Spondylodiscitis Case Series

A retrospective analysis included data of 218 patients who underwent surgical treatment for pyogenic spondylodiscitis between 2008 and 2016. Groups were divided into Length of stay (LOS) >21 days (Group I =<21 days, Group II > 21days). Analysis included patient age, gender, Charlson Comorbidity Index, smoking, obesity, osteoporosis, colonization with multidrug-resistant bacteria, preoperative neurological deficit, pre- und postoperative inflammation markers (CRP and WBC), duration of surgery, number of operated segments, vertebrectomy, postoperative medical and surgical complications. The case value for each patient expressed in Euro was retrieved from hospital records and included in the analysis.

Duration of stay after surgical treatment of spondylodiscitis was =<21 days (4 to 21, mean 16 days) in 41% and > 21 days (22 to 162, mean 41 days) in 59% of the patients. Multivariate analysis showed that both medical complications (OR 2.62, 95% CI 1.24-5.56, p=0.012) and surgical site infection (OR 6.04, 95% CI 2.35-15.51, p<0.001) were independently associated with a long hospital stay. Case values averaged at 21,667 ± 1,579 Euro (min: 2,888 and max: 203,802 Euro) and correlated significantly with the length of hospital stay (Pearson correlation coefficient 0.681, p<0.05). The occurrence of a postoperative complication increased the cost of care significantly from 17,790 to 24,527 Euro on average (p=0.025).

This study provides benchmark data for patients treated surgically for spondylodiscitis. Surgical site infection and medical complications are the main drivers of prolonged hospital stays and cost of care [1)].

2016

Between 2006 and 2013, a total of 211 patients suffering from spondylodiscitis underwent surgical debridement and instrumentation. There were 52 cases where PEEK cages were used. Laboratory and physical examinations were assessed at a 3-month follow-up. Last follow-up was performed with at a minimum of 12 months after surgery via a telephone interview.

Mean age at presentation was 67 years, with 19 (37 %) male patients and 33 (63 %) female. Distribution of the infection was lumbar in 29 (56 %%), thoracic in 3 (6 %) and cervical in 11 (21 %) cases. Nine patients (17 %) had concomitant non-contiguous spondylodiscitis.

Spinal epidural abscess was found in 17 patients (33 %); 48 (92) had pain; neurological deficits were found in 20 patients (38 %). All patients in this series underwent surgical debridement with instrumentation of the spine. Postoperative intravenous antibiotics were administered for 15.4 ± 6.8 days followed by 2.9 ± 0.5 months of oral antibiotics. Complete resolution of the infection was achieved in all cases. Of the 28 patients with neurological deficits, 6 had full recovery and 10 had improved incompletely after surgery. One patient suffered from a pulmonary embolism postoperatively. There were no mortalities.

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Use of PEEK cages for interbody fusion is feasible and safe in patients suffering from a pyogenic spinal infection [2)].

Eighty five patients with spondylodiscitis were surgically treated. The authors analysed clinical data and image studies for each patient.

They treated 51 male and 34 female patients with an average age of 48 years old (min: 6 - max: 80). The lumbar spine was more often affected and Mycobacterium tuberculosis the most frequent pathogen. The number of cases through the years has been grossly stable, with a slight increase of dyscitis due to Staphylococcus aureus and decrease of the dyscitis without pathogen identification. Paravertebral abscess was identified in 39 patients and 17 had also neurological impairment, mostly located in the thoracic spine and with tuberculous aetheology. Immunosuppression was documented in 10 patients.

In this epidemiologic study they found a tuberculous infection, male gender and young age predominance. Despite a relative constant number of patients operated over the years, pyogenic infections due to Staphylococcus aureus seems to be uprising. Paravertebral abscess and neurological impairment are important dyscitis complications, especially in tuberculous cases.

Spinal infections requiring surgical treatment are still an important clinical condition. Mycobacterium tuberculosis and Staphylococcus aureus represent the main pathogens with a growing incidence for the latest [3)].

2015

153 patients with spondylodiscitis treated from 2002 to 2012. The approach included MR imaging of the infected spine, isolation of the pathogen with blood cultures and/or biopsy, and further conservative or surgical treatment. The mean follow-up was 6 years (range 1-13 years). We evaluated the indications, timing (when), and methods (how) for surgical treatment, and the clinical outcome of these patients.

Orthopedic surgical treatment was necessary for 13 of the 153 patients (8.5 %). These were patients with low access to healthcare systems because of low socioeconomic status, third-country migrants, prisoners or intravenous drug use, patients in whom a bacterial isolate documentation was necessary, and patients with previous spinal operations. The most common pathogen was Mycobacterium tuberculosis. The surgical indications included deterioration of the neurological status (11 patients), need for bacterial isolate (10 patients), septicemia due to no response to antibiotics (five patients), and/or spinal instability (three patients). An anterior vertebral approach was more commonly used. Nine of the 13 patients had spinal instrumentation in the same setting. Improvement or recovery of the neurological status was observed postoperatively in all patients with preoperative neurological deficits. Postoperatively, two patients deceased from pulmonary infection and septicemia, and heart infarction. At the last follow-up, patients who were alive were asymptomatic; ten patients were neurologically intact, and one patient experienced paraparesis. Imaging showed spinal fusion, without evidence of recurrent spondylodiscitis. Complications related to the spinal instrumentation were not observed in the respective patients.

Conservative treatment is the standard for spondylodiscitis. Physicians should be alert for Mycobacterium tuberculosis spondylitis because of the low access to healthcare systems of patients with low social and economic status. Surgical indications include obtaining tissue sample for diagnosis, occurrence or progression of neurological symptoms, failure of conservative treatment, large anterior abscesses, and very extensive disease. Thorough debridement of infected tissue and

spinal stability is paramount. The anterior approach provides direct access and improved exposure to the most commonly affected part of the spine. Spinal instrumentation is generally recommended for optimum spinal stability and fusion, without any implant-related complications [4].

4350 procedures performed in 4037 patients (mean age=53.2 yr). Sixty percent of the patients were male. The majority of procedures were performed in the lumbar spine (98.4%), and the indication was mostly degenerative in nature (96.9%). The databases were then reviewed for any infectious complications.

Postoperative infection was recorded in 4 patients (0.09%). All of them occurred in the lumbar region after discectomy. These patients presented with discitis and underwent revision in the form of open debridement and fusion. The time lapse between the index surgery and revision was 56 days. All 4 patients recovered, with a mean follow-up of 7.5 years [5].

2014

Of 107 cases, ranging between 17 to 83 years of age, 64 (59.8%) were male. Twenty-seven (25.2%) patients had diabetes mellitus.

Laboratory investigations revealed elevated CRP in 70 (65%) patients, elevated ESR in 65 (61%) patients, and elevated white blood cell (WBC) counts in 41 (38.3%) patients. Thirty-six (33.6%) patients were identified as having brucellar SD, and 5 (4.7%) patients were identified as having tuberculous SD. A total of 66 (61.6%) patients were determined to have pyogenic SD. The most frequently isolated microorganism was Staphylococcus aureus. Antibiotic therapy was given intravenously to all pyogenic SD patients.

The incidence of SD has increased as a result of the higher life expectancy of older patients with chronic debilitating diseases and the increase of spinal surgical procedures. In patients with low back pain, SD should be considered as a diagnosis. For effective treatment, it is important to determine the etiology of the disease [6].

1)
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