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Sacral Chordoma: A Case Report

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Abstract | **Case Report**

Chordomas are rare malignant tumors arising from notochord remnants, typically affecting the sacrococcygeal region. We report the case of a 60-year-old woman with a history of goiter treated with Levothyrox who presented with chronic right-sided sciatica evolving over more than one year. CT imaging revealed a large heterogeneous mass measuring 82×71×70 mm in projection of the right S1, S2, and S3 foramina, heterogeneously enhancing after contrast injection. The lesion completely filled the sacral canal, caused extensive osteolysis of the adjacent vertebral bodies, and occupied the right sacral foramina. This case highlights the importance of CT in diagnosing sacral chordomas and assessing the extent of bone destruction.

Keywords: Chordoma, sacrum, sciatica, CT scan, MRI, bone destruction, notochordal tumor.

INTRODUCTION

Chordomas are rare, slow-growing malignant tumors derived from notochordal remnants and commonly involve the sacrococcygeal region. They typically affect adults between the fifth and seventh decades [1,2]. Symptoms result from local mass effect and bone destruction, including pain and neurological deficits such as sciatica or cauda equina syndrome [3]. Imaging is essential to characterize the lesion, assess local invasion, and plan management [4]. We present the case of a 60-year-old woman with chronic sciatica and a large sacral chordoma diagnosed by CT and MRI.

OBSERVATION

A 60-year-old female with a history of goiter under Levothyrox presented with chronic right-sided sciatica lasting over one year. The pain progressively worsened, with no significant relief from analgesics. Neurological examination showed no motor deficit but mild hypoesthesia in the S1–S3 dermatomes on the right side.

CT Findings:

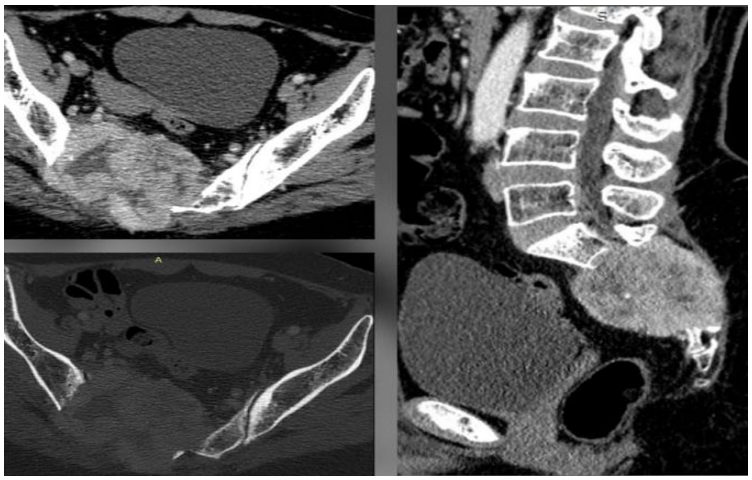

Figure 1: Contrast-enhanced CT scan of the lumbosacral spine

A large heterogeneous mass measuring approximately 82 × 71 × 70 mm was identified in the region of the right S1, S2, and S3 sacral foramina.

- The lesion showed heterogeneous enhancement after iodinated contrast injection.
- The mass completely filled the sacral canal at the S2 level.
- There was extensive osteolysis of the adjacent sacral vertebral bodies.
- The right sacral foramina were fully occupied by the mass.

MRI Findings:

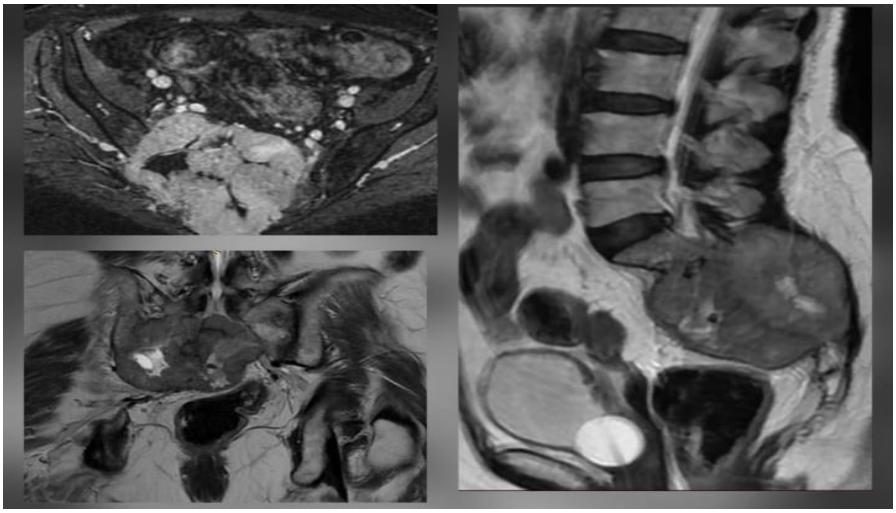

Figure 2: MRI of the lumbosacral spine showing a heterogeneous sacral mass (S1–S3) with canal occupation, bone destruction, pelvic extension, and gluteal muscle infiltration

- The mass was hypointense to isointense on T1-weighted images.
- It appeared heterogeneously hyperintense on T2-weighted images with internal septations.
- Post-gadolinium sequences showed heterogeneous enhancement.
- The lesion extended through the right sacral foramina S1–S3, compressing adjacent nerve roots.
- No evidence of spinal canal invasion beyond the sacral segments involved.

The combined CT and MRI findings supported the diagnosis of a sacral chordoma with extensive bone destruction and foraminal involvement.

DISCUSSION

Sacral chordomas commonly present with pain and neurological symptoms due to local compression and bone erosion [3]. CT imaging is valuable in demonstrating the extent of bony destruction and the lesion's relation to sacral foramina and nerve roots [5]. The heterogeneous enhancement pattern reflects the tumor's variable cellularity and matrix composition. Differential diagnoses include giant cell tumor, metastatic lesions, and chondrosarcoma. Definitive diagnosis relies on histopathology, often showing physaliphorous cells and brachyury positivity [6].

Surgical resection is challenging due to the tumor size and proximity to neural structures. Radiotherapy may be indicated postoperatively or if surgery is not feasible [7].

CONCLUSION

This case underlines the importance of imaging, especially CT and MRI, in diagnosing sacral chordomas presenting with chronic sciatica and significant osteolysis. Early diagnosis and multidisciplinary management are critical to improve outcomes.

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