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Acute Non-calcific Tendonitis of the Longus Colli: An Uncommon and Underrecognized Cause of Neck Pain.

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Case Report

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Abstract

Introduction: Acute non-traumatic neck pain is a highly prevalent condition with diverse and multifaceted etiologies. Longus colli calcific tendinitis is an uncommon yet important cause of acute inflammatory neck pain in middle-aged adults.

Case report: A 51-year-old female presented with a 3-day history of acute neck pain, which showed poor response to oral medication. The patient was admitted with acute neck pain and showed an inadequate response to initial symptomatic treatment with nonsteroidal anti-inflammatory drugs (NSAIDs). Following repeated intermittent glucocorticoid therapy, the patient's pain was found to be exquisitely responsive to steroids. Upon careful review and discussion of the Magnetic Resonance Imaging (MRI) scans, a prevertebral fluid collection was identified that had been initially overlooked. No significant prevertebral calcification was detected on cervical computed tomography(CT), and the final diagnosis was non-calcific tendinitis of the longus colli muscle. The patient improved significantly following continuous corticosteroid therapy and was discharged.

Conclusion: Acute non-calcific tendinitis of the longus colli is an extremely rare cause of acute neck pain, and is highly prone to being missed or misdiagnosed, particularly in patients presenting with isolated neck pain without odynophagia. In patients with acute severe neck pain, MRI evaluation is essential, requiring careful evaluation of not only intraspinal pathologies but also the thickness and signal intensity of the prevertebral fascia.

Introduction

Acute calcific tendonitis of the longus colli(ACTLC) is a self-limiting disorder characterized by acute-onset neck pain, odynophagia, and limited cervical mobility. It results from inflammatory activation triggered by localized calcium deposition within the longus colli tendon, and serves as an uncommon yet clinically important etiology of acute neck pain[1]. This condition is easily overlooked in day-to-day practice due to its rarity and underrecognition by clinicians. The presence of odynophagia should raise suspicion for this condition rather than other more common entities. We report a case of isolated, refractory neck pain that responded to corticosteroid therapy, with the final diagnosis being acute non-calcific longus colli tendinitis.

Case report

A 51-year-old female presented with a 3-day history of abrupt onset of sharp posterior cervical neck pain. She presented to our outpatient clinic and was started on oral loxoprofen, which failed to provide adequate relief; she was ultimately admitted for ongoing neck pain. Physical examination was notable for mildly restricted cervical range of motion and tenderness localized to the trapezius region. She had an mildly increased White Blood Cell count and mild elevation of the C-reactive protein level. Cervical

spine MRI revealed mild degenerative changes. An initial diagnosis of acute neck pain was made. Treatment included Glycerol Fructose infusion, oral Loxoprofen and Myonal, and microwave physiotherapy. After three days, the patient continued to report persistent neck pain with no significant improvement, particularly upon waking in the morning. A single 5 mg dose of intravenous dexamethasone was added, which brought significant but short-lived relief of the neck pain. Two days later, the patient again complained of significant neck pain and was administered an additional dose of dexamethasone. Two days later, she again reported neck pain without significant improvement from admission, other than transient relief following steroids and expressed dissatisfaction. After detailed evaluation and discussion of MRI findings, fluid exudation and prevertebral edema were identified at the C2-C4 levels (Fig1). Further history taking revealed transient morning pharyngeal pain, without significant odynophagia. Acute calcific tendinitis was suspected; however, a subsequent cervical CT demonstrated no evidence of calcification (Fig2). We established a diagnosis of acute non-calcific tendinitis of longus colli and initiated the patient on IV methylprednisolone 40 mg daily. Following three consecutive days of hormone therapy, the patient reported significant improvement in neck pain, with repeat cervical spine MRI demonstrating marked resolution of prevertebral edema (Fig3); the patient was thus discharged. After discharge, continue oral prednisone 5 mg twice daily (BID), with gradual dose tapering until discontinuation. One week after discharge, the patient's neck pain resolved completely. At the 3-month final follow-up, no recurrence of neck pain was reported.

