

Radiotherapy In Management Of Sacral Giant Cell Tumor: A Case Report

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INTRODUCTION:

Giant cell tumors (GCT) are locally highly aggressive tumor of bone comprising 5 to 10% of all benign bone tumors. GCT of the sacrum is uncommon, with a 2% to 8.2% of incidence rate. We report a case of GCT of sacrum managed successfully without surgery.

CASE REPORT:

A 22 year old lady who had progressive lower back pain associated with unsteady gait due to pain. Clinically there was a sacral mass measuring 5 x 5 cm and tender on palpation. Neurological assessment of the lower limbs was unremarkable and anal tone was intact. Laboratory investigations were unremarkable. X-ray of the pelvis showed lytic lesion over the upper sacrum. MRI spine revealed sacral giant cell tumor with L5/S1 spinal canal narrowing and bilateral S1 nerve roots compression (Figure 1). Pelvic arteriogram showed no evidence if arterial feeders or tumor blush. Subsequently a biopsy was performed and histopathology study reported as giant cell tumor.



Figure 1: MRI of pelvis (sagittal view), left side (pre – treatment), right side (post-treatment)

Following that, she underwent 30 cycles of radiotherapy and monthly IV pamidronate for the first 6 months. Subsequently she was administered oral alendronate weekly and yearly MRI of the lumbosacral to assess the tumor for the next 5 years. Her last MRI showed no worsening of the lesion and shrinking of lesion as compared to initial scans. She is pain free and ambulating independently without difficulty now.

DISCUSSIONS:

The standard treatment for GCT is curettage combined with adjuvant bone grafting or cement-augmented stabilization. It is effective in local tumor control and overall survival. Embolization may also prove palliative and/or curative in cases in which the tumor is unresectable or refractory to treatment.

Three to four decades ago, radiation of GCT with appendicular, pelvic, sacral and spinal lesions was commonly undertaken. The results were disappointing since the doses were below 35 Gy. However, in recent times the use modern equipment such with doses of 40 to 60 Gy, 3 to 5 times a week result in local oncological control of 85% to 90%. Besides there is 0% to 8% risk of secondary radiation induced malignant tumor which is considered very small. Moreover in selected cases where the area of tumor is inoperable or deemed to be risky for surgery (neurological or functional morbidity – sacral, vertebral lesions), radiation is believed to be an effective alternative.

The use of bisphosphonate as an adjuvant therapy in GCT of bone had resulted in decreased local recurrence. It demonstrates anti osteoclastic effects thus protecting bone from further resorption. In vitro studies showed apoptotic effect of bisphosphonates on GCT stromal cells and osteoclast.

CONCLUSION:

This patient's sacral GCT was successfully treated with radiotherapy (30 cycles) with adjuvant systemic and oral bisphosphonates over 5 years. Yearly imaging studies revealed the lesion remained stable and patient is asymptomatic. She is currently on her second year devoid of treatment years.

REFERENCES:

1. R. Lor Randall. Giant cell tumor of the sacrum. *Neurosurg Focus* 15 (2):Article 13, 2003.