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Cervical Fasciitis—An Unusual Cause of Neck Pain

Urgent message: Though neck pain is a common complaint among patients presenting to urgent care centers, cervical fasciitis is a relatively uncommon cause. Nonetheless, urgent care providers should consider it in the differential diagnosis for patients presenting with neck pain, even those who are afebrile.

MARK RICHMAN, MD, MPH; BRENDAN APPOLD, MS; AND JENNIE SONIEGA-SHERWOOD, MPH

Case Presentation

The patient is a 62-year-old-female with no significant past medical history who presented to a hospital-based urgent care center complaining of 1 week of worsening sharp, right-sided, nonradiating neck pain uncontrolled with acetaminophen or nonsteroidal antiinflammatory medications (NSAIDs). She described 2 days of subjective fevers and limited range of motion due to pain. She also reported occasional left-hand tingling. She denied neck trauma, heavy lifting, neck or spinal procedures or manipulations, steroid or intravenous drug abuse (IVDA), weight loss, rash, headache, neck rigidity, or photophobia. Her son had active tuberculosis (TB).

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Physical examination

The patient's initial vital signs were unremarkable. Physical examination was notable for pain with palpation of the right-sided neck muscles and 4/5 strength in the right triceps and biceps.

Differential diagnosis and approach to evaluation

Causes of neck pain range from benign (eg, muscle strain) to life-threatening (eg, cervical spine fracture, epidural abscess). Although the vast majority are not serious,[1] distinguishing between these entities is critical. Our patient denied trauma, so fracture was unlikely. Subjective fevers, objective weakness, and limited range of motion raised concern for an inflammatory (eg, rheumatologic, infectious) or malignant cause of the patient's symptoms.

As her son had active TB, osteomyelitis was a possibility; epidural abscess was less likely, as she denied IVDA or spinal procedures.

Muscle strain, ligament sprain, or fibromyalgia were also not likely, given subjective fevers, objective weakness, and no history of trauma or heavy lifting.

The patient's neck was not deviated in one direction,

Mark Richman, MD, MPH practices in the Department of Emergency Medicine at Northwell Health Long Island Jewish Medical Center. **Brendan Appold, MS** is Visiting Scholar at Northwell Health Feinstein Institute for Medical Research. **Jennie Soniega-Sherwood, MPH** is a Graduate Teaching Assistant at California State University, Northridge. The authors have no relevant financial relationships with any commercial interests. Dr. Richman has equity interest in Synova Life Sciences, Inc., and the CME Program has determined there is no conflict of interest.

decreasing the likelihood of dystonia or torticollis.

Female gender, older age, and absence of lower back pain were not consistent with ankylosing spondylitis, which usually presents as low back pain affecting young men and can be identified through plain-film lumbar spine x-ray showing "bamboo" spine or sacroiliac joint sclerosis.

"Cervical fasciitis may be caused by rheumatologic conditions or bacterial (including mycobacteria) or fungal infections."

Without numbness or tingling in a dermatomal distribution, radiculopathy (such as due to osteophytes or disc herniation) was improbable; had that been suspected, outpatient nerve conduction studies would have been recommended.

The patient did not endorse odynophagia, had no stridor or lymphadenopathy, and had an unremarkable oropharyngeal examination, making lymphoma or oropharyngeal infectious etiologies such as epiglottitis or a peritonsillar, retropharyngeal, or parapharyngeal abscess unlikely (concern for these would have prompted transfer to an emergency room for IV contrast-enhanced CT scan).

Without tachycardia, tremor, or anterior neck tenderness, there was no suspicion for thyroiditis.

While neck pain is occasionally a manifestation of cardiovascular disease, she lacked cardiovascular risk factors and denied chest pain, shortness of breath, nausea, sweating, or dizziness, so myocardial infarction was not pursued via ECG or troponin. Likewise, carotid artery dissection was low on the differential diagnosis, as she had no vision loss, aphasia, or significant upper or lower extremity weakness; patients with such symptoms can be transferred to an ED for CT or MR angiography or Doppler ultrasound.

Though not necessary in most cases of neck pain, in this case bloodwork and a plain-film x-ray were performed to evaluate for infectious, rheumatologic, or malignant conditions, as this patient had subjective fevers and focal neurologic weakness without a viable alternative explanation for these symptoms.

Diagnostic Tests (Back to the Case)

Laboratory tests

Serum WBC was 11.3.

X-ray

A cervical-spine x-ray showed reversal of normal cervical spine lordosis, moderate severe, multilevel degenerative changes with narrow intervertebral discs, and neural foraminal encroachment by posterior osteophytes. There were no osteolytic lesions or bony erosions.

The patient's subjective fevers, elevated serum WBC, contact with active TB, and decreased right arm strength prompted admission to the hospital (where the urgent care resided) for an MRI to evaluate for osteomyelitis. A reasonable alternative would have been referral to an ED (or direct admission) for an MRI, even without prior bloodwork or plain film x-ray.

