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A 5-year analysis of spinal infections at a neurosurgical department in New Zealand

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Introduction: A spinal infection is defined as an infectious disease that affects the vertebral body, intervertebral disk or adjacent paraspinal tissue. The main routes of infection include hematogenous spread, direct inoculation into the region by procedures and direct extension from adjacent infected tissue. A native/de novo infection is one that occurs without any prior intervention to the natural human body. Considered uncommon in developed countries, its incidence is on the rise.

Methods: This retrospective analysis was conducted at the Neurosurgical Department in Waikato Hospital, New Zealand. The inclusion criteria included all spinal patients admitted under our department from January 2013 to January 2018. This information was extracted from the hospital's online patient registry. Statistical analysis was performed using data obtained from clinical notes, discharge summaries, operation reports and imaging reports. 554 patients who had in total 604 procedures were analyzed.

Results: 27 patients were treated for spinal infections of which 15 were male and 12 female. 20 were post-operative, 7 were native. The mean age was 58.4 years. Of the patients with a recorded smoking status during admission, 71% were smokers. Diabetes was the most common co-morbidity, present in 1/3 of these patients. 56% of the infections were deep to the fascia. 85% were treated with a washout and antibiotics, 15% with antibiotics alone. The length of inpatient stay for patients with spinal infections ranged from 4-48 days with a mean length of 16.3 days compared to 5.3 days for the other spinal patients. For the post-operative infections, the duration between initial surgery and date of recognized infection was 13.6 days. Some of the findings of our 5-year retrospective analysis correlate with international data: Mean age of infection 58.4 years. Basel et al. (2008) showed greatest prevalence to be around ages 50-70 and Hlavin et al. (1990) showed peak incidence around 6th and 7th decades of life. Mean WCC for the 27 patients was 11.6. Davis et al. (2004) showed only 60% of patients with spinal infections had leucocytosis on presentation. Staphylococcus aureus was isolated in 55% of our patients with spinal infections. Worldwide, it is the most common responsible microorganism present in about 63% of cases.

Conclusion: The risk of a post-op spinal infection is about 3.3%. Patients who develop spinal infections have a 3x longer inpatient stay, predisposing them to further illness associated with hospital admission. The WCC is not a reliable marker of spinal infection. Native infections provoke a more aggressive immune response and have a worse prognosis than post-op infections.

Biography

R D Biju is currently working as a Surgeon at Waikato Hospital in New Zealand. He has published numerous research papers and articles in reputed journals and has various other achievements in the related studies. He has extended his valuable service towards the scientific community with his extensive research work.

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