

Cervical Pott's Disease Presenting as a Retropharyngeal Abscess

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Retropharyngeal abscess is usually pyogenic; it may exist alone or with cervical osteomyelitis. The disease may be acute or it may develop insidiously with torticollis, dysphagia and respiratory obstruction. Rarely, *Mycobacterium tuberculosis* may be the etiologic pathogen of this disease.

Tuberculosis of the spine (Pott's disease) has a predilection for the middle and lower thoracic spine. It usually involves the vertebral body, but in about 10% of patients the neural arch, transverse process, or spinous process may be affected. Infection may spread from a vertebral body posteriorly into the spinal canal and cause neurologic deficits. Tuberculous epidural abscess may cause neurologic deficits without any evidence of bony involvement [1]. Cervical tuberculous vertebral osteomyelitis is unusual. Tuberculosis affects the cervical vertebrae in approximately 0.03% of all cases [2]. Craniovertebral junction tuberculosis occurs in 0.3–1% of patients with tuberculous spondylitis [3].

We report an unusual case of cervical Pott's disease of C2 vertebra and tubercular epidural abscess at this level, which presented as retropharyngeal abscess.

Patient Description

A 60 year old woman suffered right neck pain for 2 months. She was treated with non-steroidal anti-inflammatory drugs but without improvement. She presented in the emergency room 10 days after the appearance of dysphagia, hoarseness and aggravation of the neck pain. Her physical examination was normal except for pain

and sensitivity of the left neck and hyper-reflexia of the lower limbs.

Her routine blood tests were normal. Computerized tomography of the neck demonstrated retropharyngeal abscess with epidural extension to C2 level and a bone-destroying lesion of C2 vertebra [Figure A].

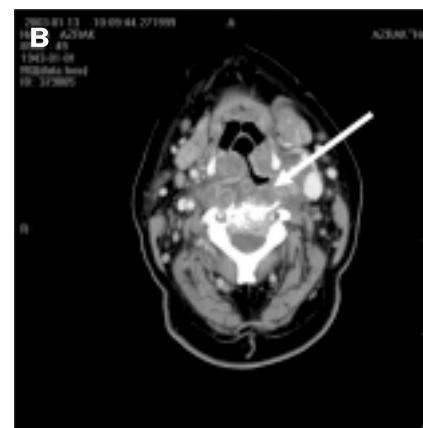
The patient was operated for incision and drainage of the retropharyngeal abscess and the exudate was sent for bacteriologic cultures [Figure B]. Following the procedure, antibiotic treatment with amoxicillin+clavulonate was administered intravenously. The cultures from pus and blood were negative. However, the patient continued to be febrile, despite the drainage and antibiotic therapy. Six days following surgery, magnetic resonance imaging of the neck demonstrated vertebral osteomyelitis of C2 and anterior epidural abscess at this level without compression of the spinal cord [Figures C and D]. One week later, due to continuing fever, amoxicillin+clavulonate was replaced

with ceftriaxone and metronidazole but this change did not elicit any improvement either. The failure of conventional antibiotic treatment and a highly positive (30 mm) PPD test strongly suggested *Mycobacterium tuberculosis* to be the etiologic pathogen. Antituberculosis treatment with rifampin, isoniazid (INH), pyrazinamide and ethambutol was initiated.

Acid-fast bacilli were demonstrated in the gastric fluids but not in the abscess aspirate (the abscess aspirate was examined for acid-fast only 10 days after the aspiration itself). *M. tuberculosis* grew in the abscess aspirate 6 weeks later. The patient was treated with antituberculosis drug therapy for 9 months, during which she was asymptomatic, afebrile and with no neurologic deficits. The follow-up included a physician check-up every 3 months. A cervical MRI after 4 months of treatment demonstrated radiographic improvement of C2 osteomyelitis with complete resolution of the epidural abscess and retropharyngeal abscess [Figures E and F].



[A] CT of neck demonstrates retropharyngeal abscess with epidural extension to C2 level and bone-destroying lesion of C2 vertebra.



[B] CT of neck post-incision and drainage of the retropharyngeal abscess.



[C] T1 weighted cervical MRI shows vertebral osteomyelitis of C2 and anterior epidural abscess at this level without compression of spinal cord.



[D] T2 weighted cervical MRI demonstrates vertebral osteomyelitis of C2 and anterior epidural abscess at this level without compression of spinal cord.



[E] T1 weighted cervical MRI, 4 months after antituberculosis drug therapy, shows an impressive radiographic improvement of C2 osteomyelitis with complete resolution of the anterior epidural abscess at this level.



[F] T2 weighted cervical MRI, 4 months after antituberculosis drug therapy, shows an impressive radiographic improvement of C2 osteomyelitis with complete resolution of the anterior epidural abscess at this level.

Comment

Retropharyngeal abscess in adults is usually caused by direct invasion of pyogenic pathogens into the retropharyngeal space by trauma to the pharynx or esophagus (usually from a foreign body, traumatic endoscopy, or esophageal intubation). After a retropharyngeal infection is established, cervical osteomyelitis with associated epidural abscess and spinal cord compression may develop as a secondary event. However, a retropharyngeal abscess may also evolve from a preexisting cervical osteomyelitis. In these cases, *Mycobacterium tuberculosis* is not an unusual cause, especially in endemic areas [1].

When diagnosing retropharyngeal abscess, it is important for clinical management to determine whether it is a result of a pharyngeal infection or a result of spread

from a posterior infection, e.g., cervical osteomyelitis. Treatment of a retropharyngeal abscess should be directed toward establishing an airway, draining the abscess, administering appropriate antibiotics, draining any intraspinal infection (usually an anterior epidural abscess) and, if necessary, stabilizing any osteomyelitic cervical vertebra [1,4,5].

Cervical tuberculous vertebral osteomyelitis is very unusual. Symptoms on presentation may vary considerably, and include fever, weight loss, night sweats, neck pain, and stiffness of neck. Patients may have no neurologic deficits or they may present with radiculopathy, myelopathy or even quadriplegia. CT and MRI are the most useful imaging modalities [2].

It is well accepted that if the spine is stable and there are no neurologic deficits,

or minimal neurologic signs as in our case, antituberculosis drug therapy and conservative neck stabilization should be the initial treatment. If neurologic signs are prominent on patient admission or develop later, or if there is cervical instability or a significant degree of subluxation, then surgical debridement and stabilization are indicated [1,3]. Although anterior operations and neural decompression may be associated with impressive neurologic recovery, it should be remembered that approximately 85% of patients with Pott's paraplegia make excellent recoveries with antituberculosis drug therapy alone [1]. It was according to this rationale that we treated our patient. The patient wore a Philadelphia cervical collar for 6 months, and clinical and radiographic improvements were achieved with antituberculosis drug therapy without surgery.

Neurosurgeons who treat spinal tuberculous osteomyelitis should understand that antituberculosis drug therapy, not surgery, is the crucial factor in the treatment of this disease. Clinicians must remember that retropharyngeal abscess may be the presenting sign of cervical Pott's disease. Despite its rarity, this entity should be considered in order to ensure appropriate diagnosis and treatment.

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