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Adrenal Myelolipoma: A case report

Sara Zaheri, Iran Rashidi, Mehrdad Dargahi Malamiri, Seyed Nematollah Jazayeri, Arshya Allahdin

ABSTRACT

Introduction: Myelolipoma is a rare benign adrenal tumor. Usually it is small, asymptomatic and unilateral. It is mostly discovered as an incidentaloma during autopsy. The incident detection of the tumor is increasing in frequency with widespread use of cross-sectional imaging such ultrasonography and computed tomography (CT). The most consistent complaint is abdominal pain caused by hemorrhage the tumor when the lesion became larger than 5 cm. In this paper, we reported symptomatic adrenal myelolipoma because of rarity and its considerable size. Case Report: We report a woman with obesity and mild hypertension presented with unilateral myelolipoma measuring 7x3.5x2 cm. The pathological study revealed adrenal consist of adipocytes associated with hematopoietic elements and blood clot. Conclusion: Myelolipoma as an incidental diagnosis might kept in mind and evaluate accordingly validate protocol because of surgical emergencies such as spontaneous retroperitoneal hemorrhage.

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INTRODUCTION

Myelolipoma is an uncommon benign tumor like lesion of the adrenal gland [1].

These tumors were initially described by Giercke in 1905, and 24 years later, Oberling coined the term 'Myelolipoma' [2]. They are omposed of mature adipocytes and normal hematopoietic tissue [1–3]. The incidence of adrenal Myelolipoma is reported as being 0.08 to 0.4% at autopsy [4, 5]. In the past, this tumor was primarily detected on autopsies [6]. Lately, due to widespread use of radiological studies such as ultrasonography, CT, and magnetic resonance imaging (MRI), incidental discovery of indolent adrenal myelolipomas has become more common [7]. According to Akamatsu et al. result, its incidental detection has become more common, reaching up to 7% of the adrenal masses. The well-recognized complication of adrenal Myelolipoma is spontaneous retroperitoneal hemorrhage. No potential of malignancy for adrenal Myelolipoma has been proved [8]. If the diagnosis of adrenal myelolipoma cannot be made with confidence using noninvasive imaging, fine-needle aspiration (FNA) biopsy should be considered [9–11]. Also in cases where expectant management is being

considered, FNA can definitively rule out malignancy. The presence of mature adipocytes and hematopoietic elements is diagnostic of myelolipoma [10–12].

The diagnosis of myelolipoma is based on the identification of macroscopic fat within the tumor with negative Hounsfield on CT (Figure 1), [13]. The differential diagnosis should include renal angiomyolipoma, retroperitoneal lipoma and liposarcoma [12]. It may present as bleeding or rupture. More severe symptoms include hematuria, renovascular hypertension, even surgical emergencies such as retroperitoneal hemorrhage of the masses presented with life-threatening cardiovascular shock was reported [14–18].

This paper report is a case of clinicopathological characteristic of adrenal myelolipoma with considerable size and bleeding when the tumor where diagnosis was made on the basis of pathological examination.

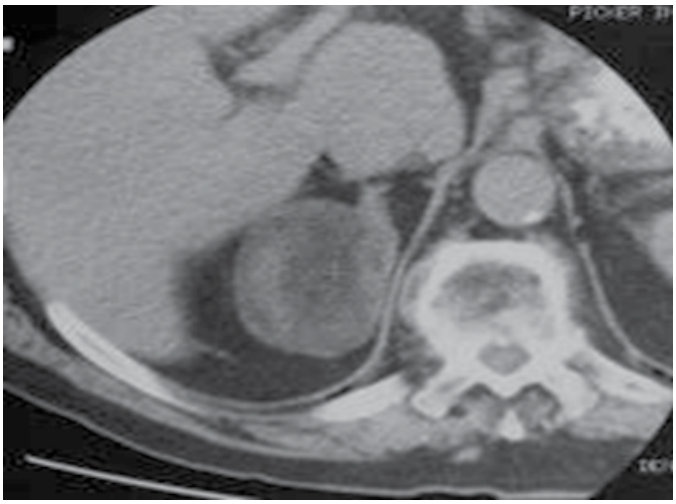

Figure 1: Unenhanced computed tomography scan in an asymptomatic myelolipoma revealed a 6-cm right adrenal mass with density measurements that range from -14 to -27 Hounsfield units.

CASE REPORT

An obese 54-year-old woman referred to surgical department with intermittent, dull aching, vague abdominal pain from a few months and history of mild hypertension. The physical examination was unremarkable. Computed tomography scan showed a right adrenal mass measuring 7x3.5x2 cm. It was labeled as a fat containing mass, raising the possibility of Lipoma, fat-rich adrenal adenoma or liposarcoma. The patient was subjected to multiplanar, multi sequential magnetic resonance imaging (MRI) of the adrenal glands. The findings were consistent with the heterogeneous solid mass. Some hormonal laboratory investigations were done before surgery, for rolling out pheochromocytoma, Cushing syndrome, aldosteronism and Cortico adrenal hyperplasia (CAH) (Table 1). Patients underwent unilateral laparoscopic adrenalectomy, Pathological investigation of tumor in grossly shows well defined mass measure about 7 cm, weighing 310 grams. In cut section, foci of solid yellow tissue and blood clot area are noted (Figure 2). Microscopic histopathology revealed myelolipoma composed of adipocytes with interspersed hematopoietic elements, consist of myeloid and erythroid precursors (Figure 3).

