



## RECURRENT CHONDROMA OF THE THORACIC SPINE: A CASE REPORT

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### ABSTRACT

Cartilage forming tumors are benign cartilaginous tumours that rarely affect the spinal canal. They account for 2% of all spinal tumors and 2.6 percentage of all benign tumors. A case of recurrent chondroma of thoracic spine of 25 years old female was presented with inability to walk, back pain, difficulty in passing urine and numbness of both lower limbs for one week. She had undergone total excision of chondroma of the thoracic vertebrae 3 years ago and no follow up done after surgery. MRI scan revealed, a well defined multilobulated mixed intensity, exophytic solid mass with peripheral ring like the enhancement of the capsule arising from the neural arch element of D10 vertebra with destruction of pedicle, lamina, transverse process and spinous process of D10 & D11 vertebrae with extra dural extension of mass in to spinal canal with total compression of lower dorsal spinal cord and conus from D9 to D10 level. The recurrence is very rare even after subtotal removal of tumor, In summary, we present an unique case of recurrent chondroma of the thoracic spine. The early identification and surgical resection results in the prevention of malignant transformation and development of neurological deficit.

**KEYWORDS:** Recurrent , Chondroma , Thoracic spine , MRI.



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## INTRODUCTION

Chondromas results from failed migration of chondrocytes. Only about 1 percentage of chondromas occur in the spine<sup>1, 2</sup>. Although they are more common in the setting of Olivers syndrome or Maffuccis syndrome<sup>3, 4</sup>. They can present from the first to sixth decade of life, although they are more common in the second and third decades. There may be a male predominance, although this is controversial. Chondroma is generally asymptomatic, it may cause a slowly developing neurological deficit due to the mass effect of the lesion on the spinal cord or nerve roots. Here we report a rare case of recurrent chondroma in the thoracic spine in a 25-year old woman.

## CASE REPORT

A 25 year old female was referred to our department with complaints of inability to walk, back pain, difficulty in passing urine, and numbness of both lower limbs for 1 week. She had undergone total excision of chondroma of thoracic vertebrae 3 years ago and no follow up done after surgery. Physical examination revealed multiple hard, immobile, nontender, swellings in the back. Neurological examination showed diminished all sensation below the level of umbilicus. Plain X ray-AP view of the thoracic spine showed an expansile lesion with calcification within the tumour and pedicle with screw fixation at D9 and D12 vertebrae. (fig1)

### *Plain X-ray AP View Thoracic Spine*



**Figure1**

***Plain X ray-AP view of the thoracic spine showed expansile lesion with calcification Within the tumour and pedicle with previous screw fixation at D9 and D12 vertebrae.***

MRI reveals, a well defined multilobulated, 176 X 60 X 124mm, Mixed intensity ,exophytic mass is seen over posterior paraspinal region from D5 to D12 level, mass seen arising from the lamina and transverse process of D10 vertebra. Right pedicle, lamina, and transverse process appears destroyed. Right half of D10 vertebral body also involved. Posterior neural arch elements of D10 and D11 vertebrae are irregular and thinned. Mass appears hypointense in T1W images and hyperintense

in T2W/STIR images. Mass appear multilocular in texture with no calcific foci. Post contrast study shows irregular nodular enhancement of the capsule of the mass. Mass extends to the spinal canal extradurally from D9 to D12 level. Lower dorsal cord compressed and displaced to the left and anterior by intraspinal component of the mass. Post surgical changes with pedicle screw fixation is seen at D9 and D12 vertebrae(fig2).

