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## Case Report

# Acute longus colli tendinitis: Case report of a rare cause of neck pain ☆

Benjamin Kessler, MD\*, Joana Diaz Leyva, MD, MPH, Chelsea Schmitt, MD, MPH, Ryan Murtagh, MD, MBA

University of South Florida Department of Radiology, 2 Tampa General Circle, STC 6102, Tampa, FL 33606, USA

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## ABSTRACT

Longus colli tendonitis is an uncommon aseptic inflammatory condition that affects the prevertebral longus colli tendon, which is a muscle that courses anteriorly from the level of the C1 to T3 vertebrae (1,2). Although longus colli tendonitis is a self-limited condition, the longus colli muscle is anterior to the prevertebral space and posterior to the pharyngeal constrictors, therefore when inflamed, leads to a myriad of symptoms that often mimic more serious conditions such as retropharyngeal abscess or meningitis (2). We present a case of a 39-year-old white male that presented with neck pain, neck stiffness, and pain with swallowing. Imaging findings on CT and MRI were consistent with a diagnosis of longus colli tendonitis. However, given the patient's presenting symptoms and elevated inflammatory lab markers, he was treated empirically with antibiotic therapy. This case report aims to educate on this condition and to discuss the diagnostic imaging findings to help avoid unnecessary treatments and interventions.

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## Introduction

Longus colli tendonitis (LCT) is an uncommon, self-limiting cause of neck pain and odynophagia. This relatively rare entity is often ignored or incorrectly diagnosed, resulting in unnecessary interventions and treatments, which include unnecessary antibiotic therapy and specialty consults. This likely is related to the differential diagnosis of this disorder, which includes life-threatening processes, such as retropharyngeal abscess and meningitis. Therefore, it is important to be able to accurately identify this benign condition. Our case presents

a 39-year-old male patient that presented with symptoms of neck stiffness and odynophagia with imaging and, although alarming presenting symptoms, clinical findings consistent with longus colli tendonitis. His case, imaging findings, unnecessary therapies, and proper management are discussed.

## Case Report

A 39-year-old male with past medical history of anabolic steroid use, intranasal cocaine use, and a stable arachnoid cyst

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\* Corresponding author.

E-mail address: [bkessler@usf.edu](mailto:bkessler@usf.edu) (B. Kessler).

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presented with 4-day history of severe neck pain, stiffness, and odynophagia. His symptoms started with sharp localized left posterior shoulder pain with onset after going to the gym. In the subsequent days the pain began spread up the left posterior neck and over to the right shoulder. He describes the pain as feeling "deep" in his neck. The pain causes him to avoid turning his head to either side or extending his neck due to pain. At time of presentation he pulls forward on his baseball cap to manually lift his head off the bed in order to sit up. He has also felt increasing odynophagia and pain with speech. This patient also has long standing tinnitus in the right ear which has worsened during the duration of these symptoms.

Upon presentation, laboratory results revealed CBC, procalcitonin, and CMP that were within normal limits. However, inflammatory markers were mildly elevated and MRSA swab was positive. Blood cultures were obtained at admission and the patient would remain afebrile through the entirety of the admission. Given the patient's symptoms and elevated inflammatory markers, an MRI of the cervical spine was ordered.

MRI of the cervical spine revealed fluid signal anterior to the longus colli muscle extending from C1-C5 with mild associated increased T2 signal within the left longus colli muscle. Following these imaging results, further evaluation with a CT cervical spine was recommended.

At this time the patient was started on IV Flagyl and Rocephin as empiric treatment for retropharyngeal abscess. He was also given Decadron 10 mg IV due to concern for longus colli tendonitis. Several hours after initial treatment was started, odynophagia was significantly improved, and patient tolerated a regular diet.

CT of the cervical spine was performed the following day and demonstrated small amorphous calcifications within the longus colli tendon, which supported the diagnosis of longus colli tendinitis. No evidence of abscess was demonstrated on the CT.

Following discussion of risks and benefits with discharging physician, the patient preferred to proceed to continue treatment for possible infection with oral sulfamethoxazole/trimethoprim and amoxicillin/clavulanic acid given the positive MRSA swab. However, the blood cultures obtained at presentation and prior to antibiotic therapy, finalized as no growth to date. The patient was discharged with a methylprednisolone dose pack per ENT recommendations. At discharge, his symptoms were resolving, and patient had outpatient ENT follow-up scheduled.

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## Discussion

The longus colli muscle is located anterior to the vertebral column extending from C1 to T3 [1]. The longus colli muscle runs posterior to the pharyngeal constrictors and forms the anterior boundary of the prevertebral space [2]. It functions as a weak flexor of the neck [3]. It is composed of 3 groups of fibers, upper oblique, vertical, and lower oblique [1]. The fibers most

often involved in longus colli tendinitis (LCT) are the upper oblique fibers at the level of C1-C2 although the lower oblique fibers have been implicated as well [4,5].

