Urology Case Reports 33 (2020) 101294

Contents lists available at ScienceDirect

Urology Case Reports

journal homepage: http://www.elsevier.com/locate/eucr

Oncology

Hemorrhagic adrenal gland lipoma: About a rare case and review of literature

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ARTICLE INFO

Keywords:
Adrenal gland
Lipoma
Laparoscopic adrenalectomy
Internal hemorrhage

ABSTRACT

The adrenal lipoma is an extremely rare, benign, and non-functional tumor. We present the first case of adrenal lipoma on the African continent and the youngest patient reported to date. computed tomography (CT) scan guided diagnosis and laparoscopic adrenalectomy was performed given symptomatic and large mass. Histological examination confirmed the diagnosis. At 12 months after the surgery, the patient had no evidence of recurrence.

Introduction

The most common tumors of the adrenal glands are pheochromocytomas, adenomas, and adrenocortical carcinomas. In contrast, Soft tissue tumors represent only 4.8% of all primary adrenal tumors including myelolipomas, liposarcomas, angiomyolipomas, and lipomas. myelolipomas are the most common and the only lipomatous tumors of the adrenal gland classified by the World Health Organization.[1,2] While Adrenal lipomas are uncommon.[1] The diagnosis could only be possible on examination of the surgically removed specimen.[1,3] This case of primary adrenal lipoma is one of only 26 in the literature, and the youngest incidence reported to date. This is likely due to the widespread use of ultrasound and computed tomography (CT), which is bound to increase reports of this rare adrenal tumor.

Case presentation

A 25-year-old woman presented at the emergency department with three-month right flank intermittent, growing, and non-radiating pain. There were no symptoms of the lower urinary tract with no history of fever, nausea, vomiting, or palpitation. On physical examination, the patient was obese, the blood pressure was 130/80 mm Hg. Bimanual palpation examination of both hypochondrium areas was unrevealing. The remainder of the physical examination was normal. She had undergone ultrasonography revealing a hyperechoic adrenal right mass. Blood and urine metabolite studies were done. Serum renin-angiotensin, cortisol, and urine metanephrine were within normal limits. Abdominal computerized tomography demonstrated a well-circumscribed, non-enhancing right supra-renal mass of adipose tissue density with internal areas of hemorrhage measuring 8,6 cm in big axis suggesting at first a myelolipoma (Fig. 1). The patient underwent a laparoscopic right adrenalectomy. she continued to have an uncomplicated postoperative course and was discharged on postoperative day three.

The specimen consisted of a well-circumscribed mass surrounded by a thin capsule measured 8,6 cm × 8 cm × 6.1 cm and weighed 195 g. Cut section the lesion was soft and yellow with a rare finding of an 8 cm × 7 cm adrenal lipoma with peripheric areas of hemorrhage (Fig. 2). After 12 months of follow-up, the patient had no evidence of recurrence.

Discussion

Primary adrenal lipomas are rare benign tumors. There are only 25 cases of adrenal lipomas reported to date (Table 1).[1–5] In 30-year experience, Lam and Lo found 4.8% of the adrenal lipomatous tumors, of which 0.7% were adrenal gland lipomas.[1] its prevalence is low and there is no large series described in the literature. The histogenesis of these mesenchymal tumors is still little understood.[5]

Most cases have been reported in the Asian population. They have commonly noted in patients in the sixth decade with age ranges from 29 to 78 years. Our patient is only 25 years old. The right adrenal gland was more affected like in our case. Sexe Ratio was 2.5 male/1 female. In the literature, a giant adrenal gland lipoma was reported by Milathianakis

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https://doi.org/10.1016/j.eucr.2020.101294
Received 25 May 2020; Received in revised form 3 June 2020; Accepted 5 June 2020
Available online 5 June 2020