### **MRI-Thoracic Spine**



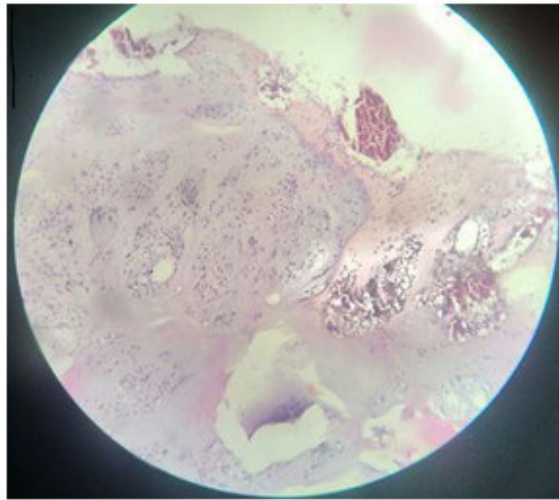
**Figure 2**

*A well defined multilobulated mixed intensity, exophytic solid mass with peripheral ring like enhancement of the capsule arising from the neural arch element of D-10 vertebra with destruction of pedicle, lamina, transverse process and spinous process of D10 & D11 vertebrae with extra dural extension of mass in to spinal canal with total compression of lower dorsal spinal cord and conus from D9 to D10 level.*

Surgical procedure was conducted by all tumor excised in toto. D10 corpectomy, rib graft placement and D9- D12 pedicle screw fixation. Operative findings include pearly white moderately vascular lobulated tumor containing clear oil like liquid. D10 vertebral body totally involved except left pedicle. Histopathology

revealed a fairly circumscribed neoplasm composed of nodules of benign hyaline cartilage. Chondrocytes are present inside the lacunae. Cells have moderate amount of eosinophilic cytoplasm and small pyknotic nucleus with occasional areas of osteoid formation suggestive of chondroma.(fig3).

## Histopathology



**Figure 3**

***Chondrocytes are present inside the lacunae. Cells have moderate amount of eosinophilic cytoplasm and small pyknotic nucleus with occasional areas of osteoid formation.***

## DISCUSSION

Benign cartilaginous tumors are classified into four histological types: chondroma, osteochondroma, chondroblastoma, and chondromyxoid fibroma. Chondromas can be subdivided into 2 types according to their site of origin: the medullary cavity (enchondroma) and the surface of periosteum (periosteal chondroma). In this case, the type of chondroma was periosteal chondroma. The periosteal chondroma can increase in size with broad base, but usually does not infiltrate the adjacent soft tissue. Chondroma can occur in any part of the vertebra including body, pedicle, lamina and spinous process.<sup>10</sup> to 25 percentage of the patients with multiple hereditary exostosis have solitary lesions<sup>7,8</sup>. Patients are rarely symptomatic from isolated chondromas of spine. However symptomatic patient can develop a progressive and destabilizing deformity. A chondroma most often effect the cartilage that lines the inside of the bones. The bones most often involved with this benign tumour are the miniature long bones of hands and feet<sup>5</sup>. however, chondromas were sometimes found in the ribs, pelvis, and rarely intracranial bones. Chondromas in the spine are very unusual pathologic entity, accounting

for approximately 3 percentage of all chondromas. While the exact cause of chondroma is not known. It is believed to occur either as an overgrowth of the cartilage that lines the end of the bones or persistent growth of original embryonic cartilage. Plain radiography may show indirect signs of these lesions with smooth erosions of the bone structure, which are radiolucent area of calcification. A lucency within the vertebral body, but the sensitivity for detection is low. MRI is important for differential diagnosis because tumor size, pattern, location and relation of surrounding structures, especially cord compression can be identified. Bone scan is positive if done during skeletal growth. Gross findings of chondroma appears as lobulated and cartilaginous mass with covering of fibrous tissue from the periosteum. Histopathological findings of chondroma are composed of chondrocytes arranged in a pseudobulbar fashion and may be associated with ossified regions. Treatments for symptomatic lesions are total removal of tumor, grafting and instrumentation. Malignant progression to chondrosarcoma must be verified by needle biopsy when suspected<sup>5,6</sup>. When the pain,

palpable mass or neurological compromise or the diagnosis in question, surgery should be considered. Surgery is usually curative because most tumors stop growing after closure of the epiphyseal plate during puberty. The incidence of recurrence is very rare. However follow up with repeat X ray may be necessary. Malignant degeneration into chondrosarcoma occurs in 1 to 5 percentage. Malignant progression is related with a component of syndromes like

Olier's syndrome and Mafucci's syndrome.

## CONCLUSION

We report a rare case of recurrent chondroma in the thoracic spine in a 25-years old women, the incidence of recurrence after total removal of tumor is very rare. However regular follow up with repeat X ray is necessary.

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