Case Reports and Reviews

Case Report

Osteosarcoma of The Femoral Head: A Case Report

Lamine Sarr[1], Badara Diop[2], Alioune Badara Diouf[3], Badara Dembélé[1], Ndèye Fatou Coulibaly[1], Charles Diémé[1]

[1]*Department of orthopaedic surgery, Cheikh Anta Diop University, Dakar, Senegal*

[2]*Department of orthopaedic Surgery, Gaston Berger University, Saint-Louis, Senegal.*

[3]*Department of orthopaedic Surgery, Assane Seck University, Ziguinchor, Senegal*

Correspondence

Lamine Sarr

Department of orthopaedic surgery, Cheikh Anta Diop University, Dakar, Senegal

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Abstract

Osteosarcoma is the most common malignant bone tumor [1]. We report a case of osteosarcoma of the femoral head. The patient was 19 years old and presented with hip pain and a defect in the femoral head on imaging. A biopsy confirmed osteosarcoma of the femoral head. A head-neck resection with total hip arthroplasty was performed.

At the 7-year follow-up, the patient was in good general condition, with no signs of clinical or radiological recurrence.

Introduction

Osteosarcoma is the most common malignant bone tumor [1]. It is mainly observed in children and young adults [1] and preferentially occurs in the metaphyses of long bones [1]. Localizations in the femoral head are rarely reported [2].

We report a case of osteosarcoma of the femoral head managed by head-neck resection followed by total hip arthroplasty.

Case Report

This is a 19-year-old female patient who presented with right hip pain lasting for a year following a sports accident, in which she fell on her hip. The initial treatment included painkillers prescribed at a health center. The pain gradually became less responsive to usual analgesics.

Clinical findings

Upon examination, the patient was walking with a right-sided limp. We noted hip flexion limited to 110° and painful at the end of the range of motion. Internal and external rotations were 30° and 20°, respectively. Gluteus medius muscle strength was estimated at 4/5. Examination of the left hip was normal.

Diagnostic assessment

Imaging showed a standard X-ray revealing a bone defect in the femoral head without bony reaction (Figure 1). A CT scan confirmed geographically mapped lysis in the superior-external quadrant of the head, classified as Lodwick type II.

A biopsy and pathological examination led to a diagnosis of conventional osteoblastic osteosarcoma of the femoral head.

Therapeutic intervention

A monobloc resection of the femoral head and neck was performed, and a total hip prosthesis was inserted (Figures 2).

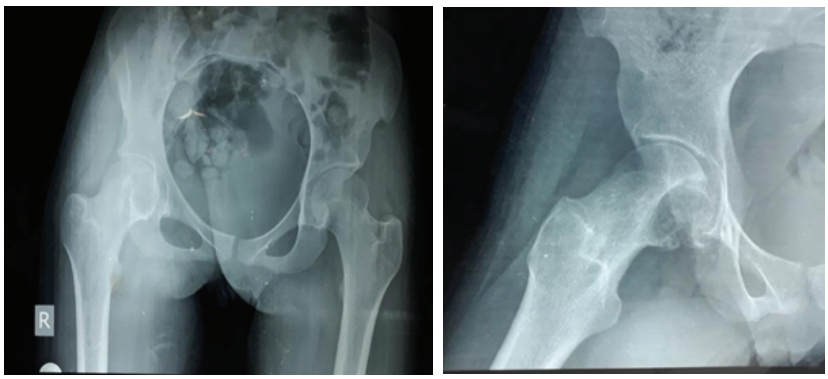

Figure 1: *X-ray of the pelvis and right hip showing a large defect in the right femoral head*

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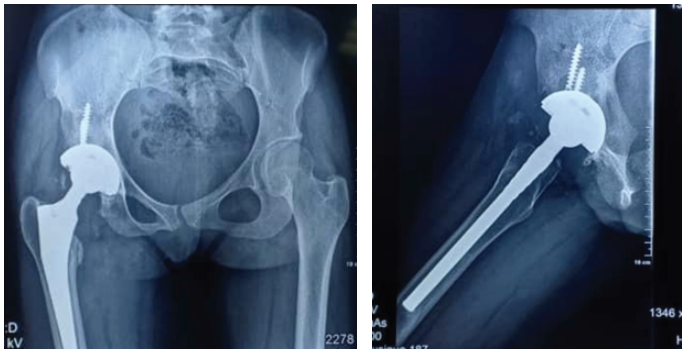

Figure 2: *Follow-up X-ray at 77 months postoperatively*

Figure 3: *Hip function at 77 months postoperatively*

Follow-up and outcomes

The postoperative course was uneventful, and the patient was able to walk without a cane and without limping at 45 days.

At the 77-month postoperative assessment, the patient was in good general condition. Hip mobility was complete and painless (Figure 3). X-rays showed the implant in place, with no signs of loosening and no bone defects suggestive of recurrence (Figure 2).

Discussion

Osteosarcoma is the most common malignant bone tumor [1]. It is primarily observed in children and young adults [1] and is diagnosed each year in approximately 400 children and adolescents in the United States [1]. The main sites of involvement are the metaphyses of the distal femur (40%), proximal tibia (16%), and proximal humerus (15%) [3], with tumors preferentially located near the knee and away from the elbow [4]. Osteosarcoma of the proximal femur accounts for less than 5% of cases [2]. Diagnosis can be challenging due to the high incidence of trauma and metastatic disease at this location. Clinical findings such as pain and weakness combined with imaging findings of bone lysis without reconstruction suggest osteosarcoma. The diagnosis is confirmed by anatomopathological examination following biopsy. Cases reported in the literature are often isolated. Dahan's series reported 12 cases over 30 years in a single center [2].

Treatment generally follows a "sandwich" protocol: neoadjuvant chemotherapy (preoperative), followed by surgery, and then adjuvant chemotherapy (postoperative) [2]. Surgical removal is radical in localized cases. The need to restore hip function led us to perform hip arthroplasty [2]. In our patient, resection and arthroplasty were performed simultaneously. She did not receive preoperative or postoperative chemotherapy. After 7 years, our patient is alive with no clinical or radiological signs of recurrence. In Dahan's series, at 7 years, one-third of the patients had died, one-third were alive with local or general recurrence, and one-third were alive without recurrence [2]. Simple prostheses or massive reconstructions allow for the avoidance of radical surgery [5], provided the diagnosis is not delayed.

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Conflict of interest

The author(s) do NOT have any potential conflicts of interest with respect to this manuscript

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Informed consent

Informed consent was obtained from the patient for inclusion in this cases.

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