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Denosumab as treatment of a suspected pelvic giant cell tumor

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Introduction: Giant cell tumor of bone (GCT) is a benign tumor with highly destructive potential, rich in osteoclastic cells. The main treatment is surgical: curettage plus adjuvants or "en bloc" resection plus reconstruction. Sometimes surgery can not be performed or is mutilating. There are options as denosumab, a human monoclonal antibody wich inhibits osteoclasts' RANKL. Denosumab has a rate of stabilization or regression of the disease of 90%, and 65% of ossification.

Methods: We present the case of a 32 year old woman with pain in right hemipelvis and limb for 6 months in 2012. Radiography, MRI and CT scan showed an aggressive bone tumour in ischion and posterior acetabular wall, with large soft tissue involvement in adductors and perineum. Percutaneous needle-biopsy showed a giant cell tumor.

Given the iatrogenic potential of the surgery, other possibilities as denosumab were considered, in order to make the surgery less mutilating. The patient was treated with denosumab 120 mg / 4 weeks for 6 months with reinforcement on days 8 and 10. There was stabilization at first and regression and ossification afterwards, so a second cycle was done. Surgery was performed in 2014: resection of the ossified mass with marginal limits in the eyebrow, and wide in the rest.

Results: Hystpathological exam of the specimen showed, unexpectedly, low grade osteosarcoma. This misleading in the diagnosis was due to high quantity of osteoclastic cells and the poor rate of mitosis in biopsy. After evaluating the case in our sarcoma comitee, we decided to wait and see. At present the patient is stable with no sings of recurrence.

Conclusion: Denosumab offers an effective treatment for unresectable GCT, offering control or reduction of disease rates up to 90%, which can make them operable. Given this case, it seems also effective in other type of tumors such as low grade osteosarcoma rich in osteoclast cells. This type of osteosarcoma is difficult to diagnose and can be confused with GCT.