LCT is also commonly referred to as retropharyngeal or acute calcific prevertebral tendinitis [1]. LCT is a self-limited, aseptic tendinitis of the longus colli tendon caused by inflammatory response secondary to deposition of calcium hydroxyapatite crystals [6]. Fluid formation within and around the longus colli muscle may be secondary to rupture of these calcium hydroxyapatite crystals [4]. The predisposing factor leading to this deposition is not precisely known, however it has been proposed that deposition may be related to ischemia, necrosis, or trauma causing local or systemic metabolic derangements [4]. Others propose there may be a relationship between LCT and osteoarthritis, collagen vascular disorders, or renal failure [6].

The most common symptoms include neck pain, limited neck movement due to pain and swallowing complaints including dysphagia and odynophagia [4]. Less common symptoms include pain radiating to the upper back, shoulder or arm; headache; dizziness; nausea and torticollis [4].

Imaging characteristics that favor a diagnosis of LCT include amorphous calcifications and edema within the anterior C1-T3 soft tissue. The calcifications may vary considerably from subtle to quite obvious [3]. CT imaging is the modality of choice as it has greater sensitivity than either radiograph or MRI for detecting small amorphous calcifications [3].

Longus colli tendinitis (LCT) is a relatively rare entity, measured at 1.1 per 1000 examinations in one study [7]. It is often ignored or incorrectly diagnosed resulting in unnecessary interventions. This clinical entity is important to recognize in order to avoid lengthy, invasive workups for infection or neoplasm.

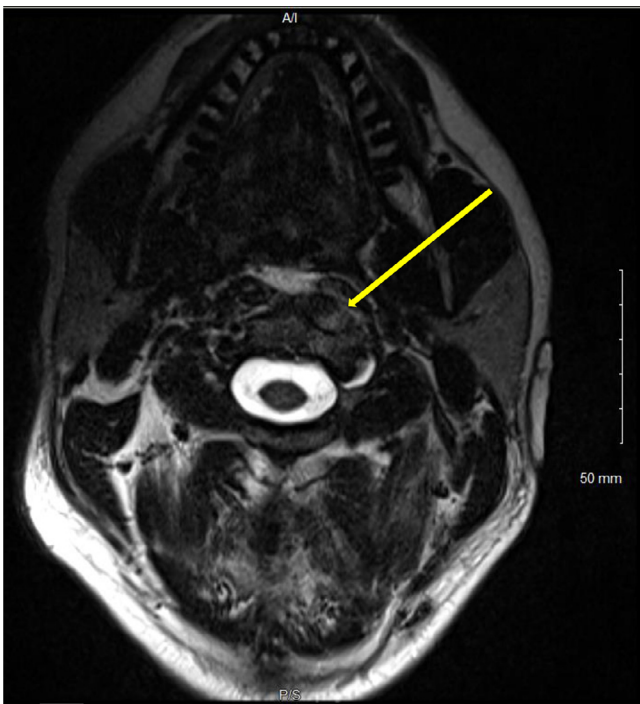
The differential diagnosis in this case included retropharyngeal abscess prior to obtaining the CT of the cervical spine. A diagnosis of retropharyngeal abscess may necessitate incision and drainage and a lengthy course of antibiotics. The imaging finding of edema on MRI within the longus colli muscle suggested the possibility of longus colli tendinitis, which led to the further imaging with CT. LCT can mimic some life-threatening processes, such as retropharyngeal abscess and meningitis. It is pivotal to be aware of and recognize this self-limited entity to avoid misdiagnosis and unnecessary intervention. Familiarity with this diagnosis is also important from an antibiotic stewardship standpoint, as lack of experience with this uncommon diagnosis may lead to over-prescription of antibiotics. Key features that may lead you to think of more ominous pathologies include enhancement around the effusion, inflammatory retropharyngeal lymph nodes, or destructive changes to adjacent vertebrae [3]. Any of these features may suggest more serious pathology that necessitates further intervention. Rather than invasive procedures, LCT responds to NSAID therapy or in more severe cases corticosteroids or opioids [1]. Eventually the calcium hydroxyapatite crystals are resorbed, their borders becoming radiographically less well-defined, and symptoms typically resolve within 48 hours to 2 weeks [1,4,6].



– Sagittal MRI STIR demonstrates a retropharyngeal and prevertebral fluid collection that extends from the C1-C2 level inferiorly to the C5 vertebral body.



– CT of the cervical spine presented in bone windows demonstrates characteristic small amorphous calcifications at the C2 level within the longus colli tendon, suggesting acute calcific longus colli tendinitis.



– Axial T2 images of the cervical spine demonstrates subtle increased T2 signal within the left longus colli muscle consistent with edema. Low T2 signal medial to the inflamed longus colli represents tendon calcifications.



– CT of the cervical spine presented in soft tissue windows demonstrates characteristic small amorphous calcifications at the C2 level within the longus colli tendon, suggesting acute calcific longus colli tendinitis.

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