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VIDEO

Laparoscopic bilateral cortical-sparing adrenalectomy for pheochromocytoma

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Abstract
Introduction Since laparoscopic adrenalectomy for pheochromocytoma was reported in 1992, the laparoscopic technique has largely replaced the open approach [4]. Numerous studies have demonstrated that the laparoscopic approach is associated with decreased blood loss, shorter hospitalization, faster recovery, and lower cost [1]. Conversion rates are reported at less than 5.5 %, yet concern still exists that intraoperative hypertensive crisis may be more severe with laparoscopy due to increased intraabdominal pressure [3]. Bilateral pheochromocytomas are common in patients with multiple endocrine neoplasia type 2 (MEN 2) or von Hippel-Lindau (VHL) disease. Total adrenalectomy commits the patient to lifelong steroid hormone replacement and the risk of Addisonian crisis after bilateral adrenalectomy [5, 8]. The risk of malignant pheochromocytomas in patients with or without MEN 2 or VHL is low. The current literature supports cortical-sparing adrenalectomy in patients with bilateral pheochromocytomas [2, 7, 10]. This video presents a patient with bilateral pheochromocytomas who underwent bilateral laparoscopic cortical-sparing adrenalectomies.

Methods A 40-year-old female presented to her primary care physician with a history of a hypertensive crisis that required an emergent cesarean section. Her workup revealed elevated urinary metanephrines, and a CT scan showed a left adrenal lesion measuring 3.9 cm and a right adrenal lesion measuring 2.7 cm. After undergoing alpha blockade, she was consented for bilateral partial adrenalectomies. A left partial adrenalectomy was performed first using four ports. The ports were then closed and the patient was repositioned in a left lateral decubitus position for a subsequent right partial adrenalectomy.
Results The patient had an uncomplicated hospital course and was discharged home on postoperative day 4. She returned for follow-up at 2 weeks and 1 month and had returned to her normal activities. Testing for MEN and von Hippel-Lindau was both negative. Her electrolyte and cortisol levels normalized, and she was weaned off her postoperative steroids by week five. At 1-year follow-up, she remains off steroids and no longer requires anti-hypertensive medications.
Conclusion Laparoscopic adrenalectomy is the gold standard for removal of benign lesions of the adrenal gland. Bilateral pheochromocytomas are more common in the presence of hereditary conditions such as MEN and von Hippel-Lindau and should be ruled out [8, 10]. The risk of Addisonian crisis and lifelong steroid replacement should prompt cortical preservation with bilateral disease [9]. Laparoscopic bilateral partial adrenalectomies should be considered in patients with bilateral pheochromocytomas [6]. Finally, all patients undergoing pheochromocytoma excision require lifelong follow-up to monitor for recurrence.

Keywords Pheochromocytoma · Bilateral · Laparoscopic · Cortical-sparing

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