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Asynchronous abdomino-parasacral resection of a giant pelvic lipoma protruding to the left buttock

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ABSTRACT

INTRODUCTION: Few reports detail adequate surgical management of giant pelvic tumors that traverse the sciatic foramen.
PRESENTATION OF CASE: We present a case of a giant retroperitoneal pelvic lipoma that presented with a dumbbell shape on imaging, occupying the entire lesser pelvis and protruding to the gluteus through the sciatic foramen. Surgery was performed for *en bloc* resection of the tumor.
DISCUSSION: A parasacral approach with the patient in the prone position was necessary to dissect the tumor in the buttock, manipulate around the sciatic foramen and preserve collateral blood flow for the gluteal muscle. An abdominal approach was also essential to ligate the internal iliac vessels involved in the tumor. Accordingly changings the position of the patient during the operation were required. Division of the sacrotuberous and sacrospinous ligaments and packing of the soft tumor into a plastic bag were useful to pass the buttock portion through the foramen without the tumor breaking off.
CONCLUSION: The asynchronous abdomino-parasacral approach with several turnings of the patient's body and plastic bag packing of the tumor were advantageous to manage *en bloc* resection of the giant pelvic lipoma presented in this case study.

1. Introduction

Orthopedic or general surgical procedures rarely present situations where one must synchronously manipulate in both the pelvic and buttock regions astride the sciatic foramen. In this case study, we detail a patient with a giant lipoma occupying the entire lesser pelvis and protruding to the left buttock through the sciatic foramen. For a case like this, few reports provide surgical management options regarding incision approaches, the patient's body position, and other tips to permit *en bloc* resection of such a tumor.

2. Presentation of case

A 60-year-old woman presented with a 7-year history of a dull lump on her left buttock; she started to suffer from buttock and perineal pain while walking a half year ago. She was referred to our hospital for surgery. On examination, a vague bordered large mass with mild tenderness was palpable on her left gluteal region, but with no identified neurologic abnormalities involving her left leg.

A MDCT (multi-detector-row CT) examination revealed a huge, the maximum diameter was 21 cm in size, well-defined mass that occupied almost all of the pelvic space and extended to the left buttock through the greater sciatic foramen (Fig. 1). Magnetic resonance imaging showed that the mass had an iso-intensity equivalent to that of fat, suggesting an atypical lipoma or well-differentiated liposarcoma.

The patient's care team included orthopedists and general surgeons. The patient was placed in the prone position after insertion of a double-J stent into the left ureter. The skin was incised along the left margin of the sacrum and the sacral side of the gluteus maximus muscle was divided to expose the tumor following marginal dissection of the gluteal part of the tumor (Fig. 2a). The sacrotuberous and sacrospinous ligaments and coccygeal muscle were divided to enlarge the sciatic foramen. The pelvic part of the tumor was bluntly dissected as long as a finger reached through the enlarged foramen. The dissected portion of the tumor in the left buttock was put in a plastic bag before transient closure of the wound. The patient was then placed in a lithotomy position to open the abdomen. The involved left internal iliac artery was

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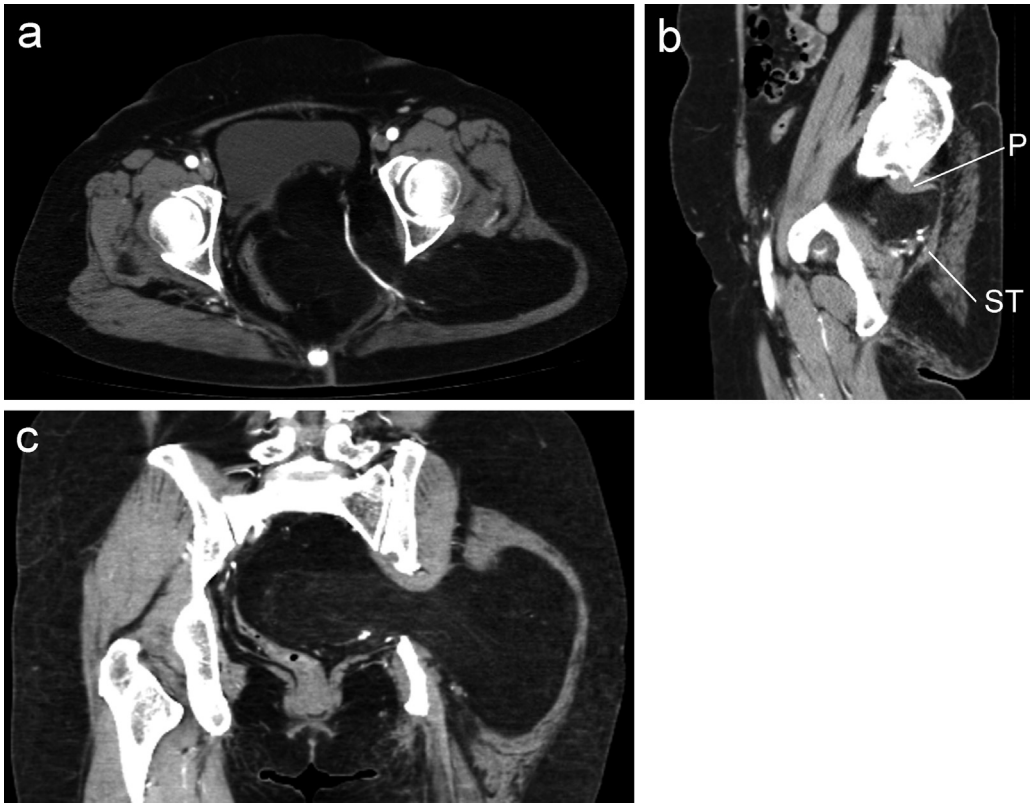