Disscussion

Acute calcific tendinitis of the longus colli, also known as acute calcific prevertebral tendinitis and retropharyngeal calcific tendinitis, has an incidence of approximately 0.5 per 100,000[2] population and a detection rate of 1.1 per 1,000[3] patients on cervical CT. ACTLC is an inflammatory disorder resulting from focal calcium hydroxyapatite deposition within the tendon of the longus colli muscle. It constitutes a rare but clinically significant cause of acute neck pain and acute dysphagia.

In 1964, Hartley[4] first documented the association between prevertebral calcifications and acute neck pain. In 1994, Ring et al.[5] performed a biopsy on a patient with ACTLC and confirmed a foreign body inflammatory immune reaction secondary to calcium hydroxyapatite crystal deposition in the superior oblique tendon fibers of the longus colli muscle. Since then, an increasing number of relevant clinical reports have been published. The condition primarily affects adults aged 30 ~ 60 years, with no significant gender predilection. In 2010, Park et al.[6] conducted a literature review and summarized the clinical characteristics of 71 patients diagnosed with ACTLC. The most common symptoms included neck pain (94%), limited cervical spine motion (45%), odynophagia (45%), neck stiffness (42%), dysphagia (27%), sore throat (17%), and neck muscle spasm (11%). Neck pain arises primarily from the local inflammatory response within the longus colli muscle, whereas dysphagia may be secondary to retropharyngeal effusion and stenosis of the pharyngeal constrictors and proximal esophagus. In our

case, the patient presented with isolated neck pain and restricted cervical spine motion, without associated dysphagia, likely attributable to mild prevertebral and retropharyngeal effusion. This constitutes an important cause of early misdiagnosis. And we suggest that acute odynophagia may constitute a key clue to the early diagnosis of ACTLC.

The presence of prevertebral calcification on cervical CT, especially at the atlantoaxial joint level, is the primary diagnostic criterion for ACTLC[7]. In our case, however, no obvious calcification of the longus colli muscle was identified on cervical CT. Very few reports concerning non-calcific longus colli tendinitis exist in the literature. In 2012, Paik et al.[7] described 9 cases of longus colli tendinitis, with 3 cases demonstrating no radiographic evidence of calcification. In 2018, Nakagami et al.[8] reported a case of non-calcific longus colli tendinitis, noting that MRI provides significant diagnostic value in non-calcified cases. Calcific tendinitis of the longus colli is mainly attributed to local deposition of hydroxyapatite crystals, whereas the pathogenesis of non-calcific tendinitis of the longus colli remains poorly understood in the literature. Similarly, among the cases of calcific and non-calcific shoulder tendinitis, researchers have proposed that non-calcific shoulder tendinitis lacks a distinct mineralization phase and typically is a chronic, persistent condition[9].

Acute calcific tendinitis of the longus colli is diagnosed primarily based on neck pain, odynophagia, and radiographic calcification. Prevertebral edema and effusion of the cervical spine demonstrated on MRI is the primary diagnostic criteria for non-calcific tendonitis of the longus colli. However, prevertebral effusions of the cervcal spine may also be observed in entities including retropharyngeal abscess and osteomyelitis, which represent the key differential diagnoses. Retropharyngeal abscess is an infectious disease that occurs predominantly in children, manifesting with severe systemic toxic symptoms and representing an otolaryngologic emergency. Patient age, clinical course (including a history of upper respiratory tract infection), laryngoscopic features, and treatment response are helpful in establishing a differential diagnosis. ACTLC is a self-limiting condition and follows a benign clinical course. Treatments included cervical immobilization, NSAIDs, as well as corticosteroids in severe cases. In our case, the patient demonstrated a poor response to NSAIDs but exhibited marked sensitivity to glucocorticoids, which is a characteristic feature of tendinitis.

Acute non-calcific tendinitis of the longus colli muscle is a rare etiology of acute neck pain that can be readily misdiagnosed and underdiagnosed, especially in atypical presentations. Prevertebral edema and fluid collection detected on cervical MRI are the key diagnostic criteria. Patients with minimal prevertebral or retropharyngeal fluid can be associated with the absence of odynophagia, which may leads to misdiagnosis and underdiagnosis among both radiologists and clinicians. As a benign, self-limiting condition, longus colli tendinitis responds well to conservative management. Heightened clinical vigilance and timely intervention effectively relieve symptoms and prevent unwarranted diagnostic testing.

