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Reconstructive

Laparoscopically Assisted Transperineal Approach in the Management of a Giant Pelvic Lipoma

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Summary: Giant lipomas affecting the retroperitoneum and pelvis are quite rare. The surgical management of these lesions may be technically demanding and controversies exist with respect to diagnosis, competences being involved, type of surgical approach, radicality, and timing. A unique case presentation of a giant lipoma occupying the whole pelvis and the gluteal region is presented. Due to its size, many anatomical areas are involved, requiring the expertise of multiple specialists to treat. After multidisciplinary counseling, the lesion is radically resected in one stage by using a new videolaparoscopically assisted transperineal access to the pelvis. This type of surgical approach may be of interest for resecting pelvic tumors in women and men. *(Plast Reconstr Surg Glob Open 2020;8:e3065; doi: 10.1097/GOX.0000000000003065; Published online 23 September 2020.)*

INTRODUCTION

Lipomas, composed of mature adipocytes, are benign tumors and represent the most frequent mesenchymal neoplasia.[1] They unfrequently affect the retroperitoneum, and when it happens, they attain considerable dimensions due to their unhurried slow and progressive enlargement. For this reason, retroperitoneal lipomas are usually asymptomatic for a long time, before they determine abdominal swelling or symptoms related to obstruction or shifting of adjacent organs and anatomical structures.[2]

While large retroperitoneal lipomas are rare by themselves, and only few reports are present in the literature, even fewer cases of both intra and extra-pelvic lipomas have been described.[1,3–5]

By definition, giant lipomas are at least 10 cm in diameter, or weigh a minimum of 1000 g.[6]

We present the case of a patient with a giant retroperitoneal lipoma occupying the entire pelvis, protruding to the right buttock and thigh through the pelvic floor, and causing intestinal and urinary symptoms. A single-stage combined laparoscopic and transperineal surgical approach was undertaken to manage this unique case.

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CASE REPORT

A 50-year-old woman presented with a 3-year history of a progressive expanding, unreducible, and non-painful right buttock mass. The patient reported a 6-month pollakiuria, a 2-month incontinence, and rare episodes of urgent urination. She denied vomiting and weight loss, but reported a slight alteration of her intestinal habits toward constipation.

On examination, the patient looked well-nourished and the abdomen was soft without palpable masses or signs of peritonitis. Digital rectal examination was not significant. A vague-bordered large mass with mild tenderness was palpable on her right gluteal region, without any neurologic abnormalities involving her back and right lower extremity. Routine laboratory investigations were normal. Ultrasonography of the right gluteal region showed a hyperechogenic mass measuring 120 × 100 mm^2 located underneath the right gluteus-maximus muscle.

The CT angiography revealed the presence of a well-defined poly-lobed mass, measuring 206 × 180 × 127 mm^3, occupying the pelvis and extended to the right buttock through the pelvic floor across the anterior fibers of the levator-ani. The tumor was homogeneously iso-intense with fat. Invasion of neurovascular structures, including iliac, gluteal, obturatory, was not reported.

The MRI scan findings demonstrated that the lesion was not only a submuscular lipoma, but a giant well-defined right gluteal fatty mass, extended to the pelvis and the retroperitoneum, shaped as a "hourglass" (Fig. 1). The lesion was passing across the anterior fibers of the levator ani, entering

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Fig. 1. MRI image showing the adipose mass occupying the pelvis and displacing rectus, uterus, bladder, and vagina.

the retroperitoneum and causing compression and dislocation of several pelvis organs. The bladder, uterus, and vagina were pushed anteriorly, while the sigmoid colon, rectum, and anus were displaced to the left. The mass did not present enhancement after contrast administration. Again, the tumor appeared homogeneously iso-intense with fat. Apart from its huge size and deep location, there were no other radiological signs of harm.

A preoperative ultrasound-guided needle-biopsy was performed under local anesthesia to confirm the diagnosis of atypical giant lipoma.

Still, a multidisciplinary counseling (including gynecologists, urologists, general surgeons, and our sarcoma team) was performed, to definitely deny the hypothesis of a malignant tumor. Only after this counseling, the patient was scheduled for surgery. A surgical planning was thus devised, and this included a combined double approach: abdominal laparoscopic and transperineal.

Ureteral stents were inserted bilaterally by the urologist at the onset of the operation for protection. The patient was then placed in a Trendelenburg 25 degree gynecological position (Fig. 2), to achieve adequate exposure. The laparoscopic approach performed by the urology team allowed for isolation of the right ureter in its pelvic tract to avoid iatrogenic damage (**See Video 1 [online]**, which displays the videolaparoscopic view of the uterus and fallopian tube for ureter isolation. The giant lipoma is visible underneath the peritoneum superiorly on the left) (**See Video 2 [online]**, which displays the details of the right ureter isolation). The left ureter turned out to be not in strict contact with the giant lipoma and therefore was not skeletonized.

