



Case Report

Laparoscopic surgery for adrenal myelolipoma: Report of two cases

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Abstract

Adrenal myelolipoma, consisting of mature fat and hematopoietic tissue, is a rare, benign and biochemically inactive tumor. Most lesions are small and asymptomatic, discovered incidentally at autopsy or on imaging studies performed for other reasons. We report two cases of adrenal myelolipoma which were large and causing symptoms and successfully removed by laparoscopic lateral transabdominal adrenalectomy. We conclude that large and symptomatic adrenal myelolipomas can be treated with laparoscopic adrenalectomy.

Keywords: myelolipoma, adrenal mass, laparoscopic adrenalectomy

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Introduction

Myelolipomas are rare benign tumors of the adrenal gland consisting of mature adipose and hematopoietic tissues which may bleed and lead to necrosis. Since myelolipomas are usually nonfunctioning and symptomless, it is discovered as a unilateral adrenal masses incidentally during abdominal radiological studies or during autopsy (with a quoted incidence of 0.08-0.4 %). Myelolipomas have a clinical importance due to differential diagnosis with malignant adrenal masses and sometimes having symptoms of acute abdominal emergency related to necrosis and retroperitoneal hemorrhage [1-4]. In this report, two adrenal myelolipomas that treated successfully by laparoscopic lateral transabdominal adrenalectomy are discussed.

Two Cases

Two female patients aged 28 and 35 years were admitted to the internal medicine outpatient department due to complaints of persistent right upper quadrant blunt pain. There were no remarkable past medical history in both patients. Physical examinations, routine biochemical and hematological tests were all within normal limits. However, abdominal ultrasound examinations revealed right adrenal masses in both patients. Magnetic resonance imaging (MRI) showed 6x5 and 7x4 cm masses with predominantly adipose densities also having solid components in the right adrenal locations (Figures 1 and 2).



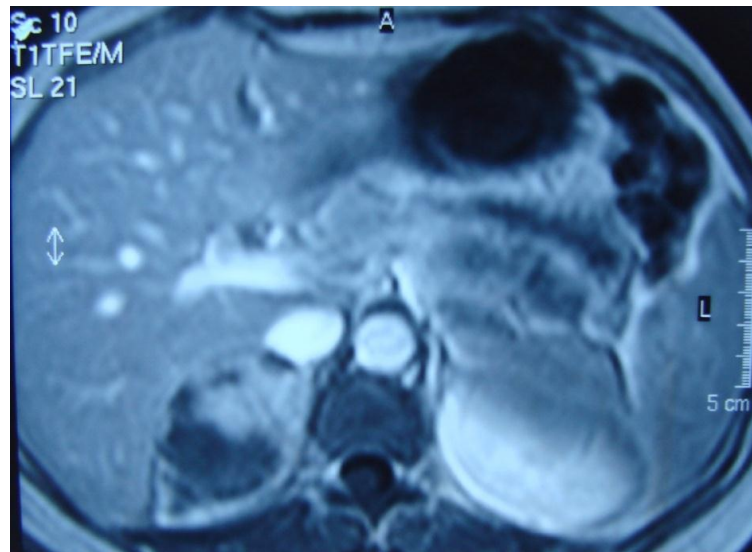


Figure 1-2: In T1/T2 weighted images, 6x4 cm exophytic spanning mass in adrenal gland.

Endocrinological evaluation with 24 hour urine vanillylmandelic acid, normetanephrine and cortisol levels were all within normal limits. Although, the adrenal masses were evaluated as nonfunctioning, it was too large and malignancy could not be ruled out. Therefore, lateral transabdominal laparoscopic adrenalectomy under general anesthesia was attempted. After successful removal of the masses, the pathological examination revealed mature hematopoietic tissue with adipose elements nearby attenuated adrenal gland (Figures 3 and 4) which consistent histopathological diagnosis of adrenal myelolipoma. The patients had uneventful in postoperative periods and were discharged from the hospital.