Declarations

Ethics approval and consent to participate

The need for ethic approval is not subject to the institutional review board (local ethics committee) due to simple case reporting. Written informed consent was obtained from the patient to report and publish individual patient data.

Consent for publication

Written informed consent was obtained from the patient for publication of this case report and any accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal.

Availability of data and materials

Not applicable as this is a case report.

Competing interests

The authors declare that they have no competing interests.

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Clinical trial number

Not applicable

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Figures

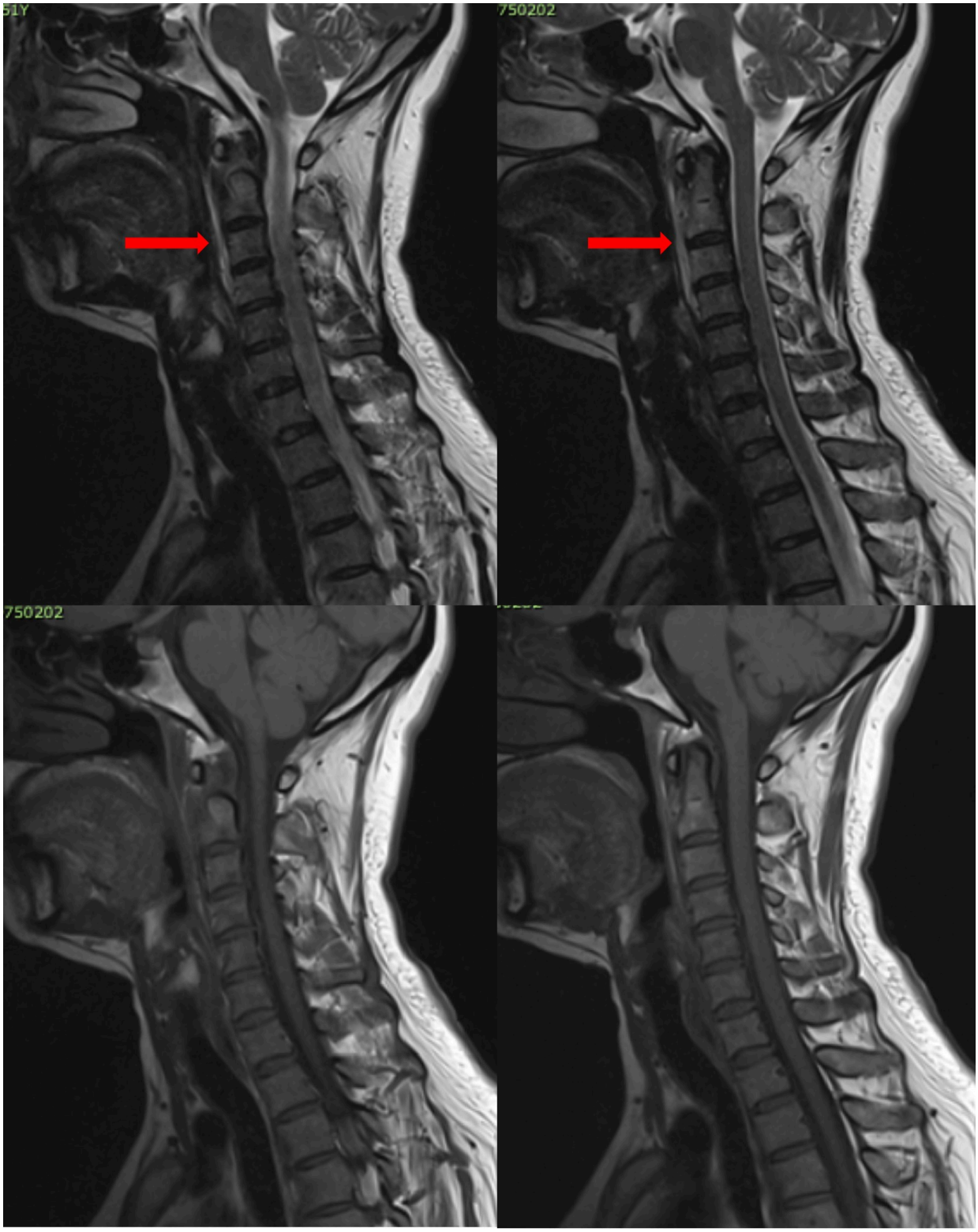


Figure 1

Cervical spine sagittal MRI (February 1st) demonstrates cervical spondylosis. T2-weighted images reveal prevertebral edema at the C2-C4 levels (red arrow).

