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Which parameters other than and in addition to neurological status are relevant on surgical decision making in spinal tuberculosis?

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Introduction: Patients treated for spinal tuberculosis (TB) with chemotherapy alone may have an average increase of 15 degrees in deformity and 3% to 5% of these develop kyphosis greater than 60 degrees. Surgery has been advocated as the standard treatment in these patients, as well as in those with neurological loss. Objective: To analyze the impact of the parameters other than neurological status of the patients on surgical decision making in spinal TB. Methods: A retrospective analysis of a single center case series was performed, and a total of 99 patients with spinal TB, managed surgically (S) or non-surgically (NS) between 2006 and 2016, were analyzed. This patient series was not started for any research purposes and reflects the treatment preferences of the treating physician as well as the patients. Neurological status was set as dependent variable while the visual analog scale (VAS) score, contiguity and sagittal plane deformity were set as independent variables. A stepwise multivariate logistic regression method was used to evaluate the impact of clinical variables on S group. Results: Of the 99 patients (60F/39M) with a median age of 27 years; 83 (83.8%) were treated surgically and 16 (16.2%) were managed non-surgically. The median values for VAS score, number of vertebral involvements, erythrocyte sedimentation rate (ESR), and preoperative kyphotic angles were 9, 2, 56 and 30, respectively (Table 1A). Multivariate logistic regression test results showed that the probability of having a surgical intervention increases by 8.036 and 5.249 times for the patients with deformity and with contiguous disease, respectively ($p < 0.05$). Moreover, one-unit increment on VAS score increases the probability of having a spinal surgery by 1.371 times, as well ($p < 0.05$) (Table 1B). Conclusion: TB of the spine may result in sagittal plane deformity and most of the patients are suffering from significant amount of back pain because of the disease. In this study based on pure surgeon and patient preferences, the presence of kyphotic deformity, contiguity of the lesion and pain intensity (in addition to neurology) were shown to be relevant factors in making the decision for surgery.