Solitary osteochondroma of the sacroiliac joint: A case Report

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Abstract

Aim: Osteochondroma is the most frequently encountered benign bone tumor, accounting for approximately 9% of all bone tumors. According to current information, the most frequent localizations are the metaphyseal parts of long tubular bones. Multiple neoplasms are seen in 15% of lesions, while the majority occur as solitary tumors.

Case: We report the case of a 10-year-old female patient with complaints of swelling and pain behind her waist and right posterior pelvic region. On physical examination, there was pain with palpation of the posterior pelvic region where there was swelling. The biopsy result was reported as osteochondroma. It was decided to proceed with conservative follow-up. However, when the patient's complaints started, local excision was performed and the patient's symptoms regressed. The patient's follow-up is continuing by us.

Conclusions: Osteochondroma is the most common benign bone tumor. There are a variety of treatment options available, from surgical to conservative. Although the most common location is the metaphyses of long bones, it can be seen in many locations. However, with this case report, we believe that the possibility of its occurrence in the sacroiliac joint should also be considered.

***Keywords**: Musculoskeletal tumors; osteochondroma; sacroiliac joint*

1. Introduction

The pelvis functions as a structural hub connecting the spine and both lower extremities, which are the three largest structural components of the body. Accordingly, the sacroiliac joint (SIJ) plays a crucial role in load transmission between the spine and lower limbs by modulating the force-motion relationship.[1] In vivo motion studies have proved that the SIJ allows for only a limited range of movement.[2]

Osteochondroma is the most common benign bone tumor. It is frequently seen between the ages of 10-20 and the female-male ratios are approximately equal but with a male preponderance. It constitutes %20-50 of benign tumors and 9% of all bone tumors. Multiple neoplasms are seen in 15% of lesions, while the majority occur as solitary tumors.[3,4] It is usually observed in the metaphysis of the long tubular bones such as tibia and femur. Symptoms include pain, a mass on palpation (90% single lesion) and if the size continues to increase, signs of compression of neurovascular structures may be seen.[5,6] Its incidence is equal in the upper and lower extremities, but its incidence in the pelvic region is very rare.[7] This report describes an osteochondroma located in the right sacroiliac joint. According to our literature review, there have been no previously reported case of solitary osteochondroma in this region.

Figure 1

Pelvis AP X-ray image at first diagnosis (September, 2021)

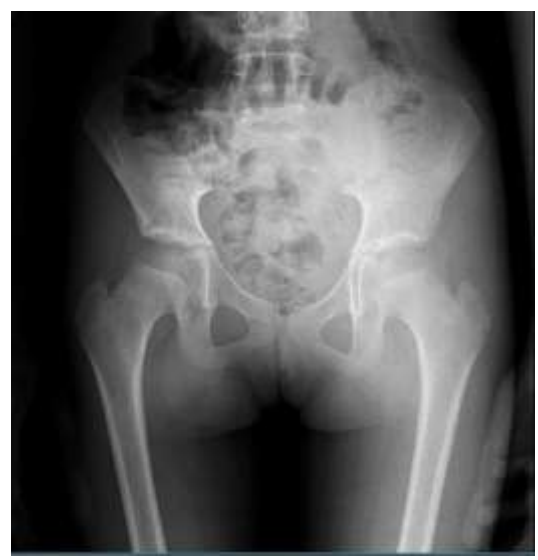

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Figure 2

Axial sectional image of osteochondroma in the sacroiliac joint on computed tomography. (September, 2021)

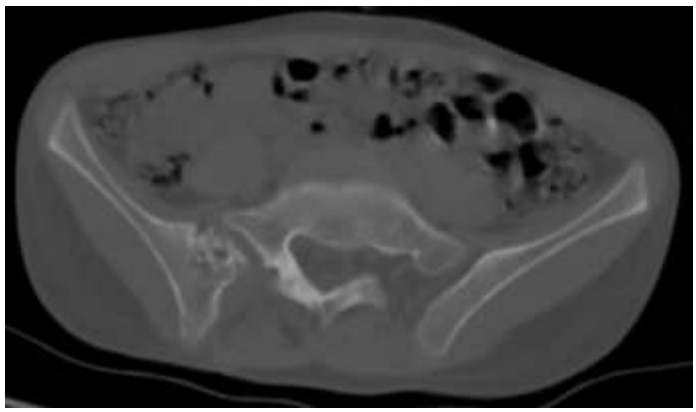
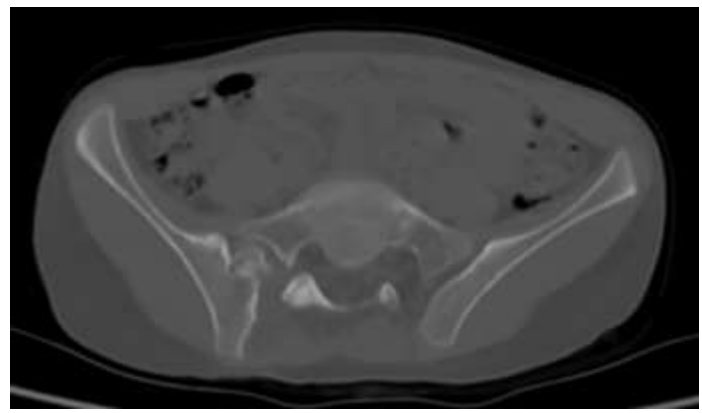


