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Bilateral Adrenal Myelolipoma, A Case Presentation and Brief Literature Review

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As a rare and normally-benign and functionless tumor, primary adrenal myelolipoma comprises adipose tissue and myeloid cells, and its diagnosis is usually difficult owing to its asymptomatic nature. Imaging techniques can detect these masses in over 90% of the cases. CT scan is the most sensitive imaging technique, which can display the tissue nature of this tumor with a high resolution. The present case report involves a 45-year-old woman with bilateral adrenal myelolipoma diagnosed with imaging methods.

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Case Report

INTRODUCTION

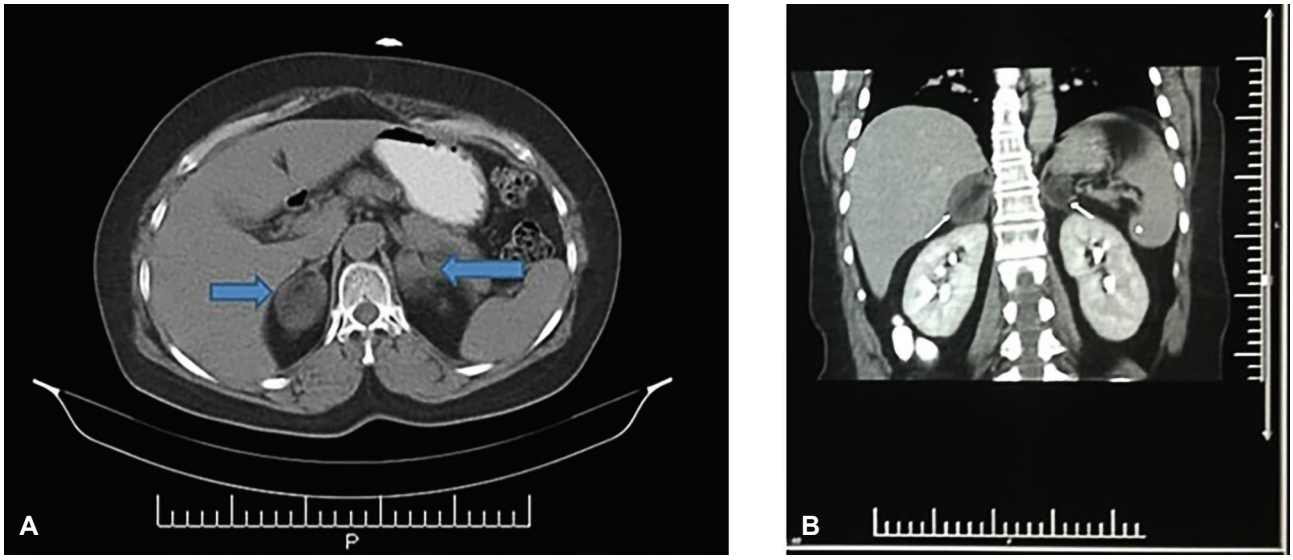
Adrenal myelolipoma was first diagnosed in 1905. These normally benign tumors rarely emerge, and they are often unilateral and smaller than 4 cm; nevertheless, they may appear bilateral or in very large sizes, which are called giant myelolipoma if they grow larger than 8 cm.[1-4] These tumors are often asymptomatic and hormonally inactive, although their hormonal activity has also been reported.[4] Moreover, given that they are asymptomatic, they used to remain undiagnosed until patient death before the advent of advanced imaging techniques. A total of 0.08% - 0.2% of the cases have been reported to be diagnosed through autopsy.[2,3] Imaging techniques have made early diagnosis of adrenal myelolipoma, possible.[4,5] The present case report introduces a patient with bilateral adrenal myelolipoma diagnosed with imaging techniques.

CASE PRESENTATION

The patient was a 45-year-old woman presenting with mild non-specific abdominal pain to an internal clinic in September 2016. The pain had been mild, transient and self-limited over the previous three months. The patient did not report any accompanying symptoms, had a controlled blood pressure and no history of diabetes, smoking and alcohol consumption. Examinations suggested a good general health condition, and abdominal examination suggested no tenderness and masses (Figure). Bilateral adrenal myelolipoma was confirmed through a CT scan showing several mixed-density (solid and fat) masses (Figure). Two distinct masses (36×27 mm and 46×44 mm) with round and regular margins found on the left side at an absorption value of -46 HU, and a 38×50 mm mass on the right adrenal gland at an absorption value of -50 HU could suggest lesions with high fat density in bilateral adrenal masses (Figure). The absence of positive findings in the patient's laboratory and hormonal tests confirmed that the mass was non-secretory. The patient was clinically examined through follow-ups given the size of the masses, the fact that the mild pain was self-limited, and the absence of clinical symptoms in the subsequent visits.

