CASE REPORT

Non-secreting adrenal myelolipoma in a middle-aged male patient manifesting with sudden onset of severe lower back pain

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Summary Adrenal myelolipoma (AML) is a rare benign tumor, usually non-functioning and asymptomatic until it reaches large size. AML is mostly detected incidentally by imaging and is composed of adipose tissue and hematopoietic elements. Only symptomatic tumor needs surgical excision. We report the case of a large non-functioning adrenal tumor discovered by means of combined imaging techniques in a middle-aged male patient who complained the sudden onset of severe lower back pain; successful laparoscopic removal was performed, and AML was diagnosed at histopathology.

Key words: Adrenal myelolipoma; Tumor size; Laparoscopy.

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INTRODUCTION

Adrenal myelolipoma (AML) is a benign tumor composed of variable amounts of mature adipose tissue and bone marrow (hematopoietic) elements. AML has an overall prevalence at autopsy of 0.08-0.2%, affects patients in their fifth to seventh decades of life, and is usually asymptomatic and non-functioning (1). With the widespread use of ultrasonography (US), computed tomography (CT) and magnetic resonance imaging (MRI), the finding of AML has reached up to 7-15% of adrenal incidentalomas (2, 3). Albeit mostly asymptomatic, huge AML may cause flank pain and abdominal discomfort/pain by causing pressure of surrounding structures and may present with rupture, haemorrhage, or hemorrhagic shock (1, 3). In patients with AML three distinct types of endocrine dysfunctions have been described: hormone secreting AML, AML occurring in patients with congenital adrenal hyperplasia (CAH) and AML occurring in association with a secreting adrenal co-lesion. The rare secreting AMLs display cortisol or aldosterone secretion; nevertheless, a few reports of catecholamine and androgen secretion have been described (1, 3). We report the case of a large non-functioning AML which was discovered in a middle-aged male patient presenting with sudden lower back pain.

CASE REPORT

A 47-year-old man was admitted to the emergency department for severe lower right back pain and vomiting. Physical examination was unremarkable, and blood pressure and blood tests were normal. Abdomen US showed a large 9 x 6 cm hyperchoic curved lesion with regular edge localized in the right suprarenal region. Contrast-enhanced CT confirmed a large 9 cm elliptical heterogeneous neoplasm with regular margins localized in the right adrenal gland, which featured a hypodense part interspersed with more dense component (Figure 1a), and proved suspicious for pheochromocytoma. The patient was admitted to the urology ward. In view of surgical removal of the adrenal mass, hormonal array was carried out on both plasma (ACTH, cortisol, 17-hydroxyprogesterone, DHEAS, upright renin and aldosterone) and urine (24-h free cortisol, 24-h metanephrines and normetanephrines); all values proved unremarkable. Laparoscopic adrenalectomy was performed by transperitoneal approach. In lumbotomic position four trocars were placed by configuring a diamond draw. This technique offers a wide visualization of the operative field ensuring minimal morbidity. The 12-mm port was inserted at the lateral border of the rectus abdominis muscle just above the level of the umbilicus to accommodate the camera. Two subcostal 5-mm ports were placed; one in the mid-clavicular line and the other in the lateral border of the rectus abdominis muscle. The third 5-mm subcostal trocar was inserted in the anterior axillary line. The upper pole of the right kidney was mobilised and the huge adrenal lesion was found (Figure 1b, c). Once the mobilization of the lesion was completed, the tumor was removed en-bloc by enlarging the pararectal incision. On gross examination, a 9 x 6 cm reddish yellow colored and friable mass was observed. Histology showed normally shaped mature adipocytes mixed with hematopoietic cells and surrounded by a capsule; these features were compatible with the diagnosis of myelolipoma. Postoperative course was uneventful and the patient was discharged after 5 days.

DISCUSSION

AML is discovered incidentally in 2-5% of population during imaging analysis performed for other reasons. Tumor size varies from several millimeters to more than 40 centimeters (1, 3). The fat component of AML is postulated to be derived by the mesenchymal stem cells harboring in the vessel wall of stromal fat of adrenal cortex. The mature adipocytes become inflammatory and stimulate adrenal cortex tissue to release substances (likely granulocyte colony stimulating factor) that recruit

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of view is consolidated that the organ most suitable for the laparoscopic approach is the adrenal gland; since it is deeply located in the retroperitoneum a large incision is required in case of open surgery. The right adrenalectomy, specifically in case of tumor diameter larger than 5 cm, can be more challenging due to the proximity with the inferior vena cava and the duodenum (6).

A recent study compared the results in two groups of patients who underwent single-site transumbilical laparoscopic adrenalectomy (LA) for adrenal tumors or standard multi-port LA. No difference in terms of operative time, blood loss, analgesic requirement, and hospital stay was found; however in the first group 85% of patients did not require drainage compared to 25% of patients in the second group, and resumed normal diet earlier (7).

**CONCLUSIONS**

AML is a rare, benign, and usually asymptomatic tumor of adrenal gland. Hormonal work-up seems worthwhile at least in those patients at high metabolic risk or who are referred to surgery. In particular, rare catecholamine-secreting AMLs must be ruled out before surgery in order to prevent life-threatening hypertensive crisis during intraoperative tumor manipulation.

The AMLs which are symptomatic owing to hormonal secretion or more frequently to mass effect should undergo surgical excision. Laparoscopic adrenalectomy is nowadays the preferred and safe surgical option. Informed consent was obtained from the patient.

**REFERENCES**


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