

Symptomatic Renal Metastasis of Osteosarcoma Occurring after 7 Years of Complete Remission: A Case Report

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Abstract

Kidney metastasis of osteosarcoma is very rare. Very few cases were reported in the literature. We present the case of isolated symptomatic renal metastasis of osteosarcoma without pulmonary involvement, revealed by hematuria occurred seven years after treatment for osteosarcoma of the proximal tibia. The thoraco-abdominal scan revealed a large calcified tumor of a right Kidney that invaded the renal vein and inferior vena cava, without pulmonary metastases. The patient received neoadjuvant chemotherapy. Right Nephrectomy was performed after reduction of renal lesion. Histology confirmed diagnosis of renal metastasis of osteosarcoma.

Keywords: Metastasis; Osteosarcoma; Kidney

Introduction

Symptomatic renal metastasis of osteosarcoma is extremely rare and very aggressive with poor prognosis. The isolated form without pulmonary involvement is exceptional. We present a case of a young patient operated for an osteosarcoma of the proximal left tibia. He developed 7 years after complete remission, symptomatic renal metastasis without other secondary localization.

Case Presentation

We report a case of 25 years old patient, he presented 7 years ago an enormous mass of the right knee with inflammatory signs and collateral venous circulation. Radiography showed an osteolytic lesion of proximal tibia (Figure 1). The scan showed an invasion of the knee joint and the neurovascular bundle of the member. The biopsy revealed a grade II osteoblastic osteosarcoma.

The initial staging had shown no distant metastasis. Given the locally advanced stage of tumor, Trans-femoral amputation was performed. The limits of resection were healthy. Then the patient received adjuvant chemotherapy. The evolution was marked by good locoregional and distant control. Seven years later, the patient presented hematuria, with low back pain. Clinical examination objectified a mass in the right lumbar region painful on palpation. Thoraco-abdominal scan revealed a large isolated mass occupying two thirds of right kidney, predominantly necrotic with small calcifications. This mass invaded the right renal vein and inferior vena cava (Figure 2). There was no other metastatic lesion.



Figure 1: Face and profile radiographs of an osteosarcoma of the proximal tibia.



Figure 2: Abdominal CT scan showing renal metastasis in the right kidney

The patient had an ultrasound-guided renal biopsy. It confirmed the histological diagnosis of osteosarcoma metastasis (Figure 3). Patient received neo-adjuvant chemotherapy, based on cisplatin, adriamycin and ifosfamide, associated to hematopoietic growth factors. Abdominal scan after 3 cycles of chemotherapy showed a slight reduction of renal lesion. Right Nephrectomy was performed. Histology confirmed diagnosis of renal metastasis of osteosarcoma.

Discussion

Osteosarcoma is the most common primary malignant bone tumor. It accounts, in large series, 20% of malignant tumors of bone. The peak incidence occurs in the second decade of life with a male predominance. This tumor primarily affects the metaphysis of long bones and is located preferentially at the distal femur, proximal tibia (15%) and proximal humerus [1-3]. It is an aggressive tumor, its metastases occur between 20% to 30% of cases in the year following surgery and chemotherapy. The spread is mainly to the lung (95% at autopsy), to the skeleton (50%),

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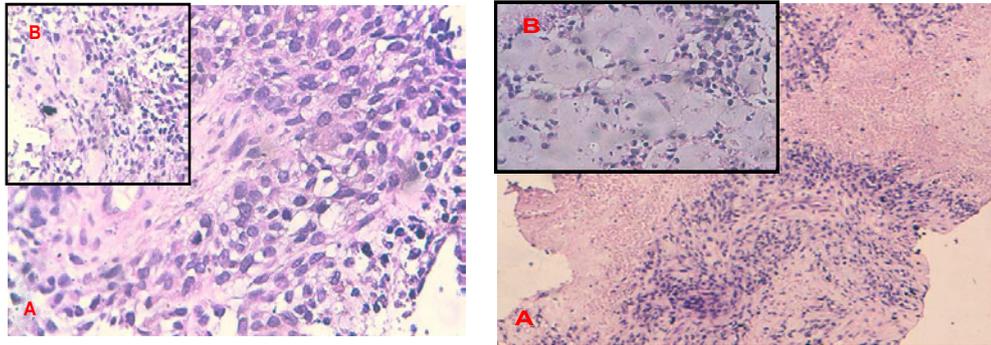


Figure 3: Histology of renal metastasis of osteosarcoma.

and only 12% to the kidneys [2-4]. The initial presence or occurrence of metastases, decreases survival from 70% to only 30% [5].

The prognosis varies according to the time of occurrence of metastases and their number. It is more severe if the release is early and multiple, best if it occurs after several years of monitoring and limited to a few nodules. The response to chemotherapy often appears identical to that of the primary tumor when concomitant. Premortal diagnosis of renal metastasis is very rare, because patients do not survive long enough to develop symptoms. The reported incidence of renal metastases of extra renal tumors varies from 2 to 20% [6]. In osteosarcoma, 10-12% of autopsies of patients showed a renal metastasis [7,8], while 15% of patients have clinically detectable lung metastases at diagnosis. Clinically, these metastases are often silent, sometimes discovered during staging or accidentally. They can, in a few cases, be symptomatic with hematuria, back pain, and rarely a palpable mass. CT scan with injection of contrast is the best examination for the diagnosis of renal metastases [9]. It shows more invasion of the renal vein, in contrast to primary malignant tumors of the kidney [10,11]. Renal metastases may appear several years after treatment of primary cancer, as it can also be a "second cancer". It makes the recognition of secondary nature difficult. However, when there is a neoplastic history [12]. A recent study found an average interval of 62 months from diagnosis of metastasis and treatment failure of primary tumor [13]. Hallet et al. [14] reported a case of renal metastases found 14 years after treatment of the primary tumor. The biopsy, in this case, is an essential part of therapeutic decision because the prognosis differs according to both hypotheses. Very few cases of symptomatic renal metastases of osteosarcoma have been reported in the literature. A detailed study shows only 10 cases [8-15], eight were female. Age at diagnosis of renal metastasis ranged from 15 to 27 years. The primary site of the tumor was located in the femur in seven cases, one case at the ulna, one on the tibia and one on the fibula. Three of the ten patients had bilateral renal metastases; four patients had left localization and three on the right. Five patients were asymptomatic, three had pain and two had hematuria. Although the prognosis of these patients was poor, three patients survived at least 20 months after complete resection of the renal tumor.

Over the past 30 years, the 5-year survival of patients with osteosarcoma was improved from 10% to 70%. However, the regimen of chemotherapy most effective uses the same agents that were used during the last 20 years: doxorubicin, cisplatin, methotrexate and ifosfamide. Surgery combined with chemotherapy appears to improve patient survival. Indeed, the results of nephrectomy showed that in some patients, given their young age in most cases, the prognosis was significantly better [13].

Conclusion

Progress in the treatment of osteosarcoma had prolonged the survival of patients, and allowed the appearance of new metastases such as renal metastases. These metastases in their isolated form without pulmonary involvement are very rare. The treatment must be rapid and multidisciplinary.

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