Figure 4

Coronal sectional image of osteochondroma in the sacroiliac joint on computed tomography. (September, 2021)



2. Case

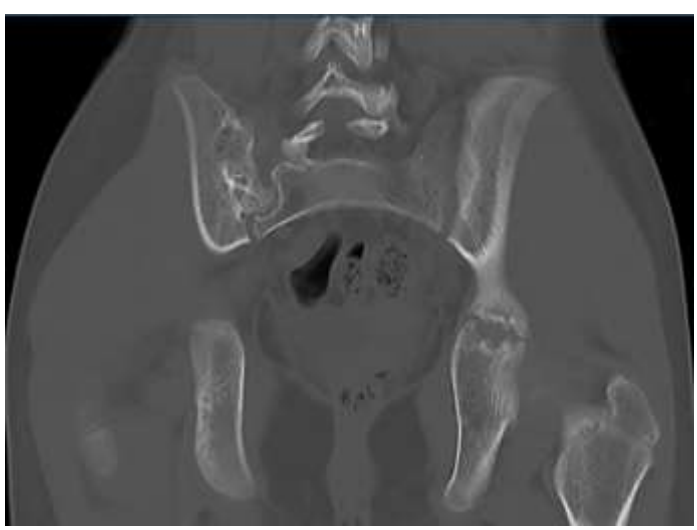
A 10-year-old female patient. She was a primary-school student. She visited our clinical center because of complaints of swelling and pain behind her waist and right posterior pelvic region. The first clinic that she applied to was ours. She did not report any further complaints. The patient did not report a history of trauma. The patient had no additional diseases. The patient's family history was unremarkable. The patient had no history of surgery.

On physical examination, there was pain with palpation of the posterior pelvic region where there was swelling. No redness or rise in temperature was detected in the area of swelling. The patient did not report pain during the three-phase hyperextension test. No other masses were found in any other parts of the body. The patient's Visual Analog Scale (VAS) score[8] was 5.

No pathological features were observed in the blood parameters of the patients and an open biopsy was performed. The biopsy result was reported as osteochondroma.

Figure 3

Coronal sectional image of osteochondroma in the sacroiliac joint on computed tomography. (September, 2021)



2.1. Radiological evaluation

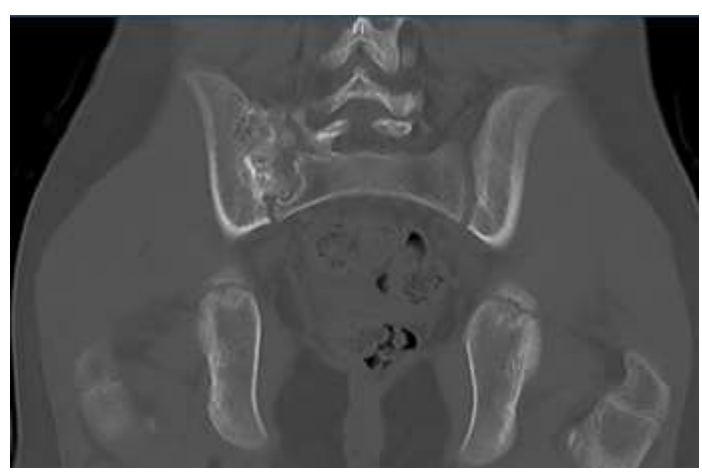
In September 2021, an irregular mass image was observed in the right sacroiliac joint (Fig. 1).

Whole-body bone scintigraphy was performed to rule out the possibility of osteochondromatosis. However, the lesion was considered to be solitary. On computed tomography (CT), the size was measured as 2 cm. It can be seen that cortex and medullary continuity is provided between the osteochondroma and the main bone tissue. An irregular peduncular mass is observed in the right sacroiliac joint. The protrusion towards the posterior was considerable. Non-mineralized hyaline caps have drawn attention in CT examinations(Fig. 2,3).

