Spinal infection

- Comparative analysis of two newly established Cre rat lines, NeuN-Cre and Thy1-Cre, for neurological research
- Laminectomy with fusion for cervical spondylotic myelopathy is associated with higher early morbidity and risk of perioperative complications compared with laminectomy alone: a retrospective study in the United States
- Clinical outcomes of posterior cervical fusion in the setting of increasing age and medical complexity: an American national database analysis from 2012 to 2022
- Ravulizumab is Effective and Safe for Neuromyelitis Optica Spectrum Disorder Patients in Various Clinical Settings: A Single-Center Case Series with Concomitant Use of Rituximab
- An Elderly Patient With Lumbar Spondylodiscitis and Psoas Abscess: Diagnostic Considerations in the Context of Aerococcus urinae
- Draft genome of Staphylococcus epidermidis clinical isolate OGSA-Sep-145 from an implant-related spinal infection
- Case 342
- A 62-Year-Old Male Patient With Spinal Lesions Following Fingolimod Discontinuation in the Setting of Disseminated Shingles

Epidemiology

Surgical site infections are the second most common health care-associated infection in the United States, representing 22% of all such infections [1].

In spine surgery, the incidence of postoperative wound infection is 0.7 to 16% [2) 3)].

The mean age at presentation was 57.1 ± 13.5 years [4].

Classification

see Spinal infection classification.

Etiology

Spinal infections can be described aetiologically as pyogenic, granulomatous (tuberculous, brucellar, fungal) and parasitic.

Pyogenic spinal infections include: spondylodiscitis, a term encompassing vertebral osteomyelitis, spondylitis and discitis, which are considered different manifestations of the same pathological process; spinal epidural abscess, which can be primary or secondary to spondylodiscitis; and facet joint arthropathy [5].

Risk factors

Spinal infection risk factors

Diagnosis

Physical examination

Findings that suggest this as a possibility (but are also common in patients without infection)

Fever: common in spinal epidural abscess and vertebral osteomyelitis, less common in discitis

Vertebral tenderness

Very limited range of spinal motion.

Spinal epidural abscess diagnosis

see Spinal epidural abscess diagnosis.

Treatment

see Spinal infection treatment.

Delphi consensus studies

The de novo non-specific spinal infection managements (spondylodiscitis - SD) remains inconsistent due to varying clinical practices and a lack of high-level evidence, particularly regarding the indications for surgery.

Research question: This study aimed to develop consensus recommendations for spondylodiscitis diagnosis and spondylodiscitis management, addressing diagnostic modalities, surgical indications, and spondylodiscitis treatment strategies.

A Delphi process was conducted with 26 experts from the European Association of Neurosurgical Societies (EANS). Sixtytwo statements were developed on diagnostic workup, management decisions, surgical techniques, non-surgical treatment, and follow-up and submitted to the panel of experts.

Consensus was reached on 38 of 62 statements. MRI was confirmed as the gold standard for diagnosis. Regarding surgical indications, the panel agreed that any new neurological deficit, even subtle, warrants surgical consideration. Motor deficits with a motor score (MRC) below 4 and bladder or bowel dysfunction were unanimously considered clear indications for surgery. For spinal deformity and instability, thresholds such as kyphosis >20°, scoliosis >10°, and vertebral body collapse >50%

were established to guide surgical decision-making. Minimally invasive surgery (MIS) was endorsed whenever feasible, and a 12 week antibiotic treatment regimen was favored in cases of complicated infections.

This EANS consensus provides updated recommendations for spondylodiscitis management, incorporating recent evidence on improved outcomes with surgical therapy. While these guidelines offer a more structured approach to clinical decision-making, further research is required to optimize surgical timing and validate the long-term impact of these treatment strategies [6].

Case series

An observational, prospective study was conducted of the rates of surgical wound infection among patients admitted for more than 48 h to the Neurosurgery Department of Ramon y Cajal University Hospital , Madrid , Spain (a tertiary-level university hospital) between July 2011 and December 2014.

The study surveyed a total of 536 surgical procedures performed in 521 patients. The rate of diagnosed surgical site infection (SSI) was 4.85% (26 infections), below the established acceptable threshold of 5%. Of these, 65.38% were organ-space infections, 30.77% deep infections, and 7.69% superficial infections. Infection rates for each type of surgical procedure were 4.35% for spinal fusion, 0.00% for refusion of spine, 2.08% for laminectomy, 5.95% for ventricular shunt, and 5.14% for craniotomy. Antibiotic prophylaxis was evaluated as suitable in 80.22% of surgical procedures.

Infection rates were lower when the surgery was elective, clean, the patient had a lower ASA, and when suitable antimicrobial prophylaxis was administered. The rate of suitable antimicrobial prophylaxis shows that there is room for improvement. In order to minimize the risk of surgical wound infection, all professionals involved in patient care need to know and apply current recommendations, especially those relating to proper hand hygiene and suitable antibiotic prophylaxis [7].

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