

# Endothelial Cyst of the Left Adrenal Gland in Female Patient Presented as a Cystic Tumor of the Pancreas: A Case Report

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## Abstract

Large adrenal gland cysts represent a rare clinical entity than can be misdiagnosed as pancreatic cystic tumor and eventually change the preoperative plan of the surgeon. Their sex predomination is with female to male ratio of 3:1, occurring mostly in middle aged women and are mostly always unilateral and left-sided in 55% of cases. The treatment for cysts larger than 5 cm in diameter is surgical regardless of the symptoms, due to their potential for malignancy. We present a case of left adrenal gland endothelial cyst primarily presented on CT scan as a cystic tumor of the pancreatic tale. Therefore, even when the proper preoperative imaging tools are used, the diagnosis is not certain and the preoperative plan is changed during the surgery.

**Keywords:** adrenal gland, endothelial cyst.

**DOI:** 10.7176/JHMN/85-06

**Publication date:** January 31<sup>st</sup> 2021

## Introduction

Adrenal gland cysts are rare true cystic lesions that were first described by Greiselius in 1670 (1). So far, only case reports or small series have been reported (2-4). The cysts appear mostly unilateral and around 8-15 % are bilateral. They are mostly asymptomatic, nonfunctioning and benign. Depending on the size, can be presented as asymptomatic or can present with acute or chronic pain. Another sudden presentation is a cyst rupture (5).

True adrenal cysts (the ones with cellular lining) are divided into two groups: epithelial and endothelial. The recent group is subdivided in two subgroups (lymphatic and vascular). Other cystic lesions of the adrenal gland are in fact pseudocysts (Table 1) (6).