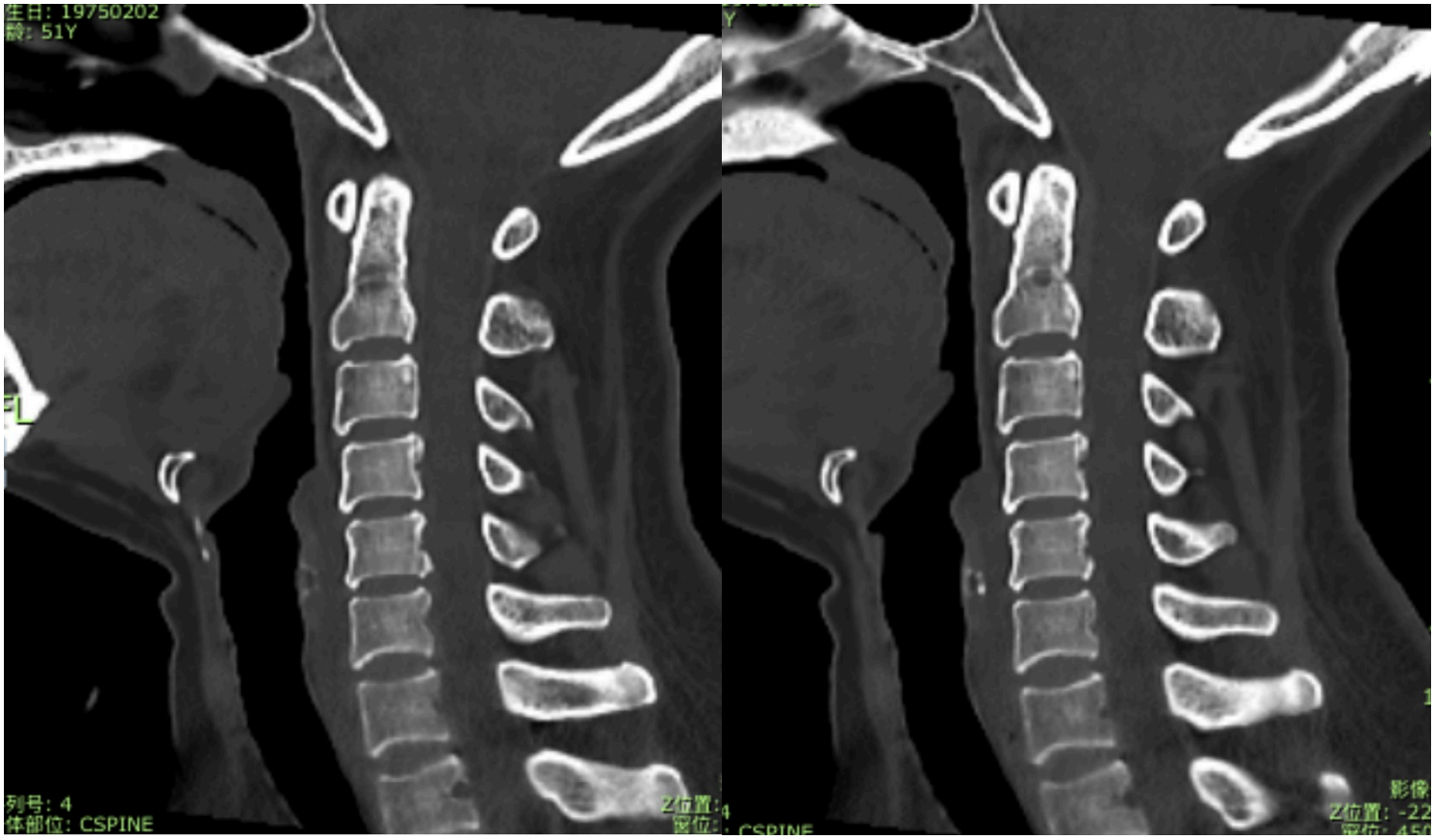


Figure 2

Cervical spine CT shows cervical spondylosis.