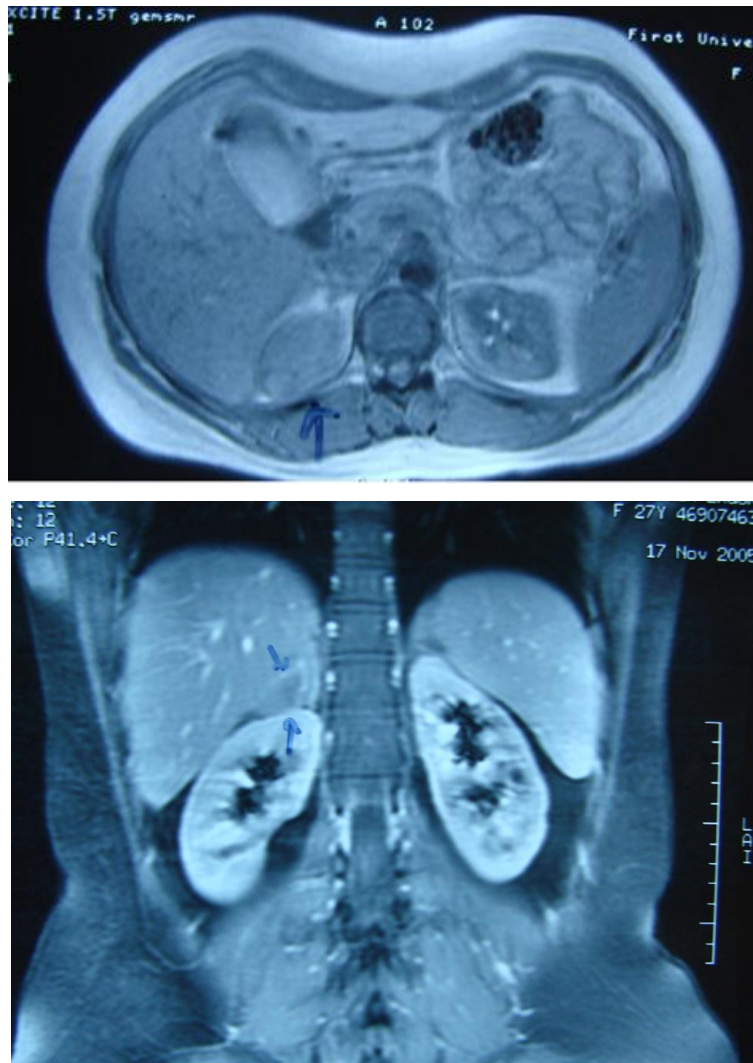


Figure 3-4: In T1/T2 weighted images, 7x5 cm mass in adrenal gland.

Discussion

Adrenal myelolipoma is a benign nonfunctioning and frequently unilateral mass. It is usually discovered incidentally during abdominal radiologic examination of elderly patients. The exact etiological factor of adrenal myelolipoma is not well known, but there are two main hypotheses. One of them suggesting that metaplastic change may take place in the reticuloendothelial cells of the capillaries following stress factors along with necrosis and infection. Sometimes the tumoral mass may show active extramedullary hematopoiesis and reach dimensions of 2-10 cm. However, according to the other hypothesis malignant transformation in myelolipomas has not been seen. Prevalence of adrenal myelolipomas in autopsy series was reported as 0.08-0.4 %. [4-6]. Symptoms may be related to the mass effect

causing abdomino-lomber pain or hemorrhage in the retroperitoneum and necrosis may lead to surgical emergencies [4,7-9].

Since adrenal myelolipomas have prominent adipose tissue content, the main differential diagnostic list includes lipomas, adrenal cysts, adenomas, metastatic tumors, renal angioliomas and retroperitoneal liposarcomas. It may mimic an invasive tumor such as retroperitoneal liposarcoma, if the dimension is big with a minor adipose tissue component. Myelolipomas are usually diagnosed by radiology utilizing ultrasound (US), computerized tomography (CT) and MRI. Unilateral adrenal fatty mass on CT is a valuable diagnostic clue in differential diagnosis [9,10]. Metastatic lesions to the adrenal gland are contrast enhancing and invasive in nature having densities greater than myelolipomas. In contrast to adenomas that have lesser adipose tissue image with intracellular fat density between 10-30 HU and adrenal cysts are easily diagnosed due to non-fatty features with densities close to water [3,6,7,9]. MRI with T1 and T2 weighted images show adipose tissue having high signal intensities and less contrast enhancement. Especially coronal plane images show the relationship with adjacent organs and yield a better differential diagnosis of extra adrenal lesions [5,6,10,11].

Myelolipomas have indication for surgical removal when it is symptomatic. Symptomless myelolipomas smaller than 4cm are not resected and followed by US and CT imaging studies. However, symptomatic and large myelolipomas must be treated with adrenalectomy. Both of the cases presented here were big masses reaching 6 and 7 cm dimensions with symptoms related to the mass effect and were successfully treated by laparoscopic lateral transabdominal adrenalectomy. It should be concluded that symptomatic large, adrenal myelolipomas can be safely treated by lateral transabdominal laparoscopic surgery.

Conflict and interests: The authors do not have any financial relationship with the organization that sponsored the research.

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