Magnetic resonance imaging

The MRI showed abnormal marrow edema, left C3-C4 facet joint enhancement with joint space fluid, adjacent left paravertebral enhancement, abnormal C1-C2 prevertebral soft tissue thickening with edema and enhancement in the longus colli muscles, and left paravertebral and prevertebral phlegmon.

This constellation of findings was worrisome for infectious fasciitis involving the left C3-C4 facet joint.

Diagnosis, Treatment, and Discharge

The patient was admitted to the Internal Medicine service. She received vancomycin and ceftriaxone until blood cultures returned negative. ESR was 66 and CRP 218. ANA, RF, anti-CCP were all negative; QuantiFERON-TB Gold and PPD tests were positive; chest x-ray was unremarkable. She underwent a CT-guided facet joint space drainage and biopsy; crystal examination, AFB smear, and bacterial cultures which were negative.

There were no predisposing factors indicating septic fasciitis. As such, this patient was diagnosed with cervical fasciitis most likely due to inflammatory (noninfectious) osteoarthritis.

Physical therapy resulted in significant improvement in the patient's pain and range of motion. She was set up for outpatient physical and occupational therapy for strength training and range-of-motion exercises before being discharged.

Discussion

Cervical fasciitis (inflammation of the cervical vertebrae facet joint) may be caused by rheumatologic conditions such as inflammatory osteoarthritis, or bacterial (including mycobacteria) or fungal infections.

Cervical fasciitis is an unusual cause of neck pain typically caused by either bacterial infection (*S aureus*, streptococcal species, mycobacterium tuberculosis) [3] or a rheumatologic condition, including osteoarthritis. Fasciitis should be considered if a patient presents with fever, elevated serum WBC, or persistent marked pain or limitation in neck range-of-motion despite pain medications.

"Without appropriate treatment, infection can [lead to] abscess formation, spinal cord/nerve root impingement, and sepsis."

Epidemiology

Facet joint septic arthritis is a rare source of neck pain that can cause significant morbidity due to local or systemic spread. Patients are typically between the ages of 55 to 59 years and approximately 90% of cases involve the lumbar spine.[4] Septic arthritis is most commonly secondary to a bacterial infection, arising from hematogenous spread, adjacent infections, and iatrogenic causes such as corticosteroid injection and epidural catheterization. Patients at increased risk include the elderly and immunosuppressed, such as those on chemotherapy or chronic steroids, or with diabetes mellitus or AIDS, as well as those with rheumatoid arthritis, skin infection, IV drug abuse, and/or previous joint issues.

Osteoarthritis of the spine involves the facet joints and is widely prevalent in older adults. Facet joint osteoarthritis is frequently associated with degenerative disc disease, but the two are distinct conditions. Prevalence is nearly 20% for adults aged 45 to 64, and nearly 60% for adults over the age of 65. While age is a strong risk factor of cervical osteoarthritis, the association with increased BMI is small, and there seems to be no gender association; occupational factors have not been examined.[5]

Conventional radiography (x-rays) are frequently negative for soft tissue mass, but can be helpful if positive.[2] They are most helpful when looking for unsuspected/forgotten metal, or for calcifications.

The imaging test of choice is the MRI scan, which did confirm the diagnosis in this case.

Management

Facet joint septic arthritis: Patients are treated with long-term (at least 6 weeks) parenteral antibiotics followed by oral antibiotics, or a combination of percutaneous drainage and long-term antibiotics. While there is often a delay in diagnosis, the majority of patients fully recover or experience mild residual pain/neurologic sequelae. Complications include chronic pain, joint/bony destruction, pyomyositis, abscess (epidural, psoas muscle, and paraspinal), neurologic sequelae (paresthesias, weakness), spondylodiscitis, endocarditis, meningitis, septic emboli, and, rarely, death. Open arthrotomy and surgical drainage/debridement are typically reserved for the patient with infection refractory to antibiotics or with acute neurological compromise. MRI is less helpful in assessing for treatment response, as soft tissue enhancement can persist following clearance of infection. Treatment response can be assessed using the patient's subjective improvement in symptoms and improvement in serum inflammatory markers.

In *osteoarthritis of the spine*, radiofrequency denervation is the standard treatment for facet joint pain, with some benefit for up to 1 year in approximately 60% of individuals. Medial branch blocks can serve a prognostic role to select patients who are likely to be responsive. Trials of intraarticular steroid injections for lumbar and cervical facet joint pain have yielded disappointing results, but a subpopulation of patients with acute inflammation derives intermediate-term benefit. While no studies have evaluated noninterventional treatments specifically for facetogenic pain, studies in nonspecific back pain suggest a modest, short-term beneficial effect for pharmacotherapy.[5]

Implications for Urgent Care Providers

Urgent care physicians should consider cervical fasciitis in the differential diagnosis for neck pain, even if the patient is afebrile. Clinical features that should prompt further investigation include fever, elevated serum WBC, or persistent marked pain or limitation in neck range-of-motion despite medications. In infectious facet arthritis, without appropriate diagnosis and treatment, infection can spread to adjacent structures, resulting in abscess formation, spinal cord/nerve root impingement, and sepsis. ■

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