Spinal epidural abscess case reports

2023

A 19-year-old woman, with progressive dull aching low back pain of a duration of one month presented. Examination revealed, no knee or ankle reflexes and an MRC power of 0/5 across bilateral ankle and knee joints. The bilateral lower limb's pain, touch, and temperature all received a score of 0/2 on the sensory grading scale. An x-ray revealed radio-opacity at the 9th and 10th thoracic vertebra. The diagnosis of Pott's spine having a likely tubercular abscess was made after an MRI revealed a heterogeneously enhancing collection at T9-T10 communicating with the posterior epidural space. During surgery, an isolated epidural mass with no apparent bony extension was present. The diagnosis was changed to EES based on the results of the histopathology and CD 99 immunohistochemistry tests. Chemotherapy was started. Following up with the patient two months later revealed that her power and sensation in both lower limbs had improved.

Clinical discussion: Usually, children and young adults are affected by Ewing's sarcoma. Due to the rarity of extradural thoracic Ewing sarcoma, its exact prevalence is unknown, Most EES have early distant metastases to the lungs and bones and are rapidly growing. It exhibits the compressive myelopathy symptom. It is challenging to distinguish EES from other spinal tumors and from the TB spine because no specific radiologic patterns for intra-spinal EES and PNETs have been described. Due to its rarity, the spinal epidural treatment protocol is not well established. However, the reported cases show that excision and combined radiotherapy have promising outcome.

Epidural Ewing’s sarcoma should be one of the differentials even in the region with a high prevalence of Potts's spine in young patients presenting with back pain and myelopathy-like symptoms. Ewing sarcoma treatment plans are subject to significant, even month-to-month, changes [1)].

2022

A 54-year-old man with a past medical history significant for sciatica, as well as multiple orthopedic surgeries with hardware, was transferred from an outside rural facility for further workup of a two-month history of progressive back pain and muscle weakness. Investigations ultimately revealed abnormal enhancement from T11 to sacrum, with a large epidural abscess from L5 to the sacrum, best visualized on an MRI. Following the MRI confirmation of loculated complex thoracolumbar abscess, neurosurgery performed a left L3-S1 unilateral laminotomy and evacuation of compressive multiloculated epidural abscesses. The patient was then treated with empirical antimicrobial coverage for epidural abscess with vancomycin and ceftriaxone, which was narrowed to cefazolin based on positive methicillin-susceptible Staphylococcus aureus (MSSA) wound cultures obtained in the operating room. The patient completed a total six-week course of antibiotic therapy. Apart from some superficial wound dehiscence postoperative, the patient ultimately recovered well and had a resolution of most presenting symptoms [2)].

Spinal epidural abscess (SEA) caused by Escherichia coli is an uncommon condition. It usually occurs secondary to urinary tract infection (UTI), following hematogenous propagation. Disruption of spinal

anatomic barriers increases susceptibility to SEA. Although rarely, such disruption can take the form of lumbar spine stress fractures, which can result from even innocuous activity. Shin et al. described a case of SEA secondary to UTI in a patient with pre-existing stress fractures of the lumbar spine, following use of an automated massage chair. Successful treatment of SEA consisted of surgical debridement and a six-month course of antibiotic therapy [3)]

2020

A 78-year-old man developed a methicillin-sensitive Staphylococcus aureus (MSSA) post-operative wound infection following an elective L2-L4 laminectomy. He was treated with surgical debridement which was to be followed by a planned 6 weeks course of cefazolin. However, two weeks post debridement, a follow-up MRI revealed an L3-L5 epidural abscess, septic arthritis and vertebral osteomyelitis prompting repeat surgical debridement. No purulence was noted, and operative cultures were negative for growth. His hospital course was complicated by acute kidney injury and a renal biopsy revealed crescentic glomerulonephritis consistent with post-infectious glomerulonephritis. He was treated with daptomycin, followed by oral linezolid. Five months after his original laminectomy, he developed purulent drainage from his back wound. Blood cultures grew MSSA and a repeat aspirate did by interventional radiology also grew MSSA. He improved with nafcillin and was transitioned to telavancin on discharge to facilitate once-daily treatment. While on telavancin he developed increasing back pain and fever. Therefore, the regimen was changed to IV cefazolin and oral probenecid for five weeks followed by oral cephalexin to complete a total of 12 weeks of therapy. There is no evidence of disease recurrence one year after the completion of therapy. IV cefazolin with oral probenecid may represent a once-daily IV treatment option for patients with methicillin-sensitive Staphylococcus aureus bacteremia and kidney disease [4)].

