



CASE REPORT

Medicine Science 2022;11(3):

Giant adrenal endothelial Cyst: A case report

Arun Kumar M¹, Nilanjan Roy¹, Haris Jafri¹, Puneet Baveja², Vitesh Popli¹, Ashok Kumar Ponnamp¹

¹Armed Forces Medical College, Department of Surgery, Pune, India

²Armed Forces Medical College, Department of Pathology, Pune, India

Received 23 April 2022; Accepted 21 May 2022

Available online 19.06.2022 with doi: 10.5455/medscience.2022.04.102

Copyright@Author(s) - Available online at www.medicinescience.org

Content of this journal is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.



Abstract

Adrenal cyst initially described in 1670s, is being diagnosed more frequently with the advent of widespread use of diagnostic imaging. Most of these cysts are small and remain nonfunctional with requirement of only conservative approach. Functional, malignant or benign lesions more than 5cm in size needs surgical intervention. Giant adrenal cysts (>10cm) do pose a clinical diagnostic dilemma and present with symptoms as was the scenario in the case being described. The management of this case along with a review of literature is being briefly described.

Keywords: Adrenal cyst, adrenalectomy, endothelial cyst

Introduction

Adrenal cysts are rare lesions, the incidence of which is as low as 0.06% in general population. These lesions of adrenals used to get detected either at autopsy or during surgery for an unrelated disease process in the past [1]. Advances in imaging modalities have increased the detection rates of adrenal cysts, which are usually asymptomatic [2]. Giant adrenal cysts (>10cm) do pose a dilemma to the surgeons with regard to the organ of origin [2–4]. We report a case of a young lady who presented with pain abdomen, diagnosed as a case of adrenal cyst on imaging and operated with a successful outcome.

Case Report

A 26-year-old lady presented to out-patient department of our hospital with pain right upper quadrant of abdomen of four months duration. The pain was continuous, dull aching, moderate in intensity and non-radiating type severe enough to affect her daily routine. There was no history suggestive of pressure effects on bowel, jaundice, urinary complaints, endocrine symptoms

or fever. She had a normal BMI of 24.3 kg/m². Examination revealed a normal pulse rate of 82/min and blood pressure of 116/82mm of Hg. Per-Abdominal examination revealed a soft abdomen with a well healed LSCS scar and no lump or organomegaly. Tenderness was elicited in right hypochondrium on deep palpation. Her baseline hematological and biochemical parameters including electrolytes were within normal limits. Her serum and urine catecholamine assays post imaging were also normal. Echinococcus was also ruled out using IgG assay.

Ultrasonography of abdomen revealed a 13.7 cm x 11.2cm x 11.2 cm cyst arising from the left lobe of liver. Contrast Enhanced CT of abdomen revealed a large retroperitoneal unilocular cyst (11x11cm) probably arising from right adrenal gland with maintained intervening fat planes with kidney and liver. Lesion was displacing the right kidney inferiorly and scalloping the adjacent liver parenchyma without infiltration. MRI of the abdomen showed a well-defined thin-walled retroperitoneal cystic lesion (13x12x14.5 cm) in relation to superior pole of right kidney with right adrenal not visualized separately. The lesion was displacing the right kidney inferiorly, IVC, head of pancreas and D2 segment of duodenum anteromedially.

She underwent Right Adrenalectomy under General Anesthesia via a right flank incision and 12th Rib cutting approach. Cyst was decompressed to aid in complete resection. Intra-operative

*Corresponding Author: Arun Kumar M, Armed Forces Medical College, Department of Surgery, Pune, India
E-mail: ak3.doc@gmail.com

findings included 12x12cm cyst replacing the right adrenal gland with minimal adhesions between cyst, kidney and liver. Brownish fluid was seen inside the cyst with no solid components. Post-operative period was uneventful and patient was discharged on 5th post-op day.

Histopathological examination of the cyst revealed endothelial cyst of adrenal gland, cyst wall composed of fibro-collagenous tissue with dilated ectatic blood vessels and nests of adrenal cortical cells without any atypia or malignancy. Fluid cytology was negative for malignant cells.