DISCUSSION

The etiology of adrenal myelolipoma as a combination of adipose tissue and myeloid cells is unknown, although some hypotheses have suggested that stem cells or hormonal secretions contribute to its pathogenesis.[6,7] The incidence of adrenal myelolipoma increases with age, and it has been reported to be three times more prevalent on the right side than the left.[3,6,7] Although these masses are usually small and grow slowly, giant myelolipoma can develop in rare cases with a size



Horizontal (A) and coronal (B) abdominal CT scans demonstrate two distinct masses with round and regular margins (36×27 and 46×44 mm) with absorption value of -46 HU on the left adrenal gland and on the right adrenal gland shows a mass of 38×50 mm with the absorption value of -50 HU with round and regular margins.

exceeding 8 cm. The clinical symptoms of this condition include abdominal pain, constipation, vomiting, hematuria, or renovascular hypertension; which can be caused by the pressure effect on the peritumoral tissue or intratumoral hemorrhage.[6,7]

In more than 90% of the cases, these tumors can be definitely diagnosed using imaging techniques such as CT scan.

Myelolipoma normally appears radiolucent in plain films and avascular in angiography. In ultrasound, adipose tissue appears as hyperechoic regions, and myeloid cells as hypoechoic regions. The hyperechoic and hypoechoic regions can be simultaneously present in a lesion. CT scan has been reported as the most sensitive diagnostic test for myelolipoma. The adipose tissue has a low density, and appears as regions ≤ 30 Hounsfield in a CT scan,[8] but as high-signal regions in T1 and T2 in MRI. In contrast, the myeloid tissue appears as low-signal regions in T1 and moderate signal in T2 in MRI.[8]

No specific guidelines have been defined for treating adrenal myelolipoma, and the treatment differs from one patient to the other by the size, nature and location of the tumor.[9,11] The potential intratumoral hemorrhage in giant myelolipoma (larger than 8 cm) can cause symptoms such as abdominal pain, nausea, vomiting and hypotension, and can be treated with surgeries, including laparotomy and laparoscopy.[2,12]

The present case report described a patient with bilateral adrenal myelolipoma diagnosed based on CT scan findings. She did not undergo surgery, and was followed-up with clinical examinations and imaging given the tumor size and the absence of clinical symptoms in the later follow-ups.

REFERENCES

1. Lam AK. Lipomatous tumors in adrenal gland: WHO updates and clinical implications. Endocr Relat Cancer. Mar 2017; 24(3):R65-R79.
2. Musante F, Derchi LE, Zappasodi F, et al. Myelolipoma of the adrenal gland: sonographic and CT features. AJR Am J Roentgenol. Nov 1988; 151(5):961-964.
3. Gershuni VM, Bittner JGt, Moley JF, Brunt LM. Adrenal myelolipoma: operative indications and outcomes. J Laparoendosc Adv Surg Tech A. Jan 2014; 24(1):8-12.
4. Cha JS, Shin YS, Kim MK, Kim HJ. Myelolipomas of both adrenal glands. Korean J Urol. Aug 2011; 52(8):582-585.
5. Yang Y, Ye LY, Yu B, Guo JX, Liu Q, Chen Y. Two case reports of bilateral adrenal myelolipomas. World J Clin Cases. Sep 16 2015; 3(9):853-860.
6. Decmann A, Perge P, Toth M, Igaz P. Adrenal myelolipoma: a comprehensive review. Endocrine. Jan 2018; 59(1):7-15.
7. Liu HP, Chang WY, Chien ST, et al. Intra-abdominal bleeding with hemorrhagic shock: a case of adrenal myelolipoma and review of literature. BMC Surg. Jun 26 2017; 17(1):74.
8. Kim HK, Lee YH, Jung KJ, Sung NK, Kim OD, Cho CH. Adrenal Collision Tumor Consisted of Adrenocortical Carcinoma and Myelolipoma: A Case Report. J Korean Radiol Soc. 2002; 47(4):399-401.

9. Posses SP, Prado BC, Bechara GR, Puppim AR, Carli CRS, Miranda MML. Giant bilateral adrenal myelolipoma: Case presentation and a brief literature review. Urol Case Rep. May 2018; 18:67-69.
10. Sakaki M, Izaki H, Fukumori T, Taue R, Kishimoto T, Kanayama HO. Bilateral adrenal myelolipoma associated with adrenogenital syndrome. Int J Urol. Jun 2006; 13(6):801-802.
11. Jung SI, Kim SO, Kang TW, Kwon DD, Park K, Ryu SB. Bilateral adrenal myelolipoma associated with hyperaldosteronism: report of a case and review of the literature. Urology. Dec 2007; 70(6):1223 e1211-1223.
12. Victoria M. Gershuni, MS, James G. Bittner, IV, MD, Jeffrey F. Moley, MD, and L. Michael Brunt, MD. Adrenal Myelolipoma: Operative Indications and Outcomes. J Laparoendosc Adv Surg Tech A. 2014 Jan 1; 24(1): 8–12.

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