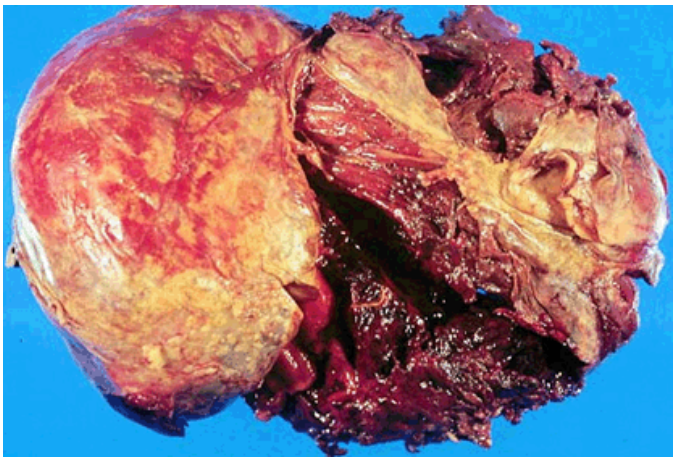

Figure 2: Gross of myelolipoma, well defined mass measure 7x3.5x2 cm which, on cut section showing foci of solid yellow tissue and brownish blood clot like area.

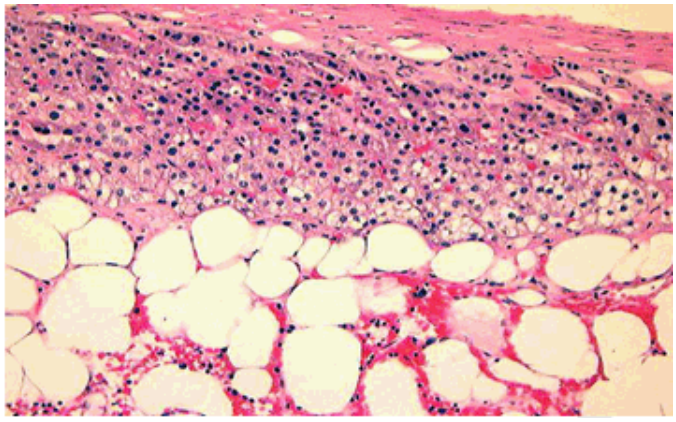

Figure 3: Microscopy of lesion revealed mature fat cell mixed with hematopoietic elements.

DISCUSSION

Myelolipoma in the patient were found with history of mild hypertension and obesity. Occasionally, there are clinical symptoms such as abdominal pain or flank pain due to excess growth, bleeding within tumor as our patient and spontaneous retroperitoneal tumor bleeding [15, 16]. The diagnosis can be established by US, CT or MRI examination based on the identification of negative Hounsfield values for fat within the tumor on CT, but visual comparison to visceral or subcutaneous fat is insufficient in most cases [11, 17]. In the majority of the cases, adrenal

Table 1: Symmetry of the useful laboratory data from patient to rule out differential diagnosis

Laboratory Data		Normal Refrence Range
Potassium(K)	4.3 mmol/L	3.5–5 mmol/L
NA	141 mE/L	136–45mE/L
Plasma rennin activity	4.32ng/ml-hr	1–10 ng/ml-hr
Aldosterone	15.4ng/dl	5–20 ng/dl
17- oH progesterone	0.7 µg/L	0.2–5
noradrenaline	55 ug/24 hours(h)	97 ug/24 h
Dopamine	454 ug/24h	500 ug/h
Total volume of urine	2600ml/24 h	
Adrenalin	20ng/L	84 ng/L
Dopamine	20 ng/L	85 ng/l
Dehydroepiandrostenedione (DHEAS)	13 MICRI/DL	12-35 MICRI/DL
Urinary free cortisol (ufc)	42 MIC/24 h	up to 120 MIC/24 h

myelolipomas are unenhanced foci in T1-weighted imaging [12]. The tumor is usually unilateral and rarely exceed 4 cm. However, very large and bilateral myelolipomas have been reported [13]. Based on the other literature, one of the largest adrenal myelolipoma reported weighted 6 kg and measured 31×24.5×11.5 cm [16, 18, 14]. Most patient with myelolipoma underwent surgical resection for a suspected neoplasm, recently with increased frequent detection of myelolipoma, the treatment has been a matter in debt. According to Cristofaro result asymmetric, small tumors < 5 cm are treated conservative with 6–9 months interval whereas symptomatic and large tumor >10 cm should be underwent surgery [5]. The pain responded to an intercostals nerve block, which was done by pain specialist [19]. Since the risk of spontaneous rupture or bleeding is minimal in these small myelolipoma, observation can avoid lifelong steroid substitution [5, 16]. However, according to result of Daneshmand et al. surgery indicate if tumor exceeds 7 cm [6]. Additionally, myelolipomas have been reported to grow significantly during observation and there are number of case reports spontaneous hemorrhage or bleeding with minor trauma [20, 21].

CONCLUSION

We conclude due to the recent increase in the number of incidentally found adrenal myelolipomas, as the matter of fact because of unawareness patient for following or rarely insufficient medical facilities, because surgical emergencies, tight guidelines are now needed to help decided between indolent watch full masses to waiting versus surgical removal of these benign tumors.

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Author Contributions

Sara Zaheri – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

Iran Rashidi – Analysis and interpretation of data, Revising it critically for important intellectual content, Final approval of the version to be published

Mehrdad Dargahi Malamiri – Analysis and interpretation of data, Revising it critically for important intellectual content, Final approval of the version to be published

Seyed Nematollah Jazayeri – Analysis and interpretation of data, Revising it critically for important intellectual content, Final approval of the version to be published
Arshya Allahdin – Analysis and interpretation of data, Revising it critically for important intellectual content, Final approval of the version to be published

Guarantor
The corresponding author is the guarantor of submission.

Conflict of Interest
Authors declare no conflict of interest.

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