Methicillin resistant Staphylococcus aureus epidural spinal abscess

Available published studies demonstrate a clinically important burden of surgical site infections (SSIs) related to spine operations and the substantial contribution of S. aureus (including MRSA). Preventive strategies aimed specifically at S. aureus SSIs could reduce health care costs and improve patient outcomes for spine operations [1].

Methicillin resistant Staphylococcus aureus (MRSA) spinal epidural abscess was successfully treated with combination therapy consisting of high-dose daptomycin (DAP, 10 mg/kg) and rifampicin. The patient's condition was complicated with multiple infectious foci, including an iliopsoas abscess and epidural abscess, as well as discitis and spondylitis at the cervical, thoracic and lumbar levels. Monotherapy treatments with vancomycin, linezolid and usual-dose DAP were all ineffective. It has been shown that usual-dose DAP administration may result in the emergence of a resistant strain and treatment failure. We would like to emphasize the importance of high-dose DAP therapy for MRSA bacteremia, a condition with a potentially high mortality rate [2].

A MRSA epidural abscess in a 48-year-old woman was successfully treated with ceftaroline fosamil 600 mg every 12 hours as salvage therapy [3].

2011

A 70-year-old Japanese man developed fever, headache, and lumbago, presumably due to an epidural abscess caused by methicillin-resistant Staphylococcus aureus (MRSA) in the L5-S2 region. On the night of admission to our hospital, he showed disorientation to places and abnormal eating behavior, indicating a complication of MRSA meningitis. Cerebrospinal fluid (CSF) examination confirmed this diagnosis. Although he was treated with venous infusion of vancomycin and meropenem, the CSF culture remained positive for MRSA even a week after the treatment, and Gram-positive cocci were also seen in the CSF. An intrathecal injection of vancomycin (10mg/day) was subsequently added, which resulted in absence of the organism on Gram-stained CSF smear and CSF culture a week later. His condition improved without any adverse effects. Vancomycin cannot freely penetrate the blood-brain barrier (BBB); therefore, when administered intravenously, its concentration in the CSF is insufficient. Therefore, intrathecal injection of vancomycin is necessary to achieve the desired bacteriocidal level in the CSF. Thus, intrathecal administration of vancomycin seems a very effective and safe treatment for MRSA meningitis [4].

2010

A 28-year-old man was admitted with severe thoracic pain, a body temperature of 37.20, paraplegia and sphincter disturbances. MRI revealed an epidural abscess T5T8. A decompressive laminectomy T5T8 was performed and the abscess was removed. A methicillin-resistent Staphylococcus aureus was cultured. Vancomycin was administered. Six months later muscle testing showed values from 3/5 to 4/5. MRI is the first choice diagnostic tool. Laminectomy, drainage and intravenous antibiotics constitute the basic treatment. Antibiotics alone can be sufficient in case of whole spine involvement, lumbosacral localization without neurological symptoms, fixed neurological deficit, complete paralysis

for more than 72 hours, or severe concomitant medical problems [5].

1)

Patel H, Khoury H, Girgenti D, Welner S, Yu H. Burden of Surgical Site Infections Associated with Select Spine Operations and Involvement of Staphylococcus aureus. Surg Infect (Larchmt). 2017 May/Jun;18(4):461-473. doi: 10.1089/sur.2016.186. Epub 2016 Nov 30. PubMed PMID: 27901415; PubMed Central PMCID: PMC5466015.

2)

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3)

Bucheit J, Collins R, Joshi P. Methicillin-resistant Staphylococcus aureus epidural abscess treated with ceftaroline fosamil salvage therapy. Am J Health Syst Pharm. 2014 Jan 15;71(2):110-3. doi: 10.2146/ajhp130246. PubMed PMID: 24375602.

4)

Goto K, Ohi T, Namba A, Uemura N, Kitaguchi H. [Successful treatment of methicillin-resistant staphylococcus aureus meningitis by intrathecal injection of vancomycin]. Brain Nerve. 2011 Apr;63(4):417-21. Japanese. PubMed PMID: 21441646.

5)

Shaoqi H, Lixing L, Chengxuan T, Guojing Y. Epidural abscess T5T8 due to methicillin-resistent staphylococcus aureus in an immunocompetent patient. Acta Orthop Belg. 2010 Oct;76(5):706-8. PubMed PMID: 21138231.