

LAPAROSCOPIC ADRENAL CYSTECTOMY-REPORT OF TWO CASES

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Abstract

Adrenal cysts are rare condition and are usually non-functioning and asymptomatic. We reported two cases of symptomatic adrenal cysts. One female of 20 years and another male of 31 years presented with pain in right and left hypochondrium respectively. Abdominal ultrasound and CT scan confirmed the diagnosis of right and left adrenal cysts. Laboratory findings including hormonal study were within the normal range. Both the cases were managed by laparoscopic excision. We also review some cases of adrenal cysts.

Key words: laparoscopic; adrenal cystectomy

Introduction

In 1903 Doran reported the first case of adrenal cyst described by Greiselius in 1670¹. Foster first summarized and reported clinical data of a total of 220 cases in 1962². By 1989, only about 300 cases had been reported³. Recently, the development of diagnostic techniques such as computed tomography (CT) and ultrasonography (US) has improved our ability to detect functioning or non-functioning adrenal tumours as well as cysts. Clinical problems are often encountered in the diagnosis and management of adrenal tumours. Non- functioning asymptomatic cyst usually does not require surgical interventions⁴. We reported two cases of rare symptomatic non functional adrenal cysts which were treated by laparoscopic excision.

Case one

A 20 years old female presented with the complaints of a swelling in the right upper abdomen for two months. The swelling was gradually increasing in size and extended up to right loin. It was also associated with occasional pain. The pain was intermittent, dull-aching, varying in degree and sometimes has got radiation to the right upper quadrant. There was no other symptom. On

examination her temperature was 98.40 F, pulse-78/min and blood pressure was 110/70mm of Hg. Per abdominal examination revealed a firm, round, slightly tender movable mass about (10X8) cm in diameter in the right upper quadrant of the abdomen. Ultrasound scan showed a cystic mass measuring (10X8) cm present in the right adrenal region. CT scan revealed a huge uniform, smooth, well circumscribed cystic mass (10X8) cm in the right adrenal region pushing the right kidney downwards (Fig-1).

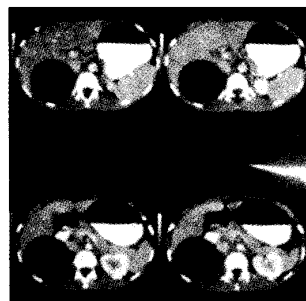


Fig 1 : CT scan of upper abdomen showing large adrenal cyst of case one

Other laboratory works and blood chemistry were found normal. Hormonal assay including 24-hour urinary catecholamines and serum catecholamines were within normal limit.

She was diagnosed as a case of right adrenal cyst and planned for laparoscopic adrenal cystectomy. Laparoscopy was performed with four ports below the right costal margins (Fig-2)

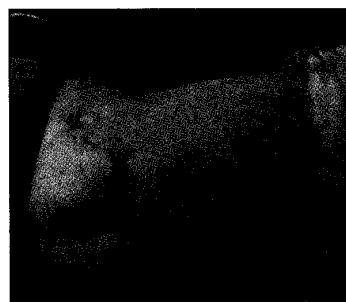


Fig 2 : Site of port placement of lap adrenal cystectomy

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which revealed a very large cyst at the superior pole of right kidney below the right lobe of liver (Fig-3).



Fig 3 : Laparoscopic view of large adrenal cyst of case one

We have successfully excised the entire cyst. The total duration of operation was 45 minutes. The procedure was bloodless and without any perioperative difficulty. There was no change of pulse and blood pressure during the procedure. The postoperative period was smooth and uneventful and patient left the hospital on second postoperative day. The histopathology report revealed a fibrotic sac with calcific plaques and with the adrenal gland located in the central portion.

Case two

A 31 years adult male presented with the complaints of pain in the left flank and gastrointestinal discomfort for one month. The pain was constant, dull aching in nature, varying in degree and sometimes has got radiation to the left upper quadrant and suprapubic region. There was no specific aggravating or relieving factor. His bowel and bladder habits were normal. He was previously healthy, his temperature was 98.80F, pulse 74/min and the blood pressure was 130/80mm of Hg. Other parameters of general examination were normal and the abdominal examination showed no abnormal findings except moderate tenderness in the left hypochondrium. Laboratory works and blood chemistry and hormonal examinations including 24 hour urine catecholamines and serum catecholamines all were within normal limit. Ultrasound scan showed a cystic mass (70X55) mm present in the superior aspect of left kidney (Fig-4). CT scan revealed a smooth, well-circumscribed cystic mass having uniform density measuring (70X55) mm present in the left adrenal region behind the spleen and tail of pancreas pushing the left kidney downwards (Fig-5). There was no

