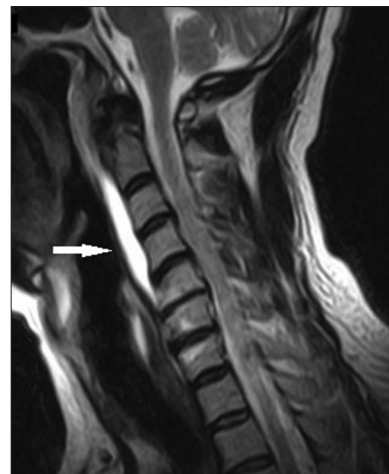


Figure 2: A 50-year-old male with acute longus colli calcific tendinitis. Sagittal T2 of cervical spine showing retropharyngeal effusion (arrow) from C1 to C4 levels

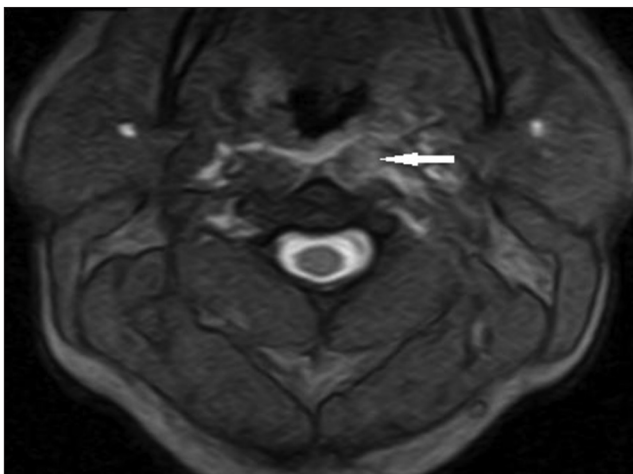


Figure 3: Axial MEDIC sequence at C1 level showing hyperintense signal in left side longus colli muscle

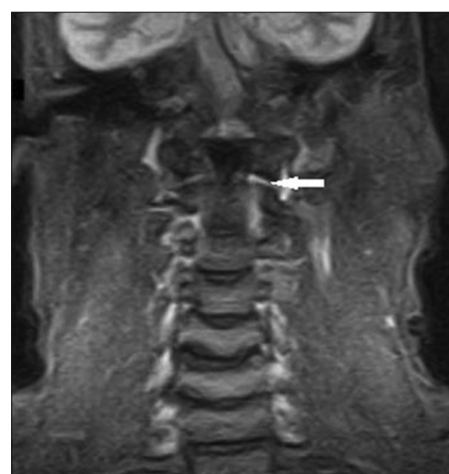


Figure 4: Coronal short tau inversion recovery (STIR) of cervical spine showing effusion (arrow) in left lateral atlantoaxial joint



Figure 5: A 50-year-old male with acute longus colli calcific tendinitis. Axial CT of neck at level of C1-2 showing calcifications (arrow) anterior to C1-2

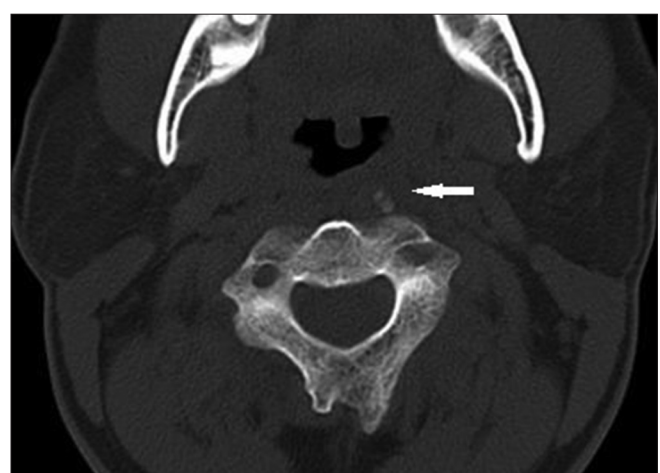


Figure 6: 50 year old male with acute longus colli calcific tendinitis. Axial CT of neck at level of C1-2 showing calcifications (arrow) anterior to C1-2



Figure 7: Follow up plain lateral radiograph of cervical spine showing decreased thickness of prevertebral soft tissue

The longus colli muscle consists of superior (upper oblique), central (vertical), and inferior (lower oblique) fibers.^[12] The superior fibers attach the anterior tubercle of the atlas to the anterior tubercles of the transverse processes of C3–C5 vertebrae; the inferior fibers connect the bodies of T1–T3 vertebrae to the anterior tubercles of the transverse processes of C5–C6 vertebrae; the central fibers attach the bodies of C2–C4 vertebrae to the remaining cervical and upper three thoracic vertebrae. It is the superior tendon fibers of the longus colli muscle that are affected in acute calcific tendinitis.^[13]

Neck pain could be caused by various conditions like retropharyngeal abscess, infective spondylodiscitis, cervical spine trauma, degenerative disc disease, meningitis. CT and MRI are helpful in differentiating these conditions.

This condition affects adults within a reported age range of 21 to 81 years although most patients are between 30 and 60 year age.^[14] Clinically patients may present with neck pain, dysphagia, odynophagia, low grade fever, elevated white cell count, and limited range of motion. The disease may occur in association with collagen vascular disease, renal failure, and osteoarthritis.^[15]

Lateral radiograph of cervical spine may show calcifications anterior to C2. CT is more sensitive than plain radiograph to detect calcifications.^[16] CT shows pathognomonic finding of calcifications in the longus colli muscle anterior to C2. C1-3 is the common site of calcification although cases have been described with calcifications anterior to C4-5^[17] and C5-6.^[18] MRI is less accurate compared to CT in detection of calcifications. MRI shows retropharyngeal effusion and signal abnormality in the longus colli muscle. Effusion in left lateral atlantoaxial joint was seen in our case which is an uncommon finding. It has been described in a case in which a patient showed in addition to classical findings, effusion in both lateral atlantoaxial joints.^[19] Retropharyngeal effusion must be differentiated from abscess.

Smooth expansion of retropharyngeal space by fluid, absence of enhancing wall in the periphery, lack of suppurative nodes, and presence of calcifications favor the diagnosis of longus colli calcific tendinitis.^[1]

Acute calcific tendinitis of longus colli is a benign condition and resolution of symptoms can be expected in 72 hours with anti-inflammatory medications.^[15]

Conclusion

Acute longus colli calcific tendinitis is a benign inflammatory condition associated with characteristic calcification anterior to C2. Recognition of the pathognomonic imaging finding is important to avoid unnecessary investigations and surgical intervention. Effusion in lateral atlantoaxial joint is an uncommon feature of this condition and was seen in our case.

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