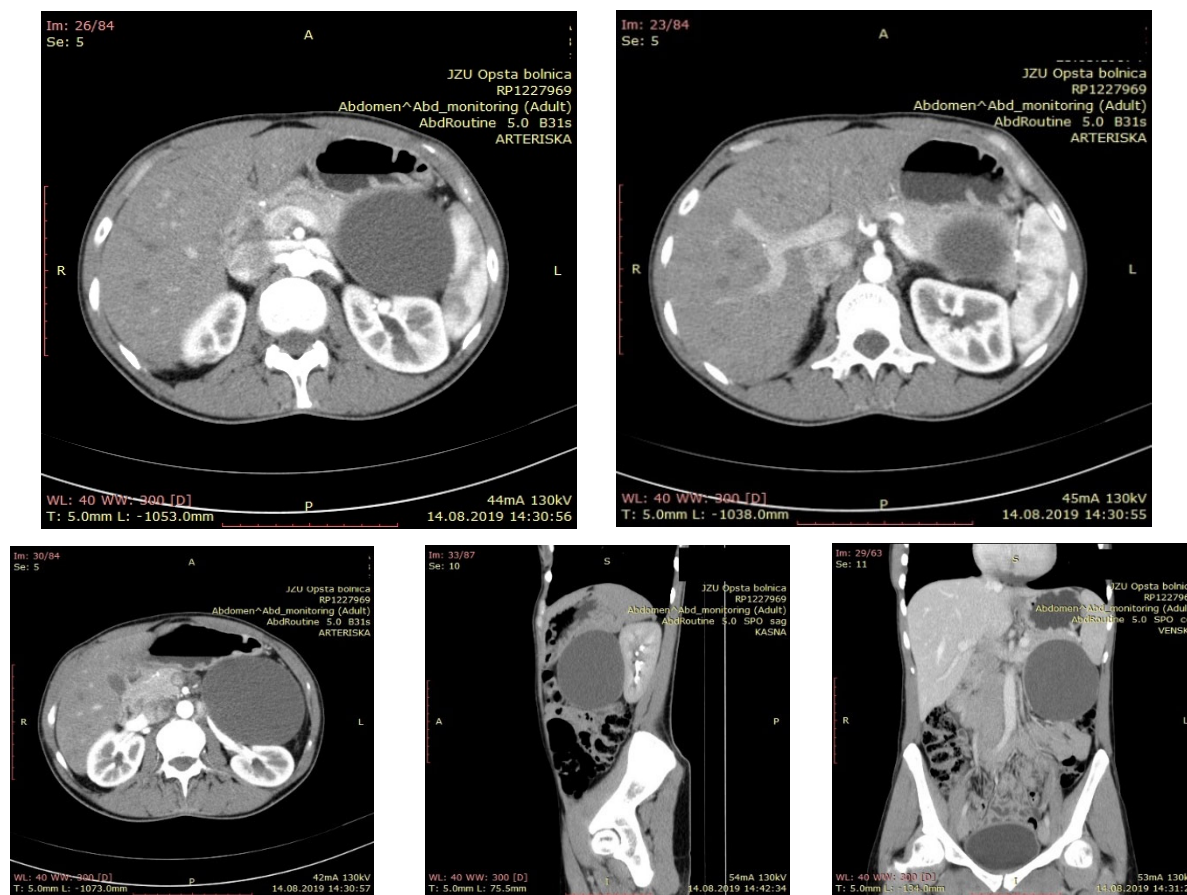
Table 1. Groups of adrenal gland cysts

<b>True cysts</b>	<ul style="list-style-type: none"><li>- Epithelial</li><li>- Endothelial: (lymphatic and vascular)</li></ul>
<b>Pseudocysts</b>	<ul style="list-style-type: none"><li>- Haemorrhagic</li><li>- Parasitic</li><li>- Neoplastic</li></ul>

Due to the lack of differentiation for malignancy, a surgical treatment is advisable for all the lesions with a diameter more than 5 cm. For smaller lesions with benign radiological characteristics, a conservative management is an option (7).

## Case report

A thirty two years old female patient with an indefinite abdominal discomfort was subjected for an ultrasonographic and CT examination. The latest revealed a solitary cystic tumor (around 10 cm in diameter) that, according to the radiologist's report, seemed to originate from the pancreatic tale (Figures 1-5). Due to the localization and the size of the lesion, a surgical exploration and tumor removal was planned (open distal pancreatectomy).



(Figure 1-5)

After median laparotomy, we approached to the pancreas via the gastrocolic ligament. Pancreatic body and its lower edge were exposed and we concluded that the pancreas is tumor free. Mobilization and further dissection of the lesion has led us to the left adrenal gland where the cysts was finally detached and ligated form the rest of the macroscopically normal adrenal gland tissue (Figure 6, 7). The postoperative period was uneventful and the patient was discharged from the clinic on postoperative day 5.

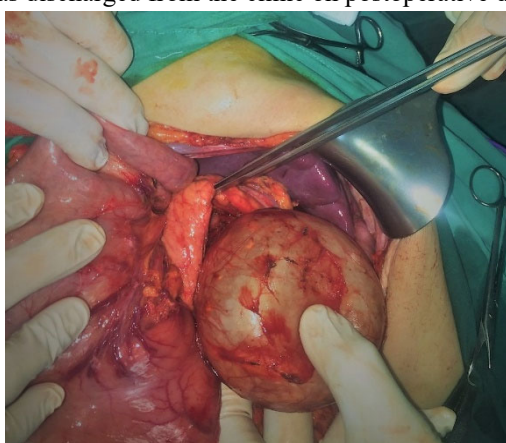


Figure 6

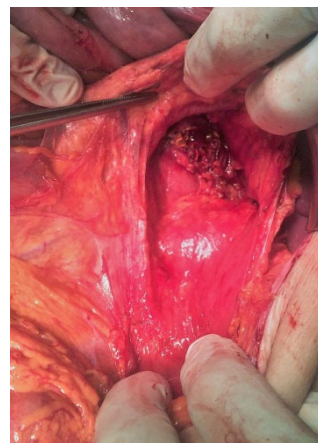


Figure 7

The pathologic examination described a cystic formation with smooth and shiny surface and stressed vascularization. In a part of the cyst, a normal adrenal tissue was visualized. The cyst was filled with a clear serous liquid and smooth intraluminal surface. A hematoxylin-eosin staining and immunohistochemistry staining for CD10 and RCC was done.

The microscopic analysis revealed a cyst wall composed of collagen connective tissue walled with endothelium. CD10 and RCC were negative for renal cell carcinoma. CD31 showed high positivity and the final

conclusion from the pathologist corresponded for an endothelial cyst of the adrenal gland (Figure 8-11).

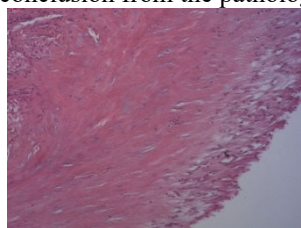


Figure 8 (HE)

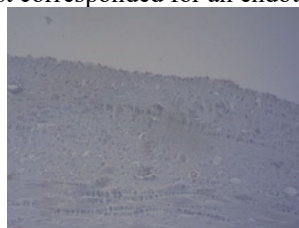


Figure 9 (CD10)

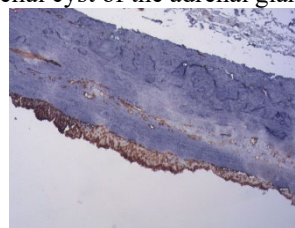


Figure 10 (CD31)

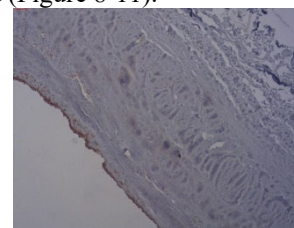


Figure 11 (CD31)

## Discussion

Large adrenal cysts occur predominantly in women (female to male ratio 3:1) with mean age of 40.7 years, about 55% are left-sided and almost 100% are unilateral (4).