Fig. 1. Enhanced MDCT images of the tumor. (a) Axial view: the mass compressed the pelvic organs to displace the bladder anteriorly and the rectum to the right. The left internal iliac artery was involved in the tumor, and the inferior gluteal artery ran through the tumor. (b) Sagittal view: the mass passed through the infrapiriform foramen. (c) Coronal view: the mass extended to the left buttock and manifested with a dumbbell-like shape on the image. P: piriformis muscle, ST: sacrotuberous ligament.

divided distal to the superior gluteal artery (Fig. 2b). The tumor was bluntly dissected until the edge of the plastic bag was pulped deep in the pelvis. After completion of the dissection, the plastic bag was raised up to the abdomen, resulting in complete removal of the whole tumor (Fig. 2c). The enlarged sciatic foramen was 5 cm × 3 cm and not covered with any prosthesis. For the last step, the patient was again placed in the prone position to reconstruct the sacrotuberous ligament. The postoperative course was uneventful.

The tumor was a lobulated mass of adipose tissue measuring 21 × 17 × 3 cm in size, 860 g in weight (Fig. 3). Histologically, homogenous proliferation of mature adipocytes without obvious proliferation of immature adipoblasts was observed, corresponding to a diagnosis of well-differentiated lipoma.

The patient remained well for two years following her surgery and follow-up MDCT scans have demonstrated no recurrence and no hernia.

3. Discussion

The preoperative discussion in this case centered around strategies for approaching dissection of the tumor. Because the tumor occupied most of the pelvis and involved the internal iliac vessels, it was essential to access the pelvis via peritoneal or retroperitoneal approach. Simultaneously, it was also necessary to perform a skin incision on the buttock to dissect the large part of the tumor that was localized there. A classic posterior Kocher-Langenbeck approach would allow the main blood flow to the gluteus maximus (from the inferior gluteal artery) to remain intact.[1] However, in our case, removal of the tumor resulted in an interruption of the blood flow from the inferior gluteal artery. Therefore, gluteal muscle dissection along the sacrum was beneficial to preserve collateral blood flow for the muscle. Furthermore, a parasacral incision above the sciatic foramen, physically the closest way to the foramen, was advantageous for manipulation around the foramen and posterior pelvic dissection.[1,2]

Subsequently, the next area discussed was which body position was appropriate for the patient. Patients with chordoma or recurrent rectal cancer have undergone operations performed in the right lateral position via a synchronous abdominosacral approach, that afforded adequate mobilization of the colon and exposure of the levator ani in the deep pelvis while obviating the need to change the position of the patient.[3–5] However, with tumors occupying and/or involving the pelvis, an asynchronous abdominosacral approach with changing the position of the patient during the operation has been adopted.[3,6] We employed an asynchronous abdomino-parasacral approach in order to secure a better surgical field and flexibility for surgical manipulations. Transferring the patient to another operating table that had already been prepared for the next posture to be used helped reduce the stress related to this labor.

Enlargement of the sciatic foramen and use of a plastic bag were advantageous to accomplish *en bloc* resection of the tumor. If a part of the tumor that was localized in the buttock was blindly pulled out into the pelvis, the tumor might have been torn apart because of its own softness and thickness, which was larger than that of the sciatic foramen. Packing the buttock part of the tumor in a plastic bag offered strong and smooth capsule to the tumor and prevented it torn apart.