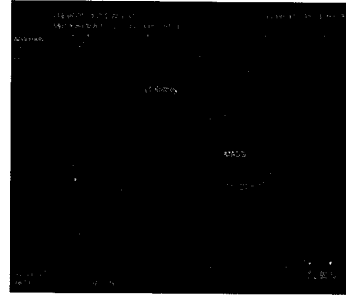


Fig 4 : USG of case II showing the large cyst



Fig 5 : CT scan of case two showing large left adrenal cyst

contrast enhancement in the lesion but a septation and a small calcification were identified. He also diagnosed as a case of left adrenal cyst and planned for laparoscopic adrenal cystectomy. We performed the procedure successfully by using 4 ports below the left costal margins. We exposed the cyst by mobilizing the left colon and spleen along with tail of the pancreas. The cyst was thick walled. The part of the cyst wall was excised, content was evacuated and cyst was marsupialized. The total duration of operation was one hour. There was no change of pulse and blood pressure during the procedure. The perioperative and postoperative period was smooth and uneventful and patient left the hospital on second postoperative day and resumed his official activities from 7th postoperative day. Cosmetic result was also very good (Fig-6).

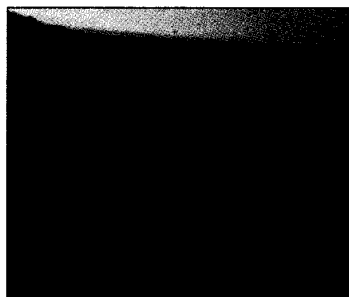


Fig 6 : Post operative cosmetic results of lap adrenal cystectomy of case two

Discussion

An autopsy study reported a 0.06% incidence of adrenal cysts in the population⁴. Before 1986, only 66 cases were reported in Japan⁵. Improvement in diagnostic technology now makes it possible to identify a symptomatic or non-functioning adrenal tumors, including adrenal cysts⁶. A study conducted in Japan, they found 232 cases of adrenal cysts before 1999 and added one personal case to make a total of 233 cases. Adrenal cysts have been reported in patients of all ages⁷. Their series ranged from birth to 77 years (average age: 45.2 years). It appears that adrenal cysts occur more frequently in women than in men in the ratio of 62: 38. We dealt two cases of adrenal cyst, one is male and another is female. Adrenal cysts are usually unilateral and show no tendency to develop on either side². The side of the cyst was indicated in 228 case reports. The right side was involved in 96 cases (42.1%), the left in 131 cases (57.5%) and there was one case with bilateral involvement (0.4%). Most adrenal cysts are asymptomatic, because of their small size² but here we reported two cases of symptomatic adrenal cysts. In 48 cases (21.6%) of their series, adrenal cysts were discovered incidentally. In the case of large cysts, symptoms occur in relation to their displacement of normal organs⁸. Gastrointestinal symptoms (i.e. epigastric distress, abdominal distention) are frequently present, one of our patient had gastrointestinal symptoms. There is an association between hypertension and adrenal cysts but the relationship has been poorly documented⁹. Six patients in their series showed remission of hypertension on cyst removal. However, if the mass cannot be differentiated from a non-functioning adrenal carcinoma, surgical treatment is justified. Suzuki M, et al. suggested that adrenal cysts typically demonstrated low intensity on T1-weighted images and very high intensity on

T2-weighted images¹⁰. The advantages of angiography are that the blood supply of the lesion may help define its organ origin and that an avascular mass may suggest the presence of a cyst⁵. Clinicians should take the invasiveness of this modality into account and use it on patients with lesions that may be malignant or of unknown origin.

Treatment of adrenal cysts depends on the underlying pathology, size of the cyst, associated symptoms and the occurrence of complications¹¹. Many Japanese authors recommend surgical exploration for accurate histological diagnosis to rule out malignancy and functioning tumor. We explored both of our cases laparoscopically and in one case we excised the entire cyst and in another case partial excision and marsupialization was done. Tanuma Y et al⁴. reviewed the surgical treatment 213 cases of adrenal cysts. Among them only 3.5% cases were treated by laparoscopic procedure either total or partial cystectomy. We did both of our cases laparoscopically. Since the early 1990s, laparoscopic adrenalectomy has been shown to be safe and offers fast recovery and shorter hospital stay¹¹. Some authors suggest that small cysts with thin walls and contents that are near water density are probably benign and can be managed by percutaneous aspiration or watch and follow^{12,13}. It is now well accepted that adrenal cysts may be classified into four categories: (i) parasitic (0%); (ii) epithelial (7.5%); (iii) endothelial (29.6%); and (iv) pseudocysts (62.9%).² Pseudocysts are the most common adrenal cysts. These are formed when hemorrhage occurs within a normal or pathological gland with encapsulation, resulting in a thick fibrous wall without an endothelial wall^{2,7}.

Conclusion

Adrenal cysts are uncommon and most are found incidentally. Symptoms are usually related to the size and local pressure effect of the cysts. Occasionally symptoms are secondary to complications, such as, intra cystic haemorrhage, rupture or infection. In the majority of cases, the cysts should be excised for accurate diagnosis or relief of symptoms and prevention of complications. Laparoscopic cystectomy should be adopted because it has been shown to be safe and offers fast recovery and shorter hospital stay.

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