

**ADRENOCORTICAL CARCINOMA (ACC) –  
HAS TECHNOLOGY CLOUDED CLINICAL JUDGEMENT?**

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**QUESTION:**

Should patients with proven or suspected ACC be treated by laparoscopic adrenalectomy?

**CLINICAL ASPECTS:**

A 51-year-old male developed progressively recalcitrant hypertension. Evaluation revealed a serum potassium level of 1.8 mEq/L (normal: 3.6-4.8), a urinary aldosterone of 26  $\mu$ g/spec (normal: 2-16)  $\mu$ g/spec with a concomitant serum renin value of 0.3 ng/ml/h (normal: 0.6-3.0) and a 5.0 cm left adrenal mass (incidentaloma) (Figure 1). With a preoperative diagnosis of hyperaldosteronism, secondary to an adrenocortical adenoma, laparoscopic adrenalectomy was advised and performed.



Fig. 1: Magnetic resonance image (MRI) demonstrating solid left adrenal mass.

The operation was complicated by difficulty in identification of the adrenal gland, inadvertent injury to the tail of the pancreas, and morcellation of the tumor. The patient's

postoperative course was prolonged due to the development of pancreatitis with slow resolution (Figures 2A and 2B).

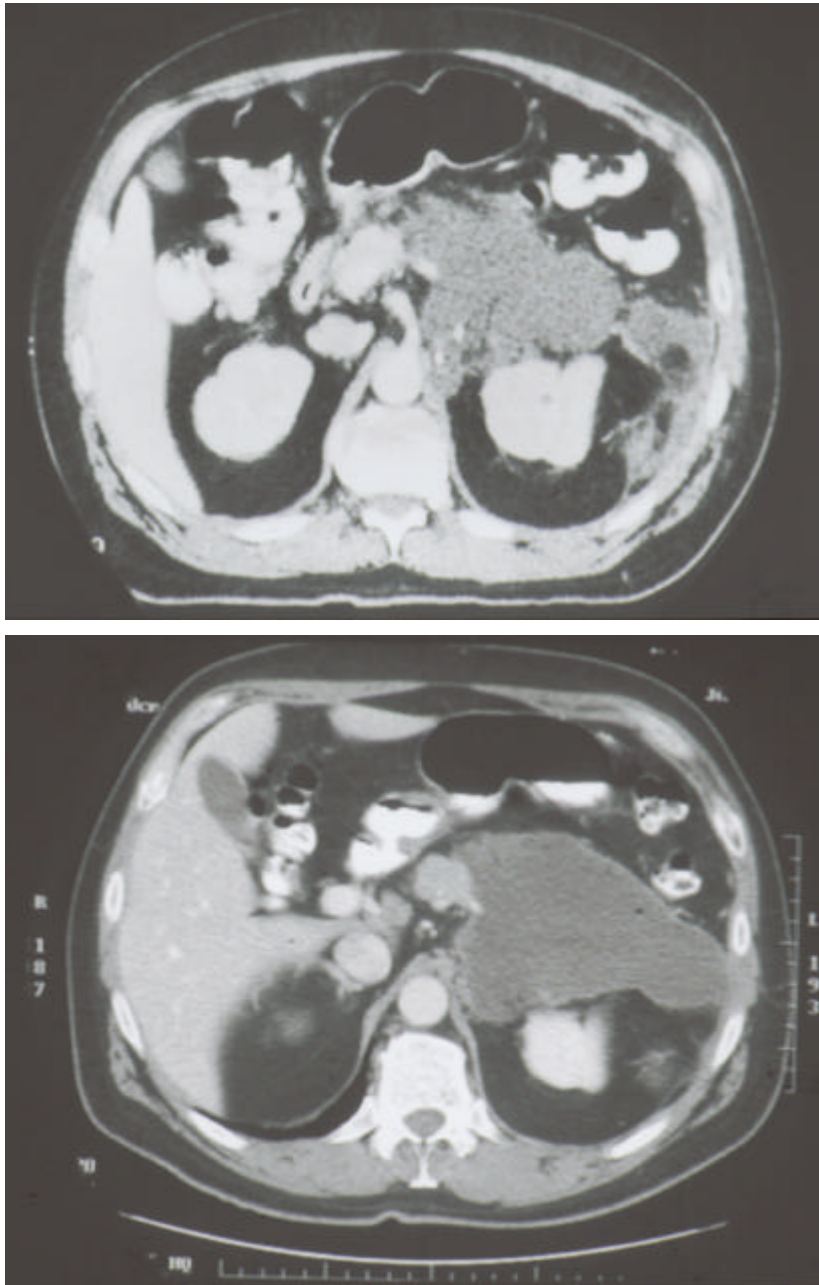


Fig. 2: Computed tomographic scan of the abdomen compatible with severe pancreatitis (A) with slow resolution over a four-month period (B).

Histology was compatible with a low-grade ACC with vascular invasion.

One year later, the patient again became hypertensive. His urinary aldosterone level was elevated to 27 (normal: 2-16)  $\mu\text{g}/\text{spec}$  and a computerized tomogram of the abdomen strongly suggested recurrent disease (Figure 3). At repeat laparotomy, abdominal carcinomatosis with multiple port-site recurrences were encountered (Figure 4).