A 63-year-old man complained of a 2-month history of severe pain in the back and both legs, radiating down to the ankle, similar to sciatica with a past-history of L2-S1 decompression and fusion seven years ago. Imaging revealed an irregular mass in the epidural space and around the internal fixation surgical site, which was initially diagnosed as an epidural infectious abscess. Most of the lesion was completely excised and a detailed immuno-histopathological analysis was performed revealing the diagnosis of a Diffuse large B-cell lymphoma (DLBCL). After surgery and chemotherapy, he was discharged without complications. Unfortunately, he was died 2 years later due to brain metastasis.

This case highlights the need to consider malignancy in the differential diagnosis, and carefully examine surgical specimens in revision surgery. Further understanding of the role of metal implants in the development of lymphoma is required [5)]

An 81-year-old man presented with fever, back pain, and progressive muscle weakness in bilateral legs. Magnetic resonance imaging (MRI) showed extensive fluid retention in the spinal epidural space (Th6 to L3). Paraplegia due to an epidural abscess was suspected. They considered an emergency operation; however, the patient's general condition was poor. Therefore, fluoroscopy-guided percutaneous epidural drainage was performed. After drainage, his back pain and muscle weakness gradually resolved. After 3 weeks, MRI showed that the abscesses had completely disappeared.

Compared with surgical drainage, fluoroscopy-guided percutaneous epidural drainage is a less invasive treatment option for patients with a poor general condition [6].

A 44 years old Caucasian man with chronic low back pain, treated with physiotherapy and anti-inflammatory drugs. Following an episode of acute severe exacerbation of pain, the patient underwent four sessions of dorsal and lumbosacral area mesotherapy. One month after the last session, the patient experienced acute severe lumbar pain, radiated to the left lower limb and accompanied by fever and vomiting. During hospitalization, elevated levels of white blood cells and C Reactive Protein (CRP) were found. Moreover, vertebral magnetic resonance imaging revealed the presence of an intramedullary lesion. Furthermore, methicillin-sensitive staphylococcus aureus was isolated from three blood cultures and antibiotic therapy was performed. In this case the patient had the typical SEA onset, without any specific risk factors excepting the execution of four sessions of mesotherapy. The aim of this study is to explain risk factors for SEA development and to clarify how to act as a preventive measure because also acupuncture can promote bacterial infection [7].

A 52-year-old female with a 2-month history of back pain diagnosed with septic arthritis of the left lumbar L4/5 facet joint and associated epidural abscess. She presented with no fevers, normal neurological examination and normal blood parameters posing a diagnostic challenge. In this report, they conclude normal inflammatory markers cannot be used as exclusion criteria for the disease. They also review the body of literature to summarise the key features of the condition to assist clinicians in its diagnosis [8].

2019

Pyogenic facet joint infection is a rare but severe infection. The most common complaint on presentation is pain followed by fever, then neurologic impairment. While the lumbar spine is involved in the vast majority of cases presented in the literature, the case presented here occurred in the thoracic spine. The patient was a 48-year-old immune-competent female who presented with left back pain. Magnetic resonance imaging (MRI) indicated a facet effusion, paraspinal abscess, and epidural abscess in the level of 9th-11th thoracic vertebra. On the 6th day of treatment, she presented a neurological disorder and underwent decompressive laminectomy and surgical debridement. We observed immediate improvement as a result of the surgery [9].

A case of a young patient with Crohn´s disease (CD) and history of relapsing perianal disease followed by a complication of SEA in the thoracic spine. In close cooperation with the orthopedists and the neurologists, the gastroenterologists have successfully treated the SEA in this patient, allowing her to return back to biological treatment for CD [10].