A curvilinear-incision was performed, and a triangular-shaped lateral full thickness soft-tissue flap was raised over the palpable mass. The lump occupied and subverted the right crural fossa and the muscular perineal plane appeared completely dislocated, thinned, and degenerated. The mass was progressively detached cranially from the surrounding tissues, including sciatic-nerve, vagina, and rectum, after insertion of a rectal-probe. After capsular incision, the pelvic part of the tumor was bluntly dissected as long as fingers reached through the muscular hole, performing a careful caudal traction. Despite the use of light-retractors, the vision was compelled and inadequate from the perineal approach. Still tumor removal was performed through the perineal wound, with a total weight of 1300 g (Fig. 3) (**See Video 3 [online]**, which displays the giant adipose mass is being removed through the transperineal access.)

To close the lower access, the muscle flap composed by the levator-ani was sutured, and an adipo-fascial reinforcement flap was placed to further strengthen the pelvic floor (Fig. 4). In so doing, the use of prosthetic-mesh was avoided.

Fig. 2. Preoperative view of the patient showing the tumor involving the right gluteal region.

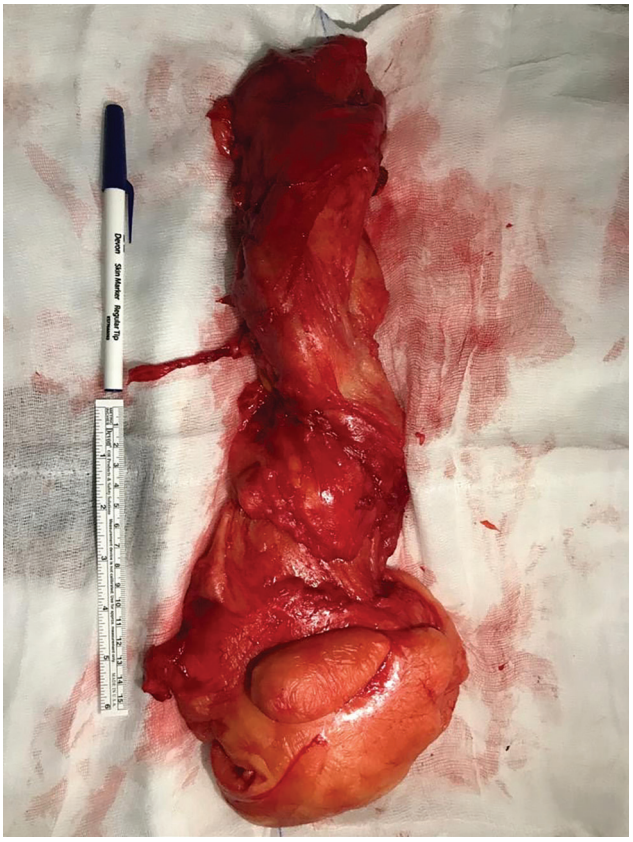

Fig. 3. Image of a 40 cm × 15 cm giant adipose tumor after resection.

Final histopathological examination reported no signs of malignancy.

Canalization occurred in postoperative day 2, and the patient was discharged on the 7th postoperative day. The postoperative course at home was uneventful. All urinary symptoms improved immediately after surgery, and the patient was sent to a pelvic-floor rehabilitation protocol. At 2 months follow-up, abdominal and transvaginal ultrasound revealed no free fluid collection, no tumor recurrence, and proper repositioning of all pelvic organs that were previously displaced. At 6 months follow-up the patient showed no local recurrence and no local signs of herniation of abdominal structures through the pelvic floor (Fig. 5).

DISCUSSION

Superficial lipomas are very commonly benign adipose-tissue tumors.[7] In contrast, deep located lipomas are rare and must be distinguished from well-differentiated liposarcomas for specific treatment and follow-up.[8]

Retroperitoneal lipomas are usually asymptomatic for a long time, before they cause abdominal swelling or symptoms due to obstruction or shifting of adjacent organs and structures. At this point, they may have already reached an enormous size, like in our case.[2]

There are usually no laboratory abnormalities, and the US, CT-scan, and MRI enable the differentiation between benign and malignant tumors. Their characteristic imaging findings are thus crucial to distinguish fatty tumors such as lipomas or liposarcomas. Also, they can provide enough data for surgical planning. Histopathologic examination, however, is necessary to exclude liposarcoma.[9,10]

The goal-treatment of these giant lipomas is radical resection.

