

## Integrated Approach for Management of Spondylodiscitis: Surgical and Medical Approach

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### ABSTRACT

**Introduction:** Spinal infections, constituting a small percentage of musculoskeletal infections, often necessitate surgical intervention combined with antimicrobial therapy in advanced stages for effective management and improved patient outcomes. The study aimed to share experiences in managing severe and complicated spondylodiscitis (SD) using a combined approach of antibiotics and surgery and offer recommendations to improve care for challenging SD cases.

**Methods:** The study took place at J P Orthocare Hospital, Ahmedabad, Gujarat, India, focusing on SD patients admitted within a year. It included 21 patients undergoing SD surgery, where experienced spine surgeons performed debridement, histopathological examinations, and culture tests. Antibiotic treatments were based on culture reports and infection specialist recommendations. Neurological status, fusion status, graft position, and instrumentation alignment were monitored using standardized assessments and SPSS 20.0 for statistical analysis ( $p < 0.05$ ). **Result:** The study revealed a male predominance (6:1 ratio) among patients, primarily from Ahmedabad district, with lumbosacral vertebral involvement being most common, particularly at L4-S5 (28.57%). Mycobacterium tuberculosis (Rifampin sensitive) was the most prevalent pathogen, followed by Methicillin-resistant Staphylococcus aureus (MRSA) and Pseudomonas. Transformational lumbar interbody fusion with bone graft was the most frequent procedure (28.58%), with patients typically discharged after 72 hours post-surgery after culture and sensitivity report obtained and starting antibiotic after consulting infection specialist. **Conclusions:** The combined surgical and medical treatment of severe SD enables effective debridement, rapid inflammation resolution, early mobilization, and shorter antibiotic courses. Both tuberculous and pyogenic SD showed improvement. A holistic strategy for multimorbid patients, addressing perioperative health concerns and ensuring extended follow-up, improves management results and patient welfare.

**Keywords:** Spondylodiscitis, Antibiotics, Lumbar Interbody Fusion, Tuberculosis, Surgery