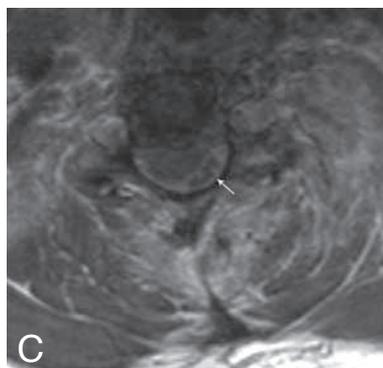
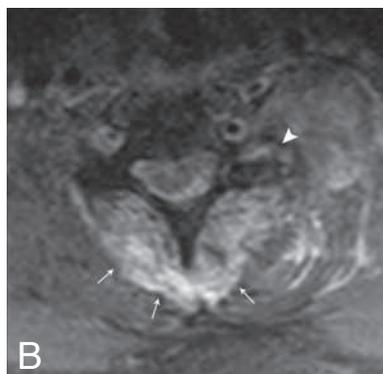
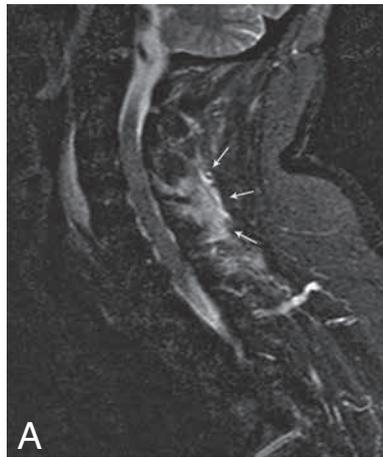


IMAGES IN CLINICAL RADIOLOGY



Progressive quadriplegia resulting from septic facet joint arthritis

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A 70-year-old male patient presents with pain in the face and neck, persisting for one week. For one day he has also noted muscular weakness in the left arm. The patient presents with fever of unknown origin and remembers being scratched by a cat some days before. The diagnosis of a cerebral vascular incident was initially withheld and a CT-scan of the brain was performed. This showed no abnormalities. The pain gradually became even more excruciating and an MRI of the cervical spine was performed to exclude spondylodiscitis. Since it was impossible for the patient to lie still, the exam had to be aborted. A contrast-enhanced CT-scan of the cervical spine was performed instead, which could not rule out spondylodiscitis. The patient was started on intravenous antibiotics. Over the following hours the patient progressively developed quadriplegia. MRI of the cervical spine was attempted again, this time with moderate success. On the fat-saturated sagittal T2 image (Fig. A) we can see a fluid-infiltration in the posterior soft tissues of the neck (arrows). A slight heterogeneous signal of the medulla may well indicate edema. On the fat-saturated axial T1 image after administration of contrast (Fig. B) we can see enhancement of the posterior musculature (arrows), as well as the left facet joint C5-C6 (arrowhead). On the non fat-saturated contrast-enhanced axial T1 image (Fig. C) we can see an enhancing epidural collection on the left posterior side of the spinal canal (arrow), causing a shift of the medulla. The patient was rushed to the OR for decompressive laminectomy. *Streptococcus mitis* was cultivated from samples of the collection, the antibiotic therapy was then changed to clindamycine. During the following months progressive recuperation of function was observed, with a persistent deficit in motor function in the left arm.

Comment

Septic facet joint arthritis is a suppurative bacterial infection of a facet joint and the adjacent soft tissues. It remains an uncommon but probably underestimated entity, we estimate 79 cases have been reported. The infection is most often caused by hematogenous spreading, but can also be caused by direct inoculation (such as surgery or infiltration procedures) and can even extend from an adjacent infection in the soft tissues. The highest incidence rate is found on the lumbar level where the infection is even known to spread from an accompanying appendicitis or diverticulitis. It occurs typically in the 6th-7th decade of life, predisposing factors are IV drug use, immunocompromised state and diabetes, cirrhosis, chronic kidney failure and other chronic illnesses. Septic facet joint arthritis can be associated with spondylodiscitis and formation of epidural abscesses, which can give rise to cord compression and/or foraminal narrowing. Also paravertebral abscesses may be seen, this however does not indicate a worse prognosis. Treatment relies primarily on the use of intravenous antibiotics, but percutaneous drainage may be indicated. Decompressive laminectomy is

generally indicated when an epidural abscess and neurological deficits are present. MRI is the imaging method of choice. Abnormal enhancement can be seen within the facet joint and the adjacent bone marrow as well as edema in the adjacent soft tissues. This occurs typically on a single level and unilaterally, with widening of the facet joint in question and erosion of the cortex. Sagittal STIR or FSE T2 sequences with fat saturation are most sensitive for bone marrow edema and epidural involvement. An axial T1 weighted sequence after administration of contrast with fat saturation is better suited to delineate the extent of involvement of the infection and to exclude epidural and paraspinal abscesses.

Reference

1. Muffoletto A.J., Ketonen L.M., Mader J.T., Crow W.N., Hadjipavlou A.G.: Hematogenous pyogenic facet joint infection. *Spine*, 2001, 26 (14): 1570-1576.

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