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Vascular Procedures Prior of Radical Resection of Retroperitoneal Sarcoma

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ABSTRACT

INTRODUCTION

Radical resection with en block removal of involved or invaded organs still remains the optimal treatment of retroperitoneal sarcomas.

CASE PRESENTATION

We present the case of a 74-year-old male with a large sarcoma of the pelvis. The patient was initially subjected to an exploratory laparotomy in another hospital, during which the excision of the tumor was not undertaken as inoperable due to the proximity to the pelvic vessels. The patient was subjected instead to a surgical biopsy and the creation of Hartmann's colostomy because of mesosigmoid vessel injury. A successful R0 resection was performed at a later date, in collaboration with interventional radiologists and vascular surgeons.

CONCLUSION

A multidisciplinary approach, with teams of general surgeons, vascular surgeons and interventional radiologists, can make feasible a complete (R0) resection of large sarcomas in close proximity of major vessels.

KEYWORDS

Sarcoma; Coil; Embolization; Femo-femoral bypass; En block resection

INTRODUCTION

Radical surgery remains the only effective treatment of retroperitoneal sarcomas, since alternative treatments such as radiotherapy or chemotherapy so little or no effect. Such procedures include en block resection of the tumor along with adjacent organs in a rate of 30-60% [1-4]. Most difficult and challenging cases are tumors in close anatomical relation to main vessels, such as inferior vena cava and iliac vessels [5-8]. In our series of more than 100 published cases of retroperitoneal tumors in a 30-year period [9] the IVC was involved and removed en block with the tumor in one case. In this paper, we present the case of a patient with a large liposarcoma of the pelvis, deemed inoperable in another institution, who was successfully treated with R0 resection after multidisciplinary approach.

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CASE PRESENTANTION

A 74-year-old male presented with atypical abdominal pain. He was subjected to CT and MRI scans which revealed a voluminous pelvic tumor in close contact with the common iliac vessels (Figure 1). The patient was initially subjected to an exploratory laparotomy in another hospital, during which the excision of the tumor was not undertaken as inoperable because of the pelvic vessels relation. The patient was subjected instead to a surgical biopsy and the creation of Hartmann's colostomy because of mesosigmoid vessel injury. Pathology report revealed a well differentiated liposarcoma. The patient was referred to another hospital, a pigtail catheter was placed in his left ureter, but during the final evaluation the tumor was deemed inoperable due to the close proximity to major vessels. The patient then addressed our surgical team and was initially subjected to endovascular coil embolization of the left internal iliac vessels in order to prevent intraoperative bleeding (Figure 2). A femo-femoral arterial bypass was then performed in order to ensure the arterial perfusion of the left limb. Finally, after 20 days, he was successfully subjected to the removal of the tumor without complications. Gastrointestinal tract continuity was performed at a later date.

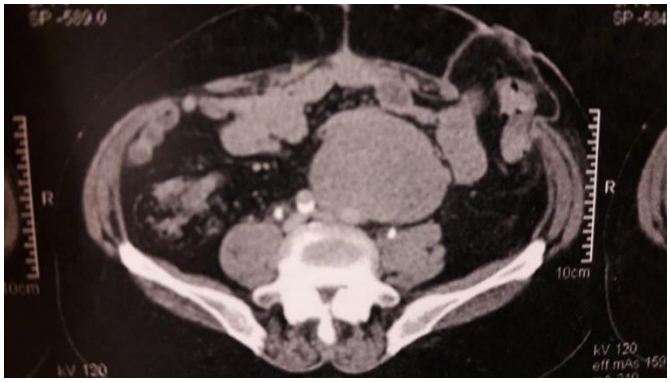

Figure 1: Voluminous pelvic tumor in close contact with the common iliac vessels.

DISCUSSION

It has been an established practice to radically remove retroperitoneal sarcomas, along with their capsule in order to avoid tumor rupture and tumor cell spillage. In order to be radical it is necessary to remove the tumor en block with adjacent organs in 30- 60% of the cases. Most commonly removed organs are the kidneys (usually not infiltrated, but surrounded), the spleen, the colon, the tail of the pancreas, the diaphragm, the uterus and major vessels. Karakousis et al [1] in one of the first series showed the favorable results of en block organ resection, in 5 and 10- year survival. This approach is up to date the only acceptable treatment, since other modalities (radiotherapy and chemotherapy) show little or no benefit [1-4].

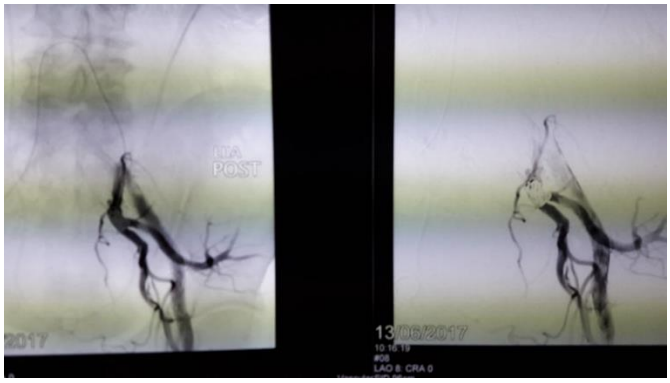

Figure 2: Coil embolization of the left internal iliac artery.

Most challenging cases involve major vessels, invaded, or in close contact to the tumor. During the last years many series showed promising results with tumor resection en block with vessels (aorta, vena cava, and iliac vessels), leading to R0 or R1 resections, followed by reconstruction or ligation. [5-8]

In one of our published cases, the tumor infiltrated the interior vena cava. We removed the vena cava from the level of the renal veins to its bifurcation with double ligation. We opted for ligation since we were not prepared for reconstructions and relied on the presence of collateral veins as a result of the chronic pressure off of the tumor to the vena cava. The operating result was excellent with R margins and no early or late edema of the lower extremities. [9, 10]

In the case presented here, preoperative imaging and the prior surgery made evident the difficulties and tumor relation to the iliac vessels. Our decision to proceed with

a second attempt was influenced by the contemporary literature and the absence of other available options. The collaboration of our surgical team with interventional radiologists and vascular surgeons was essential.

CONCLUSION

Since the only successful treatment of retroperitoneal tumors is radical surgery, the resection of the tumor en block with other organs should be our policy. The infiltration or close proximity to major vessels according to the current literature is not a contraindication to a radical surgical attempt. Close and good collaboration with vascular surgeons and interventional radiologists is of paramount importance. Current imaging techniques and available procedures are in favor of the patients and our obligation to do the best.

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