

MEDICAL ILLUSTRATION

Cushing's Syndrome: A Large Adenoma of Adrenal Gland

**M. Adi Soedarso¹, K. Hery Nugroho², Erik Prabowo¹, Devia E. Listiana³,
Danu Soesilowati⁴, A. Gunawan Santoso⁵**

¹ Department of Surgery, Faculty of Medicine, Diponegoro University - Dr. Kariadi Hospital, Semarang, Indonesia.

² Department of Internal Medicine, Faculty of Medicine, Diponegoro University - Dr. Kariadi Hospital, Semarang, Indonesia.

³ Department of Radiology, Faculty of Medicine, Diponegoro University - Dr. Kariadi Hospital, Semarang, Indonesia.

⁴ Department of Pathology Anatomy, Faculty of Medicine, Diponegoro University - Dr. Kariadi Hospital, Semarang, Indonesia.

⁵ Department of Anesthesia, Faculty of Medicine, Diponegoro University - Dr. Kariadi Hospital, Semarang, Indonesia.

Corresponding Author:

M. Adi Soedarso, MD. Division of Urology, Department of Surgery, Faculty of Medicine, Diponegoro University - Dr. Kariadi Hospital. Jl. dr. Soetomo no. 16, Semarang, Indonesia. email: drsoedarso@gmail.com.

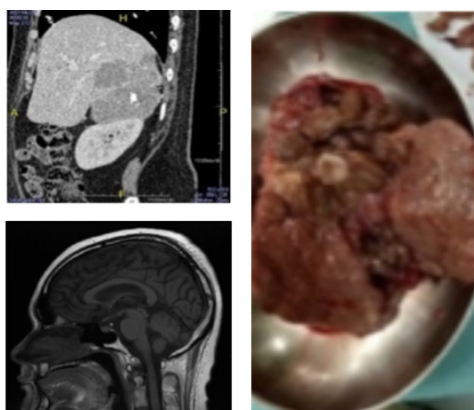


Figure 1. MSCT noted large adenoma, MRI hypothalamus hypophyse normal. Large resected adrenal compare with large kidney basin (right).

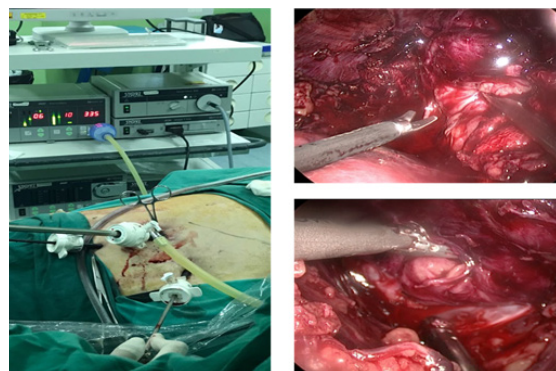


Figure 2. Left: trocar optic, working element. Right, laparoscopic view.

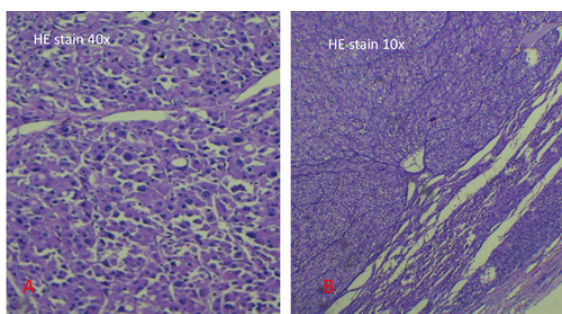


Figure 3. A). Proliferation of polygonal cells with oval round, clear cytoplasm to eosinophilic, normochromatic, prominent nucleoli. No visible mitosis or malignant signs. B). No visible infiltration to the capsule, angioinvasion.



Figure 4. striae in abdomen, axilla thins. Noted removal site and trocar scar

Adrenal adenomas are found in approximately 10-15% of cases of Cushing's syndrome.¹ It can be either ACTH-dependent (pituitary adenoma or ACTH independent (extra pituitary adenoma). Multidisciplinary approach: endocrine manipulation, surgery, specific anesthetic procedure is needed in management of this case.^{2,3}

A 20-year old man was admitted for evaluation of Cushing's syndrome. He presented with a history of headache, fatigue, mood disorder, hypertension (Blood Pressure 170/120 mmHg), moon face, buffalo hump, striae rubrae. Cortisol serum laboratory increased 33.53 µgr/dl (Normal range: 3.09 – 16.6µgr/dl). Abdominal CT Scan showed a right adrenal mass diameter 10.53 x 6.83 cm, with calcified and necrotized area.

Levels of ACTH < 5 pg/ml (Normal range : 6 – 50 pg/ml), absence hypothalamus pituitary defect in brain MRI angiography lead the primary site on adrenal.

Patient was given ketoconazole 600 mg daily to treat hypercortisolemia. The patient underwent laparoscopic right adrenalectomy. Preparation of hydrocortisone 100 mg during anesthesia-surgery to prevent occurrence of adrenal crisis.

Patient position was LLD, 11 mm trocar port with 0, 30 degree optic, 2 port 5mm was used for working element. Harmonic ultrasoundshear was used for dissection, hemoLock clip to control vascular. Right subcostal incision make to remove adrenal gland. EBL 1000 cc, close monitoring in ICU ward.

Hydrocortison was continued 5 days after surgery. Ventilatory support removed in 2 day after surgery. On the fifth day condition stable without signs of adrenal crisis, and the patient sent to elective ward. The pathology report revealed a cushing adenoma of adrenal gland.

On the fifth day after surgical intervention, postoperative cortisol levels at 12 µgr/dl. On seventh day, surgical wound healing was well with minimum dose NSAID orally. Striae thinning, ginecomastia, buffalo neck, moon face was reduced.

The patient was regularly followed up at Endocrine division, Department of Internal medicine. Moon face have been eliminated, no striae and good mood condition. Blood pressure was 130/ 70 mmHg (without antihypertensive drugs) and cortisol serum was 4.52 µgr/dL and independent from steroid medication.

Multidisciplinary approach including endocrine treatment, prevention adrenal crisis and laparoscopic adrenalectomy procedure have good result for Cushing's syndrome due to adenoma of adrenal gland.

REFERENCES

1. Nieman LK, Bilier BM, Finding JW. The diagnosis of Cushing's syndrome: an endocrine society clinical practice guideline. *J Clin Endocrinol Metab.* 2008; 93:1526-40.
2. Castinetti F, Guignat L, Giraud P, et al. Ketoconazole in Cushing's disease: is it worth a try? *J Clin Endocrinol Metab.* 2014;99:1623.
3. Aggarwl S, Yadav S Sharma AP, Sethi V. Laparoscopic bilateral transperitoneal adrenalectomy for Cushing's syndrome: surgical challenges and lessons learnt. *Surglaparosc Endosc Percutan Tech.* 2013;23(3):324-8.