Fig. 3: Computed tomographic of the upper abdomen suggesting multiple sites of recurrence.

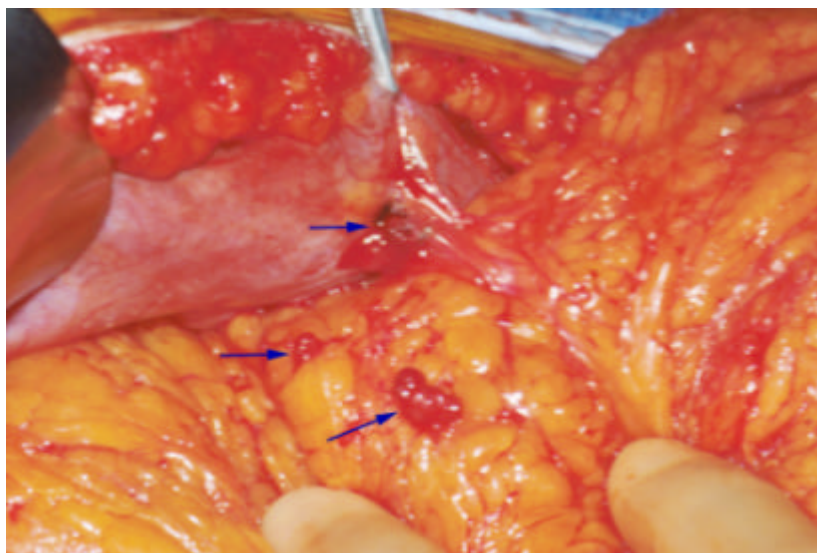


Fig. 4: View at laparotomy confirming peritoneal carcinomatosis with port site recurrences.

The patient was started on low-dose mitotane and antihypertensive medications.

## **DATA SUMMARY**

The lessons learned here are many and are sobering. Most patients who have hyperaldosteronism due to an adrenocortical adenoma have tumors that are ~ 1.5 cm in diameter. The finding of an ~ 5.0 cm tumor causing hyperaldosteronism was indicative of a malignant process. With this suspicion, the procedure of choice is an open adrenalectomy, avoiding excessive tumor manipulation and tumor rupture, in particular.

Although laparoscopic adrenalectomy can be performed for adrenal tumors up to 8-10 cm in diameter, this thought (i.e. type of surgical approach) should not be an option if ACC is in the preoperative differential diagnosis. Sufficient data is being accumulated worldwide to substantiate this surgical philosophy.

## **ANSWER:**

The answer is an unequivocal “no!” The availability of technology, which is often patient driven, and is fueled by “surgical machoism” should never violate the time-honored and well-tested principles that apply to both the indications for an operation and the conduct of the procedure per se.

## **REFERENCES**

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- Kendrick ML, Lloyd R, Erickson L, Farley DR, Grant CS, Thompson GB, Rowland C, Young WF Jr, van Heerden JA. Adrenocortical carcinoma: Surgical progress or status quo? *Arch Surg* 2001

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“We physicians should not treat those  
‘who are mastered by their disease’”

Hippocrates