Endothelial cysts of the adrenal glands are present with about 45% of all non-neoplastic lesions of the adrenals (4). Smaller cysts are mostly asymptomatic, while the massive ones usually cause pain, gastrointestinal disorders, dyspnea and can be palpated. Rarely, first sign is intracystic hemorrhage or cyst rupture (8). Large cysts (more than 5 cm) should be considered seriously due to their malignancy potential (9). Differentiation between malignant and benign adrenal cyst according to Friedlich et al. can be achieved by using CT with a sensitivity of 85 to 100% and a specificity of 95 to 100% (10). Magnetic resonance imaging is also a useful and precise diagnostic imaging method for adrenal masses in general (11).

The treatment for adrenal cysts is not uniform and supported with guidelines. However, a surgical removal (open or laparoscopic) is recommended for all cysts larger than 5 cm, and those that are symptomatic, malignant, hormonally active or parasitic (8, 12).

The definitive diagnosis of the endothelial adrenal cyst is established by pathologic examination and immunohistochemistry. Positive staining to CD31 confirms the endothelial presence of the lining cells (13).

## Conclusion

Due to the long list of differential diagnoses in cases of a cystic lesion of the upper abdomen, one should always consider the presence of endothelial adrenal cyst, especially if it's unilateral, in middle-aged women and should give an advantage to a surgical treatment.

## References

1. H.P. Chien, Y.S. Chang, P.S. Hsu, J.D. Lin, Y.C. Wu, H.L. Chang, C.K. Chuang, K.H. Tsuei, C. Hsueh. Adrenal cystic lesions: a clinicopathological analysis of 25 cases with proposed histogenesis and review of the literature. *Endocr. Pathol.*, 19 (2008), pp. 274-281
2. R. Bellantone, A. Ferrante, M. Raffaelli, M. Boscherini, C.P. Lombardi, F. Crucitti. Adrenal cystic lesions: report of 12 surgically treated cases and review of the literature. *J. Endocrinol. Invest.*, 21 (1998), pp. 109-114
3. A. Cavallaro, G. De Toma, P.L. Mingazzini, G. Cavallaro, G. Mosiello, G. Marchetti, L. Memeo, M. La Fauci. Cysts of the adrenal gland: revision of a 15-year experience. *Anticancer Res.*, 21 (2001), pp. 1401-1406
4. G.A. Abeshouse, R.B. Goldstein, B.S. Abeshouse. Adrenal cysts: review of the literature and report of three cases. *J. Urol.*, 81 (1959), pp. 711-719
5. Ali Z, Tariq H, Rehman U. Endothelial Cysts of Adrenal Gland. *J Coll Physicians Surg Pak.* 2019 Jun; 29(6):S16-S17
6. Hodges, F.V. & Ellis, F.R. Cystic lesions of the adrenal gland *Arch Pathol* 1958, 66: 53-58
7. Wedmid A, Palese M. Diagnosis and treatment of the adrenal cyst. *Curr Urol Rep.* 2010 Feb; 11(1):44-50
8. Furihata M, Iida Y, Furihata T, Ito E. A giant lymphatic cyst of the adrenal gland: report of a rare case and review of the literature. *Int Surg.* 2015; 100(1):2-8
9. Kasperlik-Zahuska AA, Otto M, Cichocki A, Rosłonowska E, Słowinska-Srzednicka J, Zgliczyński W, Jeske W, Papierska L, Tołoczko T, Polański J, Słapa R. 1,161 patients with adrenal incidentalomas: indications for surgery. *Langenbecks Arch Surg.* 2008 Mar; 393(2):121-6
10. Contrast-enhanced sonography of adrenal masses: differentiation of adenomas and nonadenomatous lesions. Friedrich-Rust M, Schneider G, Bohle RM, Herrmann E, Sarrazin C, Zeuzem S, Bojunga J *AJR Am J Roentgenol.* 2008 Dec; 191(6):1852-6
11. Albano D, Agnello F, Midiri F, et al. Imaging features of adrenal masses. *Insights Imaging.* 2019; 10(1):1
12. The role of laparoscopic adrenalectomy for adrenal tumours of 6 cm or greater. Parnaby CN, Chong PS, Chisholm L, Farrow J, Connell JM, O'Dwyer PJ *Surg Endosc.* 2008 Mar; 22(3):617-21
13. Erickson, L. A., R. V. Lloyd, R. Hartman, and G. Thompson. Cystic adrenal neoplasms. *Cancer* 2004. 101:1537-1544