

## Robot-Assisted Resection of a Pelvic Sarcoma: A Case Report

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### Introduction

Pelvic soft-tissue sarcomas frequently require the involvement of multiple surgical subspecialties given the close proximity of various important anatomical structures. These tumors occur in tight spaces that are often difficult to visualize and manipulate through conventional open surgical approaches. The robotic platform with 3-D vision and multiple degrees of freedom in joint articulation has enabled surgeons across many disciplines to complete increasingly difficult intraabdominal and pelvic procedures in minimally invasive fashion. We present a case of a pre-sacral soft-tissue sarcoma that was dissected free of the intrapelvic contents with robot-assistance, and subsequently delivered through a separate open posterior approach. A video of the pelvic dissection is provided.

### Case Report

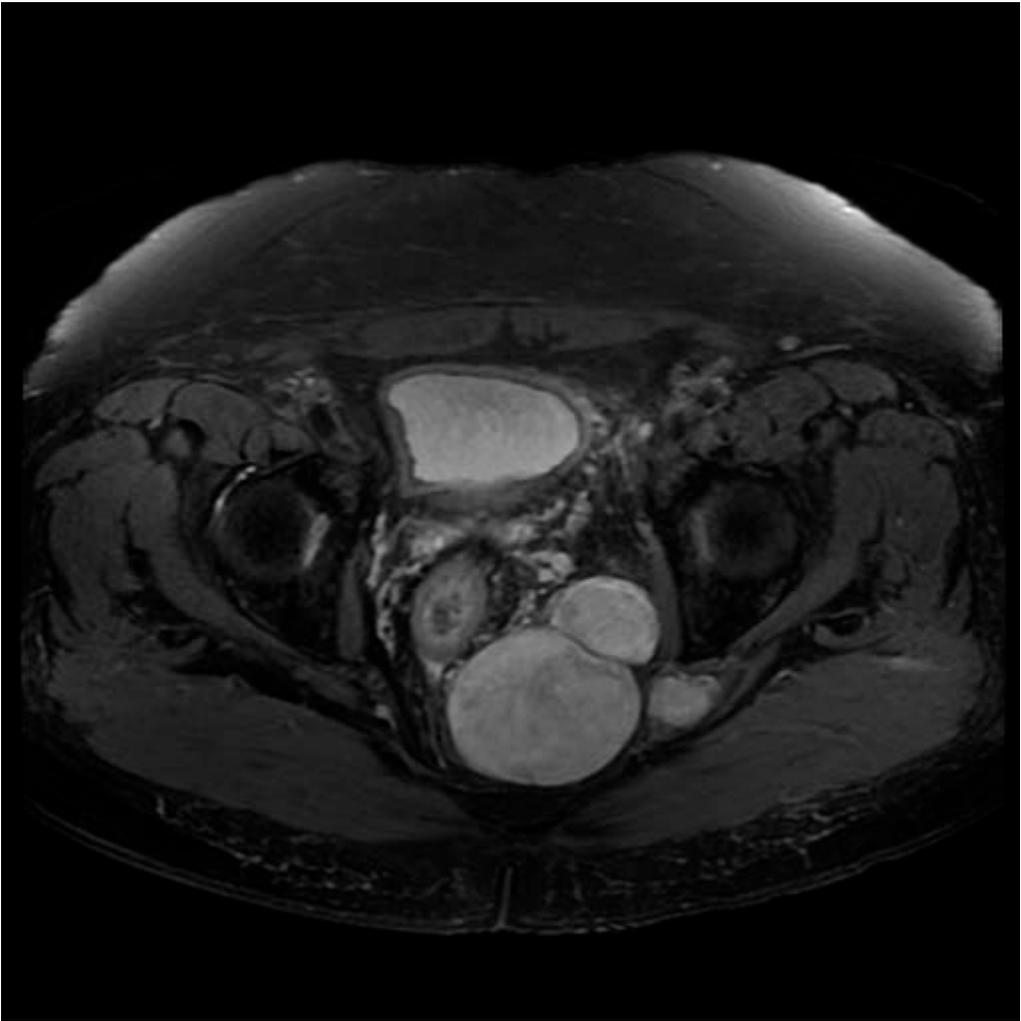
An otherwise-healthy 76 year-old male presented to our clinic with a long-standing buttock mass. An MRI was obtained (**Figure 1**), revealing a large, mildly enhancing soft-tissue mass centered in the left ischio-rectal fossa displacing the rectum anterolaterally, and extending into the left gluteal subcutaneous soft-tissues. A biopsy was obtained, revealing a low-grade spindle cell neoplasm NOS. A PET-CT revealed no evidence of distant disease. Given the imaging findings, we anticipated difficulty in obtaining wide margins, thus neoadjuvant radiation was recommended. The patient underwent preoperative radiation to include 5000cGy in 25 fractions over the course of one month. Surgical resection was carried out approximately 4 weeks later. The surgery commenced with the patient in the lithotomy position, and the tumor was dissected free from the intra-pelvic contents using a robotically-assisted approach. (**Video**) The bladder, ureter, rectum and sigmoid mesentery were mobilized off the mass allowing for exposure of the superior, posterior and lateral margins of the mass within the pelvis. An abdominal midline incision was avoided. Four laparotomy sponges were placed along the superior plane of dissection to allow for identification later in the procedure. Following the anterior portion of the case, the patient was repositioned laterally, and an open posterior approach was utilized to expose the ischio-rectal fossa and posterior pelvis. (**Figure 2**) The inferior portion of the gluteus maximus was removed as a posterior margin, and the sacro-tuberus and sacro-spinous ligaments were released from