A 59-year-old female with a history of diabetes and hypertension, presented with the acute onset of a high-grade fever, generalized back pain, and an evolving quadriparesis. Preliminary laboratory studies revealed elevated inflammatory markers. The magnetic resonance scan showed a ventral epidural

abscess extending from C1-2 to the L5 level. She underwent urgent surgical decompression using a Nelaton catheter placed through an L4-L5 hemilaminectomy and threaded cephalad (40 cm); this resulted in a complete recovery.

This case study underscores a unique way of managing an anterior holospinal SEA extending from the C1-2 through the L5 spinal levels [11].

2016

Spinal Epidural Abscess with Pregnancy Leading to Paraplegia [12].

Septic arthritis of a lumbar facet joint with epidural and paraspinal abscess: Report of a case [13].

A case of tubercular spinal epidural abscess (SEA) without osseous involvement that mimicked an acute bacterial abscess. This case manifested quite unusual findings not only radiographically, but also clinically compared with previously reported cases of tubercular SEA [14].

A case of a 57-year-old transgender male who presented with lower back pain for a period of one month following a fall. Physical examination only revealed tenderness over the lower back with no neurological deficits. MRI of the thoracic and lumbar spine revealed a spondylodiscitis at T10-T11 and T12-L1 and right posterior epidural collection at the T9-T10 level. He underwent decompression laminectomy with segmental instrumentation and fusion of T8 to L3 vertebrae. Intraoperatively, he was found to have acute-on-chronic osteomyelitis in T10 and T11, epidural abscess, and discitis in T12-L1. Tissue and wound culture grew Salmonella Typhi and with antibiotics susceptibility guidance he was treated with intravenous ceftriaxone for a period of six weeks. He recovered well with no neurological deficits [15].

2015

A 57-year-old man presented with lower back pain, which progressed to include urinary retention and evidence of lumbar discitis/osteomyelitis on magnetic resonance imaging. The patient was started on antibiotic therapy. After the patient developed new cervical pain, interval magnetic resonance imaging showed extension of the abscess to involve the cervical, thoracic, and lumbar spine with intraventricular extension. The decision was made to perform a C4 corpectomy and insert a flexible ventriculoperitoneal catheter to serially flush out the abscess. Omnipaque dye was then used to ensure that the entire abscess was evacuated and no septations existed in the anterior epidural space.

The patient's neurological deficits completely resolved, and he is intact a year after the operation. In selected patients with pan-spinal epidural abscesses associated with acute neurological deficits, a combination of an open approach and a catheter-based procedure in addition to an intraoperative

monitoring option to ensure complete evacuation of the abscess and absence of septations in the anterior epidural space is a low-morbidity option in the armamentarium of the surgeon [16].

In a report of 2 patients, the authors present, which they call “apical laminectomies” to allow for irrigation and drainage of an extensive SEA spanning the entire length of the vertebral column (C1-2 to L5-S1). Two patients presented with cervico-thoraco-lumbar SEA. Laminectomies were performed at the natural apices of the spine, namely, at the midcervical, midthoracic, and midlumbar spine levels. Next, a pediatric feeding tube was inserted in the epidural space from the thoracic laminectomies up toward the cervical laminectomy site and down toward the lumbar laminectomy site, and saline antibiotics were used to irrigate the SEA. Both patients underwent this procedure with no adverse effects. Their SEAs resolved both clinically and radiologically. Neither patient suffered from mechanical instability at 1 year after treatment. For patients who present with extensive SEAs, apical laminectomies seem to allow for surgical cure of the infectious burden and do not subject the patient to extended operating room time, an increased risk of blood loss, and the risk of mechanical instability [17].

2014

Actinomyces species may lead to slowly progressive infection of almost any site once mucosal breakdown exists; hence, it has the name “great pretender.” Its diagnosis may be unthinkable unless proper cultures/histologies are taken. We describe a patient with lumbar spondylodiscitis and epidural abscess. This is an exceptional another disease by actinomycosis [18].

A case of a 30-month-old girl with a history of remitting varicella infection, diagnosed for a lumbar epidural abscess and sacro-ileitis, secondary to group A Streptococcus (GAS).

This is the third case of SEA from GAS reported in the literature in a pediatric population with varicella infection [19].

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