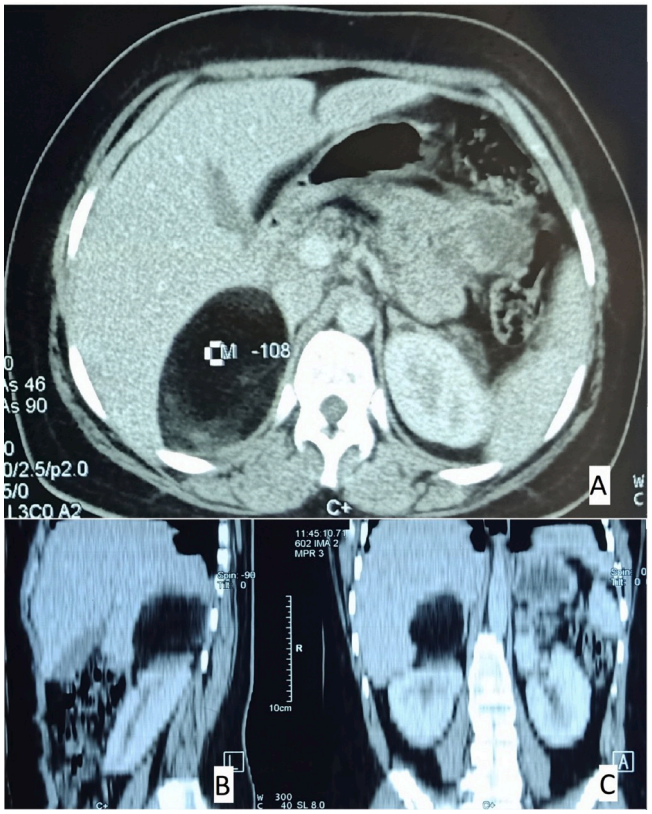

Fig. 1. CT scan images (**A**: axial, **B**: coronal, **C**: frontal) showing well-circumscribed, non-enhancing right supra-renal mass measuring 8.6 × 6.1cm with negative attenuation value (−108 HU) with internal areas of hemorrhage.

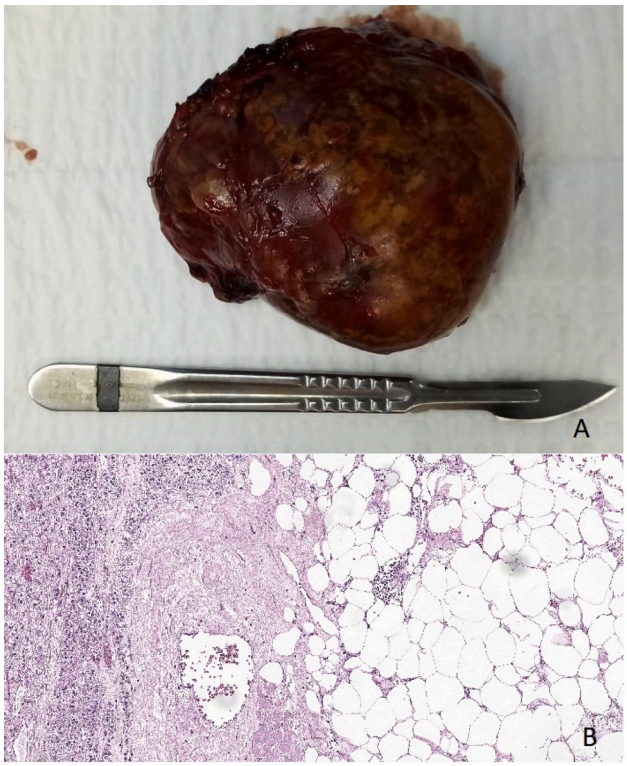

Fig. 2. **A**: Surgical specimen of right adrenalectomy. **B:** Microphotography showing adrenal parenchyma with a neoplastic proliferation made of mature adipocytes. (HE, 200X).

Table 1
Summary of the reported cases of adrenal lipomas.