their sacral and pelvic attachments to allow mobilization of the tumor through the window between the sacrum and coccyx medially and posterior column laterally. Identification and removal of the four laparotomy sponges confirmed the resection plane superiorly in the pelvis.

### **Discussion**

To our knowledge, this is the first reported case of robot-assisted resection of a pelvic sarcoma. The potential advantages of this approach include excellent visualization of the intra- and extra-peritoneal pelvic contents, ability to fit a wide variety of instruments in a tight space, improved hemostasis, and minimized co-morbidity associated with a formal open anterior approach.

Figure 1



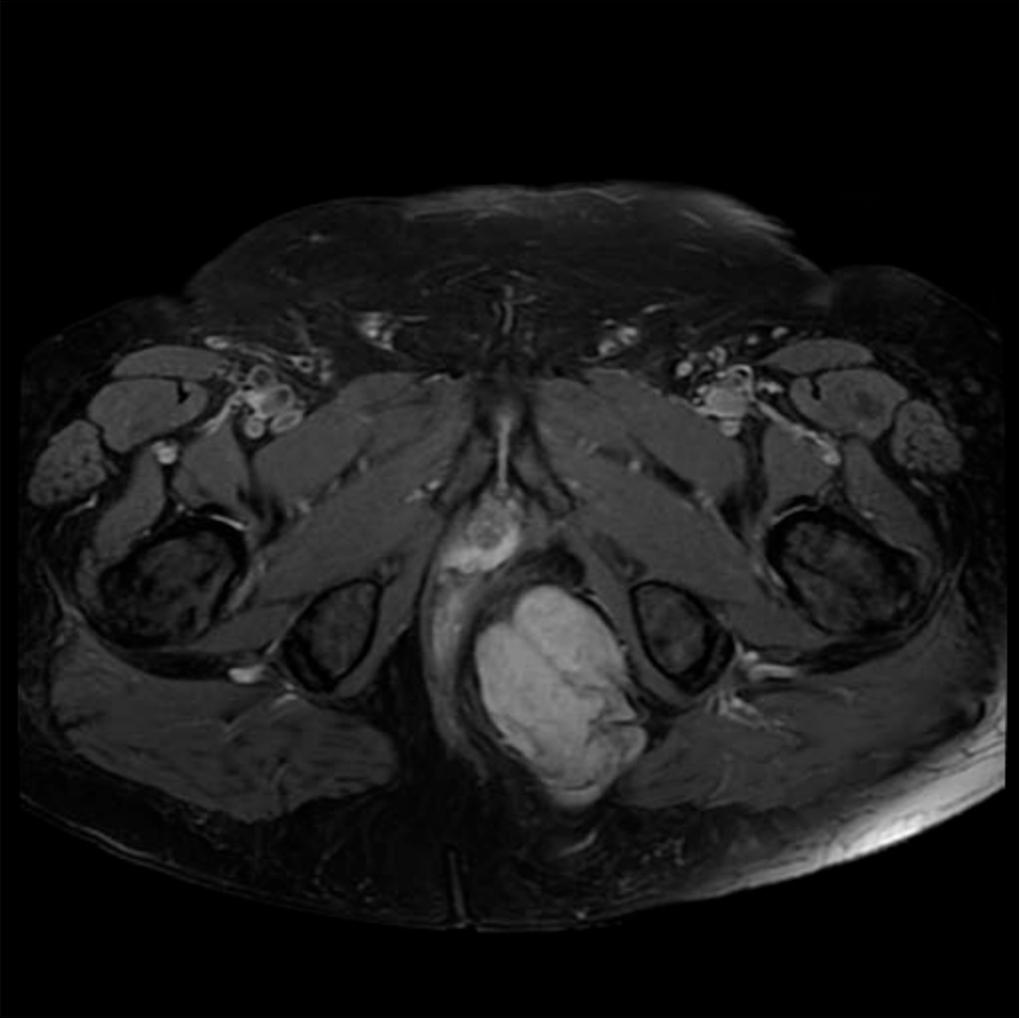


Figure 2