In our case, the mass occupied both the inside and outside of the pelvic cavity, and we could not clarify whether its primary site was the pelvic cavity or the right buttock.

The preoperative discussion in this case focused on strategies for approaching dissection of the tumor. A laparoscopic abdominal access to the pelvis was required, because the mass occupied most of the pelvis. At the same time, it was necessary to approach the right perineal region, to dissect the large part of the tumor localized there.

The laparoscopic approach allowed us to visualize and, thus, detach the mass from any adhesions that anchored the lipoma to the intra-pelvic anatomical structures. Interestingly, the laparoscopic abdominal approach supported a lot the visualization process, but was not useful for the operative dissection below the peritoneum. At the same time, the dissection of the lower portion of the tumor was performed by plastic surgeons. After that, it was possible to remove the whole mass through the pelvic floor, having vision supported by laparoscopy.

As described in the literature, giant retroperitoneal lipomas were treated with different approaches, which

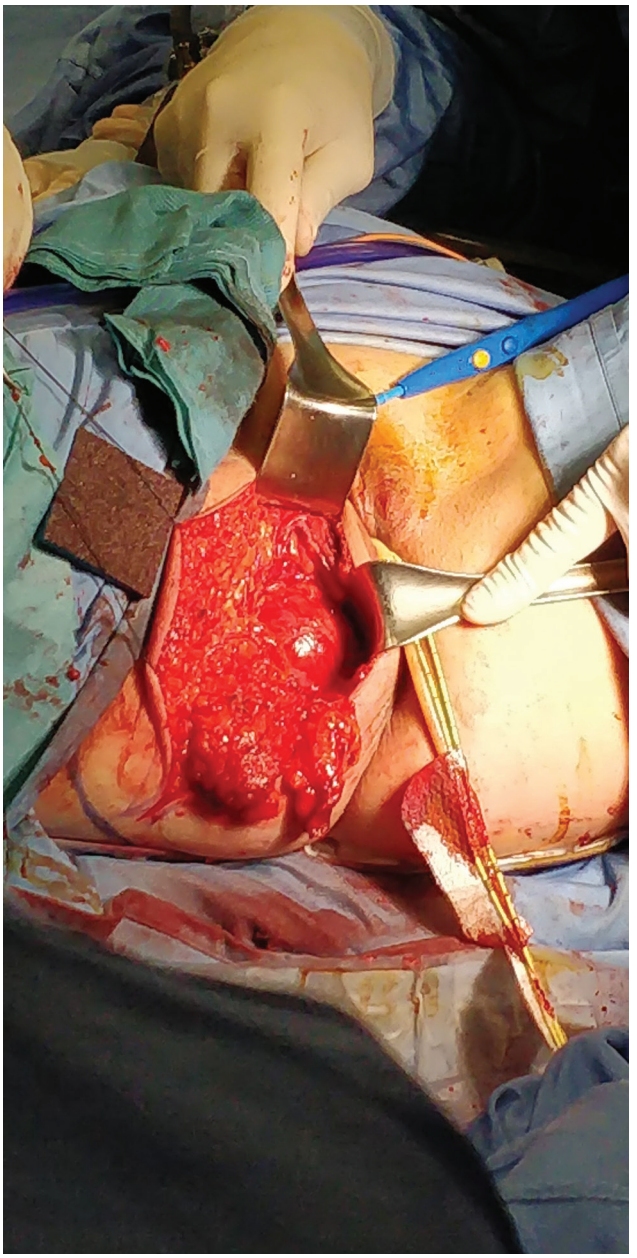

Fig. 4. Isolation of the adipofascial flap for pelvic-floor reinforcement after tumor resection.

included an open surgical procedure, such as exploratory laparotomy,[2] as well as a transgluteal[11] and parasacral[3] approaches. Laparoscopy is often the first choice with respect to addressing any pelvic mass.[12,13] Combined and asynchronous approaches are also described.[5,14]

A double and simultaneous surgical access, such as the one we have suggested, seems to have never been used. This allowed an en-bloc radical resection of the tumor.

A defect in the pelvic-floor remained after tumor resection. To prevent herniation of abdominal anatomic structures through the pelvic-floor, a muscle flap[15,16] composed of the levator-ani was sutured, and an adipo-fascial reinforcement flap was placed under it. In this way, the use of prosthetic mesh became unnecessary.

Fig. 5. Postoperative view at 6 months, showing no evidence of local recurrence or bulging.

CONCLUSIONS

We report a unique case of a giant-lipoma that was localized in the retroperitoneum and right buttock, passing through the anterior fibers of levator-ani.

A new synchronous abdomino-perineal laparoscopically assisted approach was advantageous to manage the resection "en-bloc" of the mass in one single stage.

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