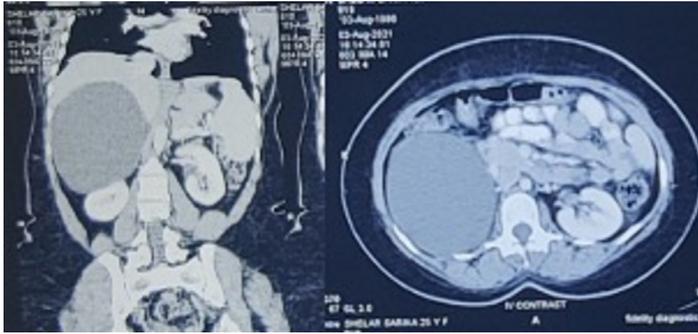


Figure 1. Intra-operative findings of giant right adrenal cyst

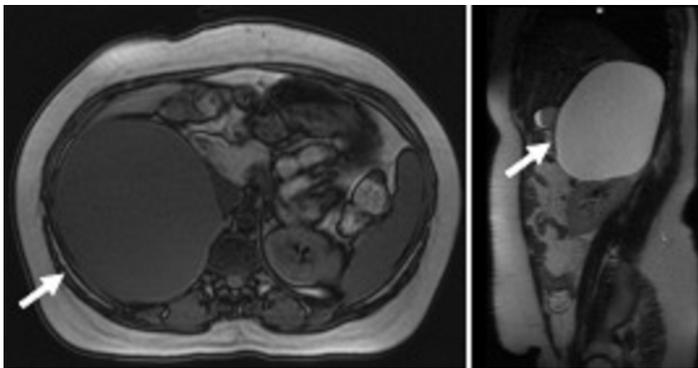


Figure 2. CECT Abdomen & Pelvis showing Right Adrenal Cyst

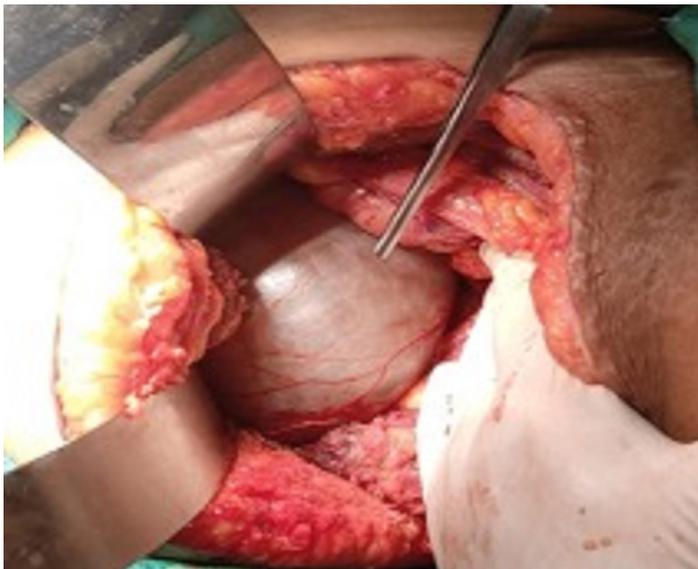


Figure 3. MRI Abdomen showing Right Adrenal Cyst

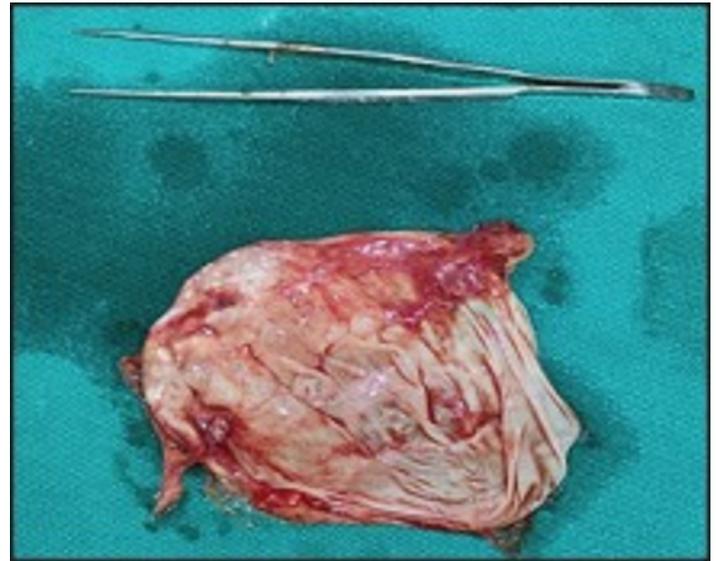


Figure 4. Specimen of cyst post decompression

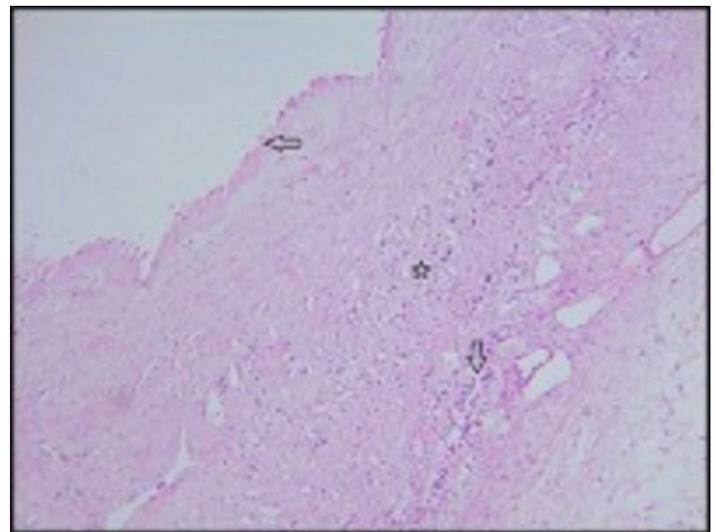


Figure 5. Cyst wall, lined by cuboidal to flat epithelial cells (sideway arrow). Cyst wall composed of fibro-collagenous tissue with dilated ectatic blood vessels (star) & nests of normal adrenal tissue is noted focally (downward arrow)

Discussion

The first report on Adrenal cyst dates back to 1670 by Greiselius, a Viennese physician [5]. Being rare with less than 500 cases reported in literature, more incidentalomas are being reported with advancements in imaging modalities [2,6]. Though they can occur at any age, most of them are detected between 3rd & 4th decade of life with a female preponderance noted in some studies [2,4,6–8].

Historically, adrenal cysts have been classified in to true cysts and pseudocysts [9]. Benign cysts are also classified in to epithelial cysts, endothelial cysts, pseudocysts and parasitic cysts. [10]. Both benign and malignant tumors with cystic degeneration should also be considered in the differential diagnosis of such cysts [11]. The