Laparoscopic Left Adrenalectomy 177

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Indications

- Aldosteronoma
- Cortisol-secreting adenoma (Cushing's syndrome)
- Pheochromocytoma (sporadic or familial)
- Virilizing or feminizing tumors
- Incidentaloma (>4 cm in size)
- Solitary adrenal metastasis

Essential Steps

1. Optimize the patients medically (e.g., correct electrolyte abnormalities, control hypertension, preoperative alpha-blockade in pheochromocytoma, stress steroids in Cushing's disease. Prophylactic Pneumovax administration is recommended in reoperative cases).
2. Position the patient in the full left lateral decubitus position with appropriate padding.
3. Establish pneumoperitoneum and place trocars along subcostal margin.
4. Explore the abdomen.
5. Mobilize the splenic flexure of the colon.
6. Medially mobilize the spleen and tail of pancreas.
7. Dissect retroperitoneal structures including Gerota's fascia, left renal hilum, and paraaortic space.
8. Identify, secure, and divide the left adrenal vein.
9. Dissect all the left suprarenal tissues, including the left adrenal gland, and resect the retroperitoneal fat en bloc from the superior pole of the left kidney to the diaphragm.

Complications

- Tumor rupture with spillage and seeding
- Bleeding from large raw surface in the retroperitoneum or from accessory lumbar veins
- Left diaphragmatic injury leading to pneumothorax
- Splenic injury requiring splenectomy
- Distal pancreatic injury
- Injury to renal hilar vessels
- Gastric perforation during spleno-pancreatic mobilization
- Missed bowel injury

Template Operative Dictation

Preoperative Diagnosis List specific pathology indicating surgery (*see indications above*), e.g., *pheochromocytoma of the left adrenal gland*.

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Procedure Laparoscopic left adrenalectomy

Postoperative Diagnosis List specific intraoperative findings, e.g., *pheochromocytoma of the left adrenal gland*.

Indications This ___-year-old *male/female* patient was found to have a left adrenal _____. Preoperative biochemical workup showed evidence of (*list specific hormonal activity if present*). Imaging confirmed a ___ cm left adrenal lesion. The patient underwent preoperative preparation and is now presenting for elective laparoscopic left adrenalectomy. The indications, alternatives, and risks and benefits of the surgery were discussed with the patient and informed consent was obtained.

Details of Operation The patient was brought to the operating room and placed on the operating table in the supine position. Time-outs were performed using both preinduction and pre-incision safety checklist to verify correct patient, procedure, site, and additional critical information prior to beginning the procedure. Intravenous antibiotic and subcutaneous heparin were administered. After induction of general endotracheal anesthesia, a Foley catheter was inserted. The abdomen was prepped in the usual sterile fashion. The patient was then positioned in the full left lateral decubitus position with appropriate padding.

The abdomen was approached under direct vision using optical 10-mm trocar and pneumoperitoneum was induced. The first (10 mm) trocar was placed at the mid-level of the subcostal margin on the left side. Two additional 5-mm trocars were placed at the level of the costal margin, 8–10 cm away to the right and left of the camera port. The third 5-mm trocar was placed at the level of the mid-axillary or posterior axillary line for the assistant's use. Exploration of the abdominal cavity was carried out followed by mobilization of the splenic flexure of the colon by incising the white line of Toldt, facilitated by the left lateral decubitus position.

The attention was turned toward the mobilization of the spleen. The splenorenal and retroperitoneal attachments of the spleen were divided with electrocautery or an appropriate energy device. This incision of the peritoneum was carried out to the level of the left diaphragm allowing visualization of the fundus of the stomach. Facilitated by the effect of gravity and the weight of the spleen, the spleen and tail of the pancreas were then rotated medially by gentle dissection of the loose areolar space between the pancreas and the retroperitoneum. Care was taken to avoid injury to the splenic vein during the course of this dissection.

At this point, the suprarenal tissue and its contents (adrenal gland and retroperitoneal fat) were visible. Gerota's fascia, the upper border of the left kidney, and the left renal hilum were then identified and dissected. Dissection of the left renal vein and its upper border led to the identification of the left adrenal vein which was dissected and divided using *a clip or energy device*. The dissection was then carried out along the medial aspect of the adrenal gland down to the level of the quadratus lumborum muscle in the retroperitoneum indicating complete removal of all the fat in the suprarenal space. *An accessory adrenal vein running along the medial aspect of the gland and draining into the phrenic vein was encountered and divided*. Using *electrocautery/energy device*, the retroperitoneal fat of the left suprarenal space was elevated off the superior pole of the left kidney. The dissection of all the suprarenal tissue was then completed in a stepwise fashion. The arterial supply of the left adrenal gland was controlled and divided as it was encountered along this dissection until the gland and its surrounding tissues were completely mobilized.

Irrigation of the operative bed was then carried with the confirmation of hemostasis. The adrenal gland and all surrounding fat were then placed in a specimen retrieval bag and extracted after enlarging the 10-mm port via a muscle-splitting incision. The extraction site was then sutured closed in layers using an 0 PDS/ ___ stitch. Re-insufflation of the abdominal cavity was then carried out and hemostasis was confirmed. The trocars were removed under direct vision, and the fascia was closed on all trocar sites >10 mm using ___ suture. The skin was closed with 4-0 Monocryl. The patient tolerated the procedure well. There were no complications and blood loss was minimal. Instrument and sponge count was correct. A debriefing checklist was completed to share information critical to postoperative care of the patient. The patient was extubated and returned to the postanesthesia care unit in stable condition.