Three Level Thoracolumbar Spondylectomy for Recurrent Giant Cell Tumour of the Spine: A Case Report

Faruk NA, MS Ortho, **Mohd-Amin MZ*,** MS Ortho, **Awang-Ojep DN**,** M Path, **Teo YY*,** MS Ortho, **Wong CC,** MS Ortho

Department of Orthopaedics, Sarawak General Hospital, Kuching, Malaysia
*Department of Orthopaedics, Universiti Malaysia Sarawak, Kota Samarahan, Malaysia
**Department of Pathology, Universiti Malaysia Sarawak, Kota Samarahan, Malaysia

ABSTRACT

Giant cell tumour (GCT) is a benign tumour but can be locally aggressive and with the potential to metastasise especially to the lungs. Successful treatments have been reported for long bone lesions; however, optimal surgical and medical treatment for spinal and sacral lesions are not well established. In treating spinal GCTs, the aim is to achieve complete tumour excision, restore spinal stability and decompress the neural tissues. The ideal surgical procedure is an en bloc spondylectomy or vertebrectomy, where all tumour cells are removed as recurrence is closely related to the extent of initial surgical excision. However, such a surgery has a high complication rate, such as dura tear and massive blood loss. We report a patient with a missed pathological fracture of T12 treated initially with a posterior subtraction osteotomy, who had recurrence three years after the index surgery and subsequently underwent a three level vertebrectomy and posterior spinal fusion.

INTRODUCTION

Giant cell tumour (GCT) of the bone is rare in the vertebrae above the sacrum. The prevalence ranges from 1.4 to 9.4% of total bone GCT's[1]. Management of these tumours is challenging as there is a high recurrence rate especially when the tumour is not removed in entirety. However, recent literature suggests that a complete removal should be performed for GCT's of the spine and radiotherapy reserved for inoperable tumours or those where complete tumour resection was not possible[2].

CASE REPORT

We present a case of a 25 year-old man who complained of worsening back pain and left lower limb weakness and radiculopathy for two weeks. He was unable to walk due to the pain and weakness. There was no bowel or bladder incontinence but he had loss of appetite and significant weight loss.

He had history of fall and sustained a stable burst fracture of T12. He was treated with an extension body cast at that time as there was no suspicious lesion on the radiographs. During follow-up, he developed a kyphotic deformity of which we performed pedicle subtraction osteotomy of T12 a year after the primary injury. He defaulted the follow-up after surgery.

Examination revealed a posterior midline surgical scar measuring 12cm. There was a mild kyphotic deformity. His hip and knee flexion were weak with a medical research council (MRC) muscle power grading of 3. The ankle and toes had MRC muscle power grading of zero. Magnetic resonance imaging (MRI) was suggestive of an aggressive spinal tumour over T12 with extension to T11 and L1 (Fig. 1). Computed tomography of the lungs revealed no lung metastasis.

He underwent posterior extension of fusion from T8-L4 with total vertebrectomy of T11, T12 and L1. Excision of the posterior elements of T11 and L1 then removal of the pedicles of T11 and L1 was done. *En bloc* tumour removal was attempted but scarring and adhesions to the diaphragm prevented an *en bloc* removal, so piecemeal vertebrectomy of T11, T12 and L1 and excision of tumour was performed. Three segmental arteries were ligated on the right side to facilitate cage insertion and the bone gap reconstructed with a titanium mesh cage filled with bone cement (Fig. 2). The reconstructed mesh was shorter than the total height of the

Corresponding Author: Mohamad Zaki Mohd Amin, Department of Orthopaedics, Faculty of Medicine & Health Sciences, Universiti Malaysia Sarawak (UNIMAS), Jalan Datuk Mohd Musa, 94300 Kota Samarahan, Sarawak Malaysia
Email: zakidr@yahoo.com