histopathological examination of the specimen in our case showed endothelial cyst. Incidentalomas are inapparent adrenal masses of cutoff size <1cm which are detected inadvertently in the course of evaluation of condition not related to adrenals [12]. Lesions more than 10cm in diameter are called giant cysts [2,4]. Mostly

they are silent and asymptomatic. Cysts less than 10cm usually remain asymptomatic and are detected incidentally. Symptoms vary from abdominal discomfort, pain and gastro-intestinal disturbances when the cyst grows in size. Intra-cystic bleeding or infection predisposes to enlargement of cyst [13,14]. Our patient also presented with abdominal pain and discomfort due to the large size of the cyst.

Treatment options for adrenal cyst vary from marsupialization, incision and drainage (which are historical and abandoned), ultrasound guided percutaneous drainage when diagnosis is established and complete excision of the cyst [9,15,16]. Surgical intervention is indicated when size of the cyst exceed 10cm, in presence of symptoms, endocrine abnormalities, hemorrhage and malignancy [4,17]. In our case, patient was symptomatic and the size of cyst was more than 10cm. Laparoscopic or open adrenalectomy is the current gold standard in the management of adrenal cyst [16]. Considering the size of the cyst and chances of malignancy, open surgical exploration and adrenalectomy was offered to the patient.