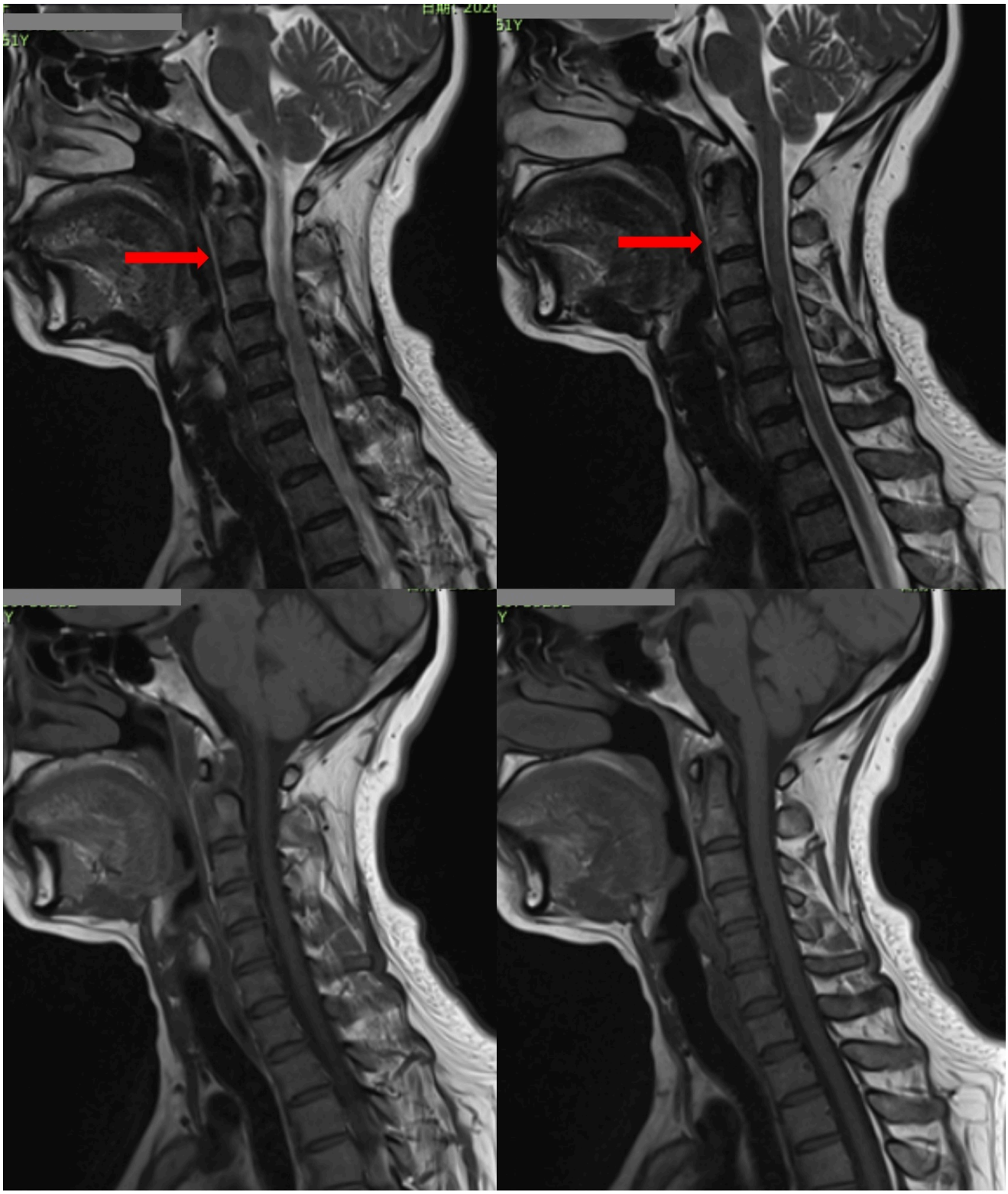


Figure 3

Cervical spine MRI (February 8st) demonstrates significant improvement of the prevertebral edema compared to the status pre-treatment.