

Original Article

## CIRCUMFERENTIAL DECOMPRESSION WITH POSTERIOR AND FUSION BY POSTERO-LATERAL APPROACH-EFFECTIVE SOLUTION IN SPINAL TUBERCULOSIS TREATMENT

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### Abstract

*The goal of this study is to assess the efficacy of one-stage surgical management for spinal tuberculosis by circumferential decompression with posterior instrumentation and fusion by postero-lateral transpedicular and costotransversectomy approaches. Between January 2009 and June 2010, 5 cases with spinal tuberculosis were treated with one-stage circumferential decompression with posterior instrumentation and fusion. All cases were followed-up for an average of 8.3 months (range 6-12 months). The average preoperative kyphosis was 26° (range 19-49°), and the average postoperative kyphosis was 13° (range 9-28°) at final follow-up. At final follow-up, minimal progression of kyphosis was seen, with an average kyphosis of 19° (range 13-30°). An average loss of correction of 6° was seen at final follow-up. The average neurological recovery in the patients was 0.83 grades on the Frankel scale. One-stage surgical management for spinal tuberculosis by circumferential decompression with posterior instrumentation and fusion was feasible and effective.*

**Keywords:** *spinal tuberculosis, circumferential decompression, fusion*

### Rezumat

*Scopul acestui studiu este analiza eficacității tratamentului chirurgical în primul stadiu al tuberculozei spinale, prin decompresiunea circumferențială, prin abord instrumental posterior și prin fuziune postero-laterală transpedicular și costotransversectomie. Din ianuarie 2009 până în iunie 2010, cinci cazuri cu tuberculoză spinală în primul stadiu au fost tratate cu abord instrumental posterior și fuziune. Preoperator, valoarea medie a cifozei a fost de 26 de grade (19-49), iar*

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*postoperator, de 19 grade (13-30), obținându-se o corecție de 6 grade. Recuperarea neurologică a fost de 0, 83 de grade pe scara Frankel. Pentru tuberculoza spinală de prim stadiu, decompresiunea circumferențială reprezintă o metodă fezabilă și eficientă.*

**Cuvinte-cheie:** tuberculoză spinală, decompresie circumferențială, fuziune

## Introduction

Tuberculosis of the spine is still an important orthopedic problem in Romania [1]. We report here a group of 5 patients with spinal tuberculosis treated by one-stage circumferential decompression with posterior instrumentation and fusion. We consider that aggressive surgical treatment should be adopted in the management of such patients with spinal tuberculosis [2, 3]. The aim of this intervention is to correct the deformity, to stabilize the spine and to remove bone sequester and paravertebral abscesses.

## Material and methods

From January 2009 to June 2010, 5 consecutive patients with spinal tuberculosis were enrolled in the study. There were 3 males and 2 females. The mean age at the time of diagnosis and treatment was 43.7 years (range 15-56 years). Diagnosis was based on clinical and hematological criteria. All patients had the symptoms of tuberculosis, such as weight loss, moderate fever and fatigue. The patients were admitted due to severe back pain or paraparesis, with mean symptom duration of 5.3 months (range 3-8 months). The thoracic spine was involved in 3 patients, the thoraco-lumbar spine (T11-L2) in one and the lower lumbar spine in one. The ESR was used to evaluate whether the lesion was "active" or not, and whether the disease was healed. The angle of the kyphosis was measured on lateral radiographs by drawing a line on the upper surface of the first normal vertebra above the lesion and on through the lower surface of the first normal vertebra



below the lesion, measured with an average of 26° (range 19-49°). The Frankel classification was used to assess the neurological compromise, resulting in one patient with grade B, one with grade C, one grade D and two grades E (normal neurological status).

All patients received routine chest X-rays and sputum examination for the tubercle bacillus, but all were found to be without open tuberculosis or acute miliary pulmonary tuberculosis (Figure 1).

**Figure 1: Normal pulmonary aspect on Thoracic X-ray**