MULTIDISCIPLINARY APPROACH IN THE TREATMENT OF MALIGNANT BONE TUMORS

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Introduction. There are two types of tumor lesions at bone level: primary tumors and bone metastasis. These lesions cause a decrease in the structural strength of the bone that may lead to fracture. The goal of the orthopedic treatment is to resect the tumor, alleviate symptomatology, and restore the function of the limb. The orthopedic treatment consists of two phases: tumor resection and limb reconstruction. Treatment of such lesions implies extensive preoperative investigations to determine the local and general extent of the tumor and procedures aimed to facilitate resection.

Case presentation. We present the case of a 58-year-old male, diagnosed with clear cell renal carcinoma three years before and treated by nephrectomy. Two months after surgery, the patient started reporting moderate pain in the hip, which gradually intensified. He was first seen in Foisor Hospital in December 2018 when a pathologic bone fracture in the trochanteric region of the right femur was discovered at the radiologic exam. This was supposed to be a bone metastasis from the previously operated renal cell carcinoma.

The MRI investigation showed the presence of a large, polylobed bone tumor with an inhomogeneous structure, sized 80/ 72/ 82 mm extending in the adjacent soft tissue. Bone scintigraphy of entire skeleton revealed no other lesions and abdominal MRI exam revealed neither the recurrence of the tumor or the presence of abdominal metastasis. Significant vascularization of the tumor, from branches of the deep femoral artery, was evidenced on the Angio Computer Tomography. Due to the known profuse bleeding of such lesions, an angiography with embolization was also performed. Embolization was done with PVA particles, with a lack of post-embolization load. The Angio Computer Tomography scan performed at three weeks after embolization showed a reduction in size of the tumor.

In March 2018 patient underwent bone resection and reconstruction with a G.M.R.S. tumor prosthesis. Resection was performed in a complex team involving also two vascular surgeons. The pathology exam confirmed it was a renal cell carcinoma bone metastasis.

Results. At one week after the surgical procedure, the operative wound was healing, the patient had no pain, and he was gradually regaining ambulation.

Conclusion. Surgical treatment of such neoplastic pathology is difficult and involves a multidisciplinary approach consisting of disciplines such as oncology, orthopedics, vascular surgery, and pathology. It also implies a significant contribution from radiology and interventional radiology.

Keywords: bone metastasis, GMRS tumor prosthesis, angiography, embolization