Large Adrenal Pseudocyst Presenting with Epigastric Distress and Abdominal Distention

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Key Words

Adrenal gland · Pseudocyst

Abstract

Objective: We report a patient with a large adrenal pseudocyst presenting with epigastric distress and abdominal distention. **Clinical Presentation and Intervention:** A 35-year-old man presented with a 1-year history of non-specific epigastric distress and abdominal distention. Routine laboratory tests and endocrine function tests were within the normal ranges. Magnetic resonance imaging (MRI) revealed a large left adrenal cyst. Adrenal cyst showed low intensity on T₁-weighted MRI images and high density on T₂-weighted MRI images. The patient underwent surgery, and the cyst was completely removed. Histological examination showed that the cyst wall consisted of hyalinized fibrous tissue without an epithelial or endothelial lining, and a diagnosis of an adrenal pseudocyst was made. Symptoms resolved after pseudocyst removal. **Conclusion:** The report showed a patient with adrenal pseudocyst, a rare and uncommon condition that was diagnosed on MR images and confirmed by histology. The epigastric distress and the abdominal distention resolved after the pseudocyst was surgically removed.

Introduction

In 1903, Doran [1] reported the first case of adrenal cyst described by Greiseliuss in 1670. By 1989, only about 300 cases had been reported [2]. Recently, the development of diagnostic techniques such as computed tomography (CT) and magnetic resonance imaging (MRI) has improved our ability to detect functioning and nonfunctioning adrenal tumors.

Adrenal cysts are relatively rare lesions and most of them are nonfunctioning and asymptomatic [3, 4]. Adrenal pseudocyst is the most common of adrenal cystic lesions. A substantial proportion of the adrenal pseudocysts reported in early studies were small, incidental findings in elderly individuals at the time of autopsy [5]. However, in more recent studies of surgically excised adrenal pseudocysts, those affected have been young and middle-aged adults. We report the case of a large adrenal pseudocyst presenting with epigastric distress and abdominal distention.

Case Report

A 35-year-old man presented with a 1-year history of nonspecific epigastric distress and abdominal distention. He was not taking any medication. On clinical examination, his blood pressure was 120/80 mm Hg without orthostatic changes or tachycardia. A

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Fig. 1. T₁-weighted (a) and T₂-weighted (b, c) images show low and high intensity mass, measuring 9 × 9 cm, respectively.

clearly defined mass occupied the left hypochondrium. Laboratory work, including initial blood counts and blood chemistry, was entirely normal. Hormonal examination, including 24-hour urine catecholamines, 17-hydroxycorticosteroids, 17-ketosteroids, serum catecholamines, cortisol, adrenocorticotrophic hormone, aldosterone and plasma renin activities were all within normal limits. MRI revealed a 9-cm well-defined mass, which appeared less intense than the liver in the T₁-weighted image (fig. 1a) and more intense than the liver in the T₂-weighted image (fig. 1b), with a multiloculated cystic appearance (fig. 1c) arising from the left adrenal gland. The left kidney was displaced downward by the mass.

At surgery, a smooth, thick-walled cystic mass, measuring 9 × 9 × 8 cm, arising from the left adrenal was found. The mass was completely removed. The cyst originated from only one site of adrenal tissue. The cystic space was filled with yellow-brown amorphous material. Most of the cyst wall was studied. The histological examination showed that the cystic wall was 1.1 cm thick and con-

sisted of dense hyalinized compact fibrous tissue, with scattered infiltration of phagocytes without an epithelial or endothelial lining (fig. 2). There were areas of dystrophic calcifications within the fibrous tissue. The pseudocyst contents included hemosiderin-laden macrophages, red blood cells, fibrin, degenerated collagen, calcification, and cholesterol clefts. A rim of normal adrenal tissue was found compressed within the cystic capsule, and a diagnosis of an adrenal pseudocyst was made (fig. 2). Immunohistochemistry was not used because the exact diagnosis was performed by light microscopic findings. The patient's postoperative course was uneventful, and he was discharged 7 days after the operation. Epigastric distress and abdominal distention resolved after pseudocyst removal.

Fig. 2. Histological view of adrenal pseudocyst and residual atrophic adrenal gland (left). The pseudocyst wall is composed of dense and thick hyalinized fibrous tissue, with areas of dystrophic calcification, cholesterol clefts, degenerated collagen, and old hemorrhagic areas. Hematoxylin and eosin staining. Original magnification $\times 40$.

Discussion

Early studies [6] of all types of adrenal cysts showed that they were small; incidental findings at autopsy in elderly patients and recent studies of surgically excised adrenal pseudocysts have suggested that young and middle-aged adults are most commonly affected [7, 8]. Our case supports the results of these most recent studies.

Most adrenal cysts are asymptomatic because of their small size. Symptoms that derive from adrenal cysts include pain overlying the cyst posteriorly, with or without anterior radiation, and vague gastrointestinal complaints [9]. Symptoms are usually associated with large cysts, presumably due to compression of surrounding viscera [9]. Gastrointestinal symptoms (epigastric distress, abdominal distention) are frequently present as well as in our case.

Radiologic examination may or may not permit a preoperative diagnosis of adrenal cyst [10]. Abdominal roentgenograms usually show a soft-tissue mass. Suzuki et al. [11] suggested that adrenal cysts typically demon-

strated low intensity on T_1 -weighted images and very high density on T_2 -weighted images. However, if the mass cannot be differentiated from a nonfunctioning adrenal carcinoma, surgical treatment is justified.

The differential diagnosis of adrenal cysts is essentially that of upper abdominal space-occupying lesions and includes mesenteric cysts, retroperitoneal tumors, empyema of the gallbladder, urachal cysts, and solid adrenal tumors [12].

Treatment of adrenal cysts depends on the underlying pathology, size of the cyst, associated symptoms and the occurrence of complications [13]. Many authors recommend surgical exploration for accurate histological diagnosis to rule out malignancy and functioning tumor [14] as was done in the present case.

Adrenal pseudocysts are cystic lesions that consist of a thick fibrous tissue wall devoid of epithelial or endothelial lining and arising as a result of hemorrhage within a normal or pathologic adrenal gland [15]. The capsule is usually densely fibrous with numerous cystic spaces and filled with fibrin thrombus and necrotic debris. Immuno-

histochemical studies have shown a strong expression of factor VIII-related antigen, laminin, and CD34 in the absence of epithelial membrane antigen or keratin expression, suggesting a vascular origin for these lesions [7, 16]. They present the most common variety (56%) of all adrenal cystic lesions, with other pathologic findings reported, including lymphangiomatous endothelial cyst, