Robotic Adrenalectomy for Functional Adenoma in Second Trimester Treats Worsening Hypertension

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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 G6P3 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.

Table 1: Literature review of robotic adrenal surgery in pregnancy

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

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.