OBJECTIVE: To describe a case of renal angiomyolipoma treated by robotic assisted surgery.

METHOD AND RESULTS: We report the case of a 26 year old females patient, in the context of third month pregnancy, who was diagnosed of spontaneous self-limited retroperitoneal hemorrhage due to renal angiomyolipoma. The patient was treated conservatively until normal delivery.

CONCLUSION: Despite being a benign tumor, there are cases in which the renal angiomyolipoma requires surgical treatment. To our knowledge, after a thorough review of the literature, this would be the first reported case of angiomyolipoma treated with conservative surgery with robotic assistance (Da Vinci S-HD).

Keywords: Angiomyolipoma. Partial nephrectomy. Laparoscopic surgery. Robotic surgery.

INTRODUCTION

Angiomyolipoma is a benign mesenchymal tumor composed of variable proportions of adipose tissue, smooth muscle cells and abnormal blood vessels with thick walls. It is four times more common in women, and can also be associated with the syndrome of Tuberous Sclerosis. Is frequently associated with spontaneous retroperitoneal bleeding and represents approximately 1% of all kidney tumors (1). Its main complication is retroperitoneal bleeding that can endanger life (2).

Prophylactic intervention is justified in cases of: large tumors (the recommended threshold for intervention is ≥ 4 cm in diameter (1-3), women of childbearing age and in patients in whom follow-up or access to emergency care can be inadequate (2).

Conservative surgery (partial nephrectomy) for renal masses of any type has shown similar results that radical surgery (4,5).
We present a case of renal angiomyolipoma treated with nephron-sparing robotic assisted surgery.

MATERIAL AND METHODS

A 26 years old patient, with no history of interest, except for a right renal angiomyolipoma 2.5 cm in diameter incidentally diagnosed five years ago. Visited the emergency department with right abdominal and lumbar pain in the context of a third month of pregnancy. A magnetic resonance (MRI) was performed, showing a lesion in the middle third of the right kidney, expansive, exophytic, solid, heterogeneous, intensity predominantly like fat, which presents a major enhancement in signal on T1-weighted sequences were phase and especially in the FAT SAT sequences, measuring 8 x 3 x 5 cm, compatible with renal angiomyolipoma. Halo is observed perirenal fluid compatible with bleeding (Figure 1). It was decided to perform a conservative treatment with active surveillance until delivery. At the 3rd month after normal delivery another MRI was performed showing no changes in the renal mass (Figure 2). It was decided to perform a partial nephrectomy assisted by the Da Vinci robot.

SURGICAL TECHNIQUE

In the left lateral position was made pneumoperitoneum with Veress needle, we introduced the trocars for robotic surgery as the standard technique (Figure 3). Then we proceed to the release of the ascending colon and opening of the fascia Toldt. We identified the duodenum (Kocher maneuver) and vena cava. Isolate the ureter and gonadal vein, which continues to head up until identify the renal pedicle, artery and vein were dissected. Rummel handles (6) are placed on renal artery and vein to further dissect the kidney from the lateral side. Tumor was identified, it was approximately 8 cm. At this point is the renal clamping to continue excising the lesion with wide margin. Calyces are repaired (monocryl © 3 / 0), continuing with hemostatic suture bed (monocryl © 3 / 0) and close it (vicryl © 2 / 0) on Hem-O-Lok © by technique described by Badlani. The warm ischemia time was 25 minutes, showing no active bleeding. Finally it is placed in the bed, hemostatic material (Surgycel © and Surgyflo ©). Piece is removed Endocatch ©, Pfannenstiel incision, after installation of Jackson-Pratt drain. The total time

FIGURE 1. MRI on the third month of pregnancy showing an expansive lesion, solid, heterogeneous, with predominantly intensity like fat. It is located in the middle third of the right kidney. It measures are 8 x 5 cm and there is a discrete quantity of liquid sheet in the external aspect of the mass.

FIGURE 2. MRI on the third month postpartum, which shows an exophytic mass in the middle third of right kidney, predominantly fat intensity, which size is 6 x 5 cm (maintains its size compared to the prior).

FIGURE 3. Ports placement for robotic right partial nephrectomy.
of surgery was 121 minutes divided in: trocars time 12 min, 9 min coupling time and console time was 110 min. The intraoperative blood loss was 150 ml.

RESULTS

The patient developed well, being discharged on the third postoperative day without this incident.

The pathology described, a tumor mass ovoid, yellowish, about 11.5 x 7.5 x 3.5 cm, provided largely by a thin conjunctive capsule. On section shows a heterogeneous structure, mainly fat, with scattered white areas, firmer, somewhat fasciculate, forming tracts or arranged in nodular areas. The tumor-free renal portion covers an area of 5.8 x 4 cm and a thickness to 1.3 cm (Figure 4). All these findings are consistent with renal angiomyolipoma.

DISCUSSION

Most cases of angiomyolipoma can be managed by conservative approaches, but some selected cases require more radical attitudes. [2] Although there are other surgical techniques such as selective arterial embolization and radiofrequency ablation [7], which are effective in controlling bleeding in the acute phase, these techniques have limited value in the long-term management of angiomyolipoma [7], which, in selected cases, radical or partial nephrectomy are techniques of choice [7].

In experienced hands and patients selected, the robot-assisted partial nephrectomy is an alternative to traditional surgery. The best indication for laparoscopic nephron-sparing surgery is that the mass is relatively small and that the tumor is peripheral.

Although robotic-assisted partial nephrectomy is a novel technique that is undergoing evaluation [8-9], there are currently some studies which show that this technique is a safe and viable alternative to laparoscopic partial nephrectomy, providing equivalent results and cancer morbidity [8-10]. The costs and the need for two experienced laparoscopic surgeons are the disadvantages of robotic surgery [8]. Therefore larger randomized studies are needed to evaluate whether robot-assisted partial nephrectomy has advantages over traditional laparoscopic surgery [10].

CONCLUSION

Renal angiomyolipoma, though a benign disease, in selected cases requires surgical treatment of the mass, with nephron sparing surgery, the technique of choice in these cases.

The robot-assisted partial nephrectomy is an emerging technique, which is still in trial period, although recent studies show that the results are similar to those obtained by standard techniques. For this reason we believe that in centers where this technique is available, can be an interesting alternative for the treatment of these tumors.

REFERENCES AND RECOMMENDED READINGS

(*of special interest, **of outstanding interest)


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**Summary.**

**OBJECTIVE:** Bladder injuries are quite rare and complex complications of transobturator tapes in the treatment of female stress urinary incontinence, with very few published cases. The authors present a case report and discuss possible injury mechanisms and the role of cystoscopy in this setting.

**METHODS:** A 51 year-old female with past surgical history of Burch colposuspension underwent an uneventful transobturator tape surgery. After 15 days, she complained of dysuria and frequency. Cystoscopy revealed the tape protruding within the bladder.

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