Owing to the patient's early age and mass characterization, the biopsy procedure was deemed sufficient. Based on the biopsy findings, the lesion was confirmed to be an solitary osteochondroma.. Surgery was not considered because it was related to the surface of the iliac joint. Therefore, it was decided to proceed with conservative follow-up. No additional treatments were administered. Routine control was planned every 6 months. In the April 2022 follow-up, the diameter of the mass was measured as 2,2 cm.(Fig 4,5).

Figure 5

Coronal sectional image of osteochondroma in the sacroiliac joint on computed tomography. (April, 2022)



In the follow-ups, the patient's complaints, size of the existing tumor, and status of the sacroiliac joint were planned for imaging. The patient was followed up regularly. At the end of 3 years, December 2024, excessive growth was observed in the right sacroiliac joint (Fig 6,7).

Due to discomfort experienced by the patient while sitting, a local partial excision of the mass was planned.

Figure 6

Axial sectional image of osteochondroma in the sacroiliac joint on computed tomography before surgery. (December, 2024).

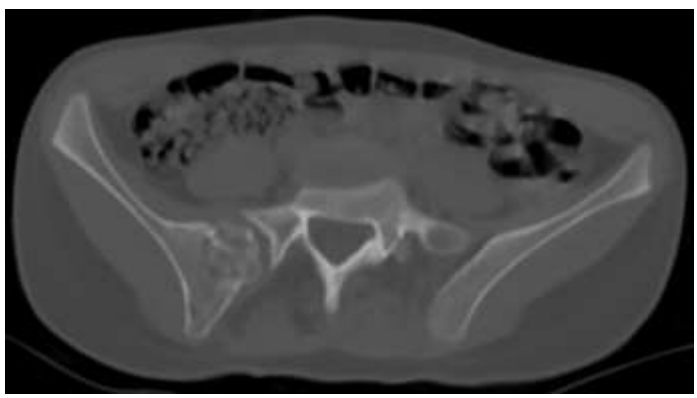
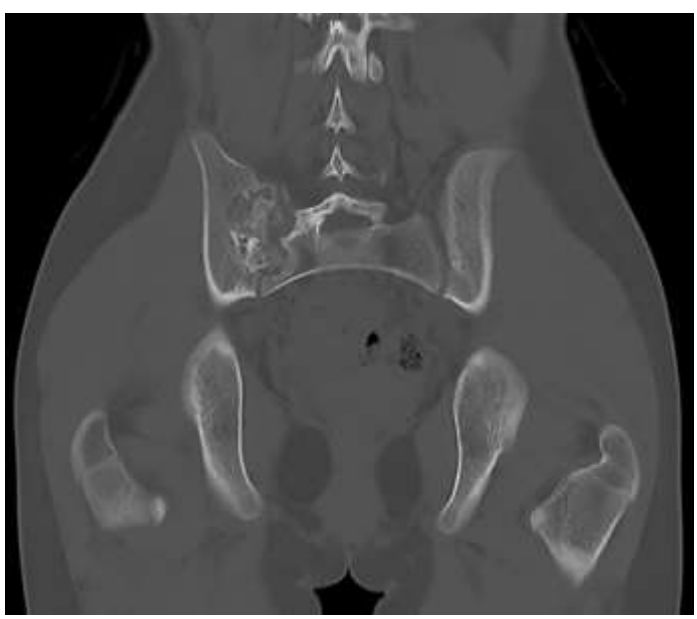


Figure 7

Coronal sectional image of osteochondroma in the sacroiliac joint on computed tomography before surgery. (December, 2024)



2.2. Surgical Technique & Treatment

The patient underwent spinal anesthesia and was subsequently positioned prone. Before surgery, antibiotics and tranexamic acid were routinely administered. A 5 cm incision was made over the lesion. The mass was accessed by dissecting through the skin and subcutaneous tissue and a partial excision was performed. The wound was sutured layerby-layer, drainage was performed.

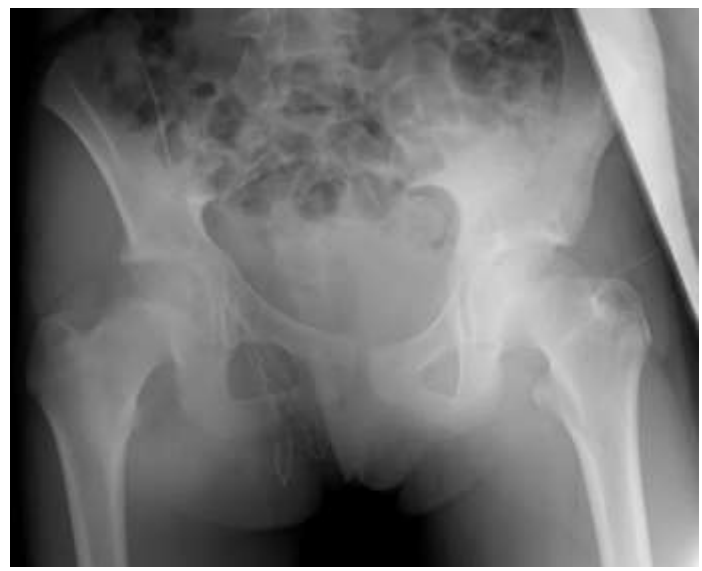
The patient was discharged following a two-day period of wound observation. Routine follow-up was recommended.