Prognosis in such lesions is excellent and patients remain disease free post excision [18].

Conclusion

With advances in radiology, the rate of detection of adrenal masses are rising, most of which are benign, non-functional and cystic. Surgical excision should be done as per indication.

Conflict of interests

The authors declare that there is no conflict of interest in the study.

Financial Disclosure

The authors declare that they have received no financial support for the study.

Informed Consent

Written consent was obtained from the patient and his parents.

References

- Milsten MS, Minielly JA, VanSchoyck P, Forrest JB. Abdominal pain secondary to a lymphangiomatous cyst of the adrenal: case report and review of literature. *J Okla State Med Assoc.* 1994;87:225–7.
- Tagge DU, Baron PL. Giant adrenal cyst: management and review of the literature. *Am Surg.* 1997;1:63:744–6.
- Singh N, George RK, Gupta SK, et al. Giant adrenal cyst presenting as a diagnostic dilemma: a case report. *Int Surg.* 2005;1:90:78–80.
- Inan M, Besim H, Tulay S, Kobat I. Giant symptomatic adrenal cyst in a patient with an ectopic kidney. *Can J Surg.* 2009;52:25–6.
- Doran, A.H.G. Cystic tumour of the supra-renal body successfully removed by operation. *Br Med J.* 1908;1558–63.
- Bellantone R, Ferrante A, Raffaelli M, Boscherini M et al. Adrenal cystic lesions: report of 12 surgically treated cases and review of the literature. *J Endocrinol Invest.* 1998;21:109–14.
- Favorito LA, Lott FM, Cavalcante AG. Traumatic rupture of adrenal pseudocyst leading to massive hemorrhage in retroperitoneum. *Int Braz J Urol.* 2004;30:35–6.
- Neri LM, Nance FC. Management of adrenal cysts. *The American Surgeon.* 1999;65:151.
- Davenport M, Pollard K, Smith SE, MacMahon MJ. Adrenal cysts--report, review and classification. *Postgrad Med J.* 1988;64:71–3.
- Joliat GR, Melloul E, Djafarriar R, Schmidt S et al. Cystic lymphangioma of the adrenal gland: report of a case and review of the literature. *World J Surg Oncol.* 2015;15;13:58. .
- Zhao M, Gu Q, Li C, Yu J et al. Cystic lymphangioma of adrenal gland: a clinicopathological study of 3 cases and review of literature. *Int J Clin Exp Pathol.* 2014;15;7:5051–6.
- Chatzellis E, Kaltsas G. Adrenal Incidentalomas, et al., editors. *Endotext* [Internet]. South Dartmouth (MA): MDText.com, Inc.; 2000 [cited 2022 Jan 5]. Available from: <http://www.ncbi.nlm.nih.gov/books/NBK279021/>
- Gaffey MJ, Mills SE, Fechner RE, Bertholf MF et al. Vascular adrenal cysts. A clinicopathologic and immunohistochemical study of endothelial and hemorrhagic (pseudocystic) variants. *Am J Surg Pathol.* 1989;13:740–7.
- de Bree E, Schoretsanitis G, Melissas J, Christodoulakis M et al. Cysts of the adrenal gland: Diagnosis and management. *Int Urol Nephrol.* 1998;30:369–76.
- Scheible W, Coel M, Siemers P, Siegel H. Percutaneous aspiration of adrenal cysts. *Am J Roentgenol.* 197;128:1013–6.
- Atim T, Mukhtar A. Giant adrenal cyst in a young female patient: A case report. *Afr J Urol.* 2016;22:83–5.
- De TG, Gabriele R, Plocco M, Sapienza P. Adrenal cysts: therapeutic indications. *Minerva Chir.* 1995;50:925–8.
- Fernandes G, Chaudhari J, Shah N, Gupta A. Adrenal cysts-a report of four cases including one with bilateral involvement. *Int J Med Res Rev.* 2016;30;4:1970–4.