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Background

- Few studies report on robotic surgery during pregnancy outside of cerclages or ectopic pregnancies.
- Here, we present a case of robotic adrenalectomy performed in the second trimester (19 weeks GA) for a functional adrenal adenoma.
- Adrenal masses in pregnancy pose unique issues in both diagnosis and timing of surgical intervention.

Case Summary

- 33 year old G6P3023 at 6 weeks gestation with worsening hypertension, was found to have a 4.2 cm right adrenal incidentaloma on CT imaging.
- Resection recommended for adrenal adenomas >4 cm due to potential malignancy.
- Patient had a history of hypertension on 2 medications prior to pregnancy. Blood pressure continued to rise during pregnancy (max SBP 160) requiring more Bp control.
- After biochemical workup, the patient was thought to have subclinical Cushing syndrome.
- At 19 weeks, the patient underwent an uncomplicated right robotic adrenalectomy. Pathology report showed adrenocortical adenoma.
- After surgery, blood pressure normalized and antihypertensives were stopped 4 weeks post-op.
- At 39 weeks, the patient had Cesarean delivery for failure to progress and delivered a healthy neonate.
- On POD3, patient was diagnosed with preeclampsia with severe features by Bp criteria.



Figure 1: CT scan identifying a 4.2 cm right adrenal incidentaloma with heterogeneously attenuating lesions and punctate calcifications diagnosed at hospital admission for pyelonephritis (prior to pregnancy).

Robotic adrenalectomy is a feasible surgical alternative in the second trimester and can reverse the hypertensive disease and its associated maternal-fetal complications



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Case Summary (cont.)

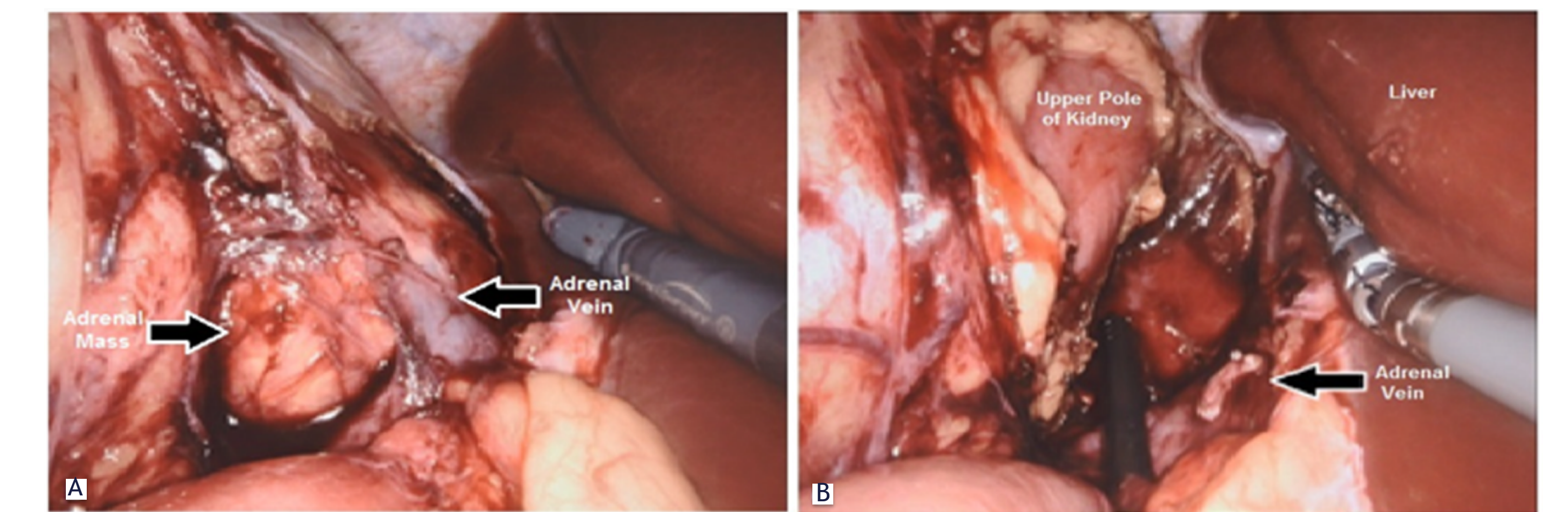


Figure 2: Robotic adrenalectomy at 19 weeks, **A.** Adrenal mass identified with isolation of the adrenal vein **B.** Adrenal fossa after resection showing clipped adrenal vein (arrow), upper pole of kidney, liver, inferior vena cava and duodenum.

Table 1: Literature review of robotic adrenal surgery in pregnancy

| Author | Age | G&P | Robotic procedure type | Gestational age at surgery | Duration | EBL | Discharge | Final pathology | Fetal outcomes |
|-----------------|-----|------|------------------------|----------------------------|----------|--------|-----------|-------------------------------|---|
| Capella (2019) | 33 | G6P3 | Right adrenalectomy | 19 wks | 118 min | 50 cc | POD1 | Adrenocortical adenoma | Cesarean delivery after failure of induction at 39 wks, healthy neonate, birth weight 2800 g; Apgar 8-9, POD3 preeclampsia with severe features |
| Nassi (2015) | 26 | NR | Right adrenalectomy | 21 wks | NR | NR | NR | Benign adrenocortical adenoma | Scheduled cesarean delivery at 36 wks, healthy neonate, birth weight 2550 g; normal Apgar |
| Podolsky (2010) | 34 | G1P0 | Right adrenalectomy | 21 wks | 270 min | 350 cc | POD4 | Benign pheochromocytoma | Cesarean section after failed induction for oligohydramnios at 39 weeks, healthy neonate |

NR, not reported, POD, post-op day, wks, weeks

Conclusion

- Robotic adrenalectomy can be a surgical alternative in second trimester pregnant patients in the hands of a competent robotic surgeon.
- Treatment of the adrenal adenoma during the pregnancy reversed the hypertensive disease and its maternal-fetal complications.
- A multidisciplinary team approach (maternal-fetal medicine, endocrinology and urology) is pivotal for delivery of best patient care.