Postoperative imaging was performed (Fig. 8) and the patient did not describe any additional complaints during the postoperative follow-up period.

The patient's complaints regressed in the post-operative period. The patient's Visual Analog Scale (VAS) score decreased to 2 postoperatively. The current follow-up of this patient is still ongoing.

Figure 6

Post-operative radiograph after excision of osteochondroma. (December, 2024)



3. Discussion

Osteochondroma is the most common benign bone tumor. It accounts for 20% of all bone tumors and also %44 of all benign bone tumors. Depending on its location, it may presents with pain, swelling or compression symptoms. Osteochondroma is generally seen in young people under 30 years of age with a male preponderance[4]. Similarly, our patient had swelling and pain in the posterior pelvic region and 10 years old.

Although it is stated that osteochondroma is frequently seen in the metaphyses of long bones[9], our case demonstrates that osteochondroma can also be seen in the sacroiliac joint..

Osteochondromas are superficial bone lesion of the cortical and medullary bones. They have 'hyaline caps'. The continuity of the cortex and medulla with the main bone tissue is a pathognomonic finding [10,11] The importance of the hyaline cap is to provide an idea in terms of malignant transformation according to its thickness. There is a 1-3% risk of malignancy. This risk may increase by up to 10% in multiple cases. The most serious complication is chondrosarcoma transformation, which occurs in less than 1% of cases. [12,13] Bani et al.[14] reported in 2017 that chondrosarcoma developed from osteochondroma in the sacroiliac joint. In our case, fortunately, a biopsy report confirmed that it was an osteochondroma. No evidence of malignancy has been observed during the follow-up period to date.

Osteochondromas may be solitary, multiple, or associated with syndromes such as Multiple Hereditary Exostosis and Metachon-

dromatosis[15]. Although osteochondromatosis involving the sacroiliac joint has been previously reported[16], to the best of our knowledge, there is no publication documenting the occurrence of a solitary osteochondroma in this location. Just in case, whole-body bone scintigraphy was performed to rule out the possibility of this. Consequently, the lesion was solitary. Although the presence of osteochondroma in the sacroiliac joint has been reported in a case of osteochondromatosis, a solitary osteochondroma case has not been encountered in the literature.

Surgical treatment is rarely the prefered treatment option for osteochondroma. If the lesion causes symptoms such as pain, bursitis, and decreased range of motion, surgical treatment is considered as an option.[17] Considering the patient's young age and the morphological characteristics of the lesion, early surgical management was deferred. However, after 4 years of follow-up, the mass had grown posteriorly and the patient had increased pain at her waist while in a sitting position and surgery was planned. Local excision was performed using a 5 cm incision made over the mass. During the postoperative period, the patient's complaints regressed. Although a year has passed since the operation, the patient has not developed a recurrence in the same location and is still under follow-up.. Although the patient's follow-up time approached 5 years, longer follow-up results are needed.

This study aimed to report a previously unreported case of solitary osteochondroma in the sacroiliac joint and consider the possibility of osteochondroma in the sacroiliac joint.

4. Conclusion

Osteochondroma is the most common benign bone tumor. This can be observed in different locations. Contrary to previous literature, our case report shows that osteochondroma can also be seen in rare locations such as the sacroiliac joint. In such patients, we believe that masses in this location should only be followed up because total resection of the mass may cause serious damage to the sacroiliac joint. We also believe that choosing conservative surgical methods to relieve symptomatic complaints that occur as a result of follow-up will be more beneficial for the patient.

To our knowledge, solitary osteochondroma has not been reported in this localization and the treatment process can vary from follow-up to surgery depending on the complaints of the patients during follow-up.

Statement of ethics

Since the patient was not an adult, informed consent was obtained from her family (father). Since the patient could read and write Turkish, consent was obtained in Turkish.

genAI

No artificial intelligence-based tools or generative AI technologies were used in this study. The entire content of the manuscript was originally prepared, reviewed, and approved by both authors.

Funding

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Conflict of interest statement

The authors declare that they have no conflict of interest.

Availability of data and materials

This Data and materials are available to the researchers.

Author Contributions

EEK; Literature search, Writing, TT; Follow-up, ABD; Data collection, Follow-up, AK; Supervision, revision and final approval. Both authors read and approved the final manuscript.

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