Author	year	country	sexe	age	side	Size/Weight (mm/gram)	presentaion	Imaging	treatement	Remarks
Lange	1966	Germany	M	54	Rt	25/-	Paroxysmal hypertention	Not done		
Prinz	1982	USA	F	73	Rt	30/-	Incidental at CT	CT scan	adrenalectomy	
Avinoach	1989	Israel	F	40	Rt	13/+7	Incidental finding at laparotomy	Not done		
Sharma	1998	India	M	45	Rt	120/-	Abdominal pain, hypertension		Laparoscopic adrenalectomy	
Ghavamian	1998	USA	F	50	Lt	80/-	Incidental at CT	CT scan	Partiel adrenalectomy	Bilateral adrenal tuberculosis, necrosis and calcification
Buttner	1999	Germany	M	50	Rt	11/-	Incidental at autopsy	Not done		
Lam	2001	Hong	F	64	Rt	80/190	Incidental at US	US	Resection	calcification
		Kong	M	78	Rt	45/24	Incidental at autopsy	Not done		
			M	65	Lt	20/-	Incidental at autopsy	Not done		
Milathianakis	2002	Greece	M	39	Rt	200/2900	Incidental at US	CT scan	Transperetoneal resection	Giant, calcifictaion on CT
Rodriguez-Calvo	2007	Spain	M	70	Lt	10/-	Incidental at autopsy			Pheochromocytoma in the controlateral gland
			M	45	Rt	20/18	Incidental at autopsy			
Shumaker	2008	USA	M	68	Lt	70/-	Incidental at CT		Laparoscopic adrenalectomy	
Singaporewalla	2009	Singapore	M	44	Lt	156/-	Abdominal pain		resection	Retroperitoneal bleeding
Shah	2009	Pakistan	M	35	Rt	50/-	Pain in right loin		Right adrenalectomy	
Gupta	2009	India	M	51	Rt	90/-	Incidental at CT		Laparoscopic adrenalectomy	Detected 3 months after nephrolithotomy + perinephric abscess
Goldenberg	2011	USA	M	55	Rt	70/-	Abdominal pain	CT scan	laparoscopic adrenalectomy	
Gunay	2011	Turkey	F	68	Lt	70/-	Incidental at MRI	MRI	NA	
Kapetanakis[3]	2011	Greece	F	54	Lt	160/950	Postpradial pain	CT scan	laparotomy	
Patel[4]	2011	India	M	43	Rt	150/810	Incidental at US	US/CT/ MRI	laparoscopic adrenalectomy	
Jain5	2012	India	F	55	Rt	120/-	Right flank pain	US/CT	Laparoscopic adrenalectomy	internal hemorrhage
Zhao	2014	China	F	31	Rt	40/17,5	Incidental	NA		
			F	60	Rt	100/172	Incidental	NA		
			F	51	Rt	60/112	Back pain	NA		
Tohidi-Esfahani[2]	2020	australia	M	29	Rt	NA	incidental	NA		
Present case	2020	Morroco	F	25	Rt	86/195	Right flank pain	US/CT	Laparoscopic adrenalectomy	internal hemorrhage

M indicates male; F, female; Rt, right; Lt, left; CT, computed tomography. US ultrasonography, and NA not available.

measuring 200 mm in dimension and 2900g of weight.[1] The mean maximum dimension was 74,5mm (range, 10mm to 200 mm). Over half of the tumors were larger than 60 mm. Also, the mean weight was 417g (range, 7–2900 g). All the adrenal lipomas described in the literature are non-functional which explains why most of them have been detected incidentally by radiological investigations for other pathologies or at autopsy. In other cases, symptoms may be acute, subacute, or chronic. Acute symptoms are rare, such as fever and chills due to complications of perinephric abscess or spontaneous hemorrhage.[3,5] Subacute or chronic symptoms concern pain due to large size and hypertension due to adrenal medullary compression.[1]

Ultrasonography of the abdomen objectified a hyperechoic mass in the region of the adrenal gland. Most often, adrenal lipoma was detected by a computed tomography scan which demonstrated a well-circumscribed, non-enhancing supra-renal mass of adipose tissue density. Magnetic resonance imaging was not often performed and showed similar findings to those in the computed tomography scan. yet, the diagnosis of adrenal lipoma could only be made on histological examination.[1,5]

Summary

The adrenal lipoma is a rare benign lesion. The diagnosis could only be possible on surgically removed specimens. However, it could be asymptomatic or symptomatic and presented with pain as a result of complications.

Declaration of competing interest

None of the contributing authors have any conflict of interest, including specific financial interests or relationships and affiliations relevant to the subject matter or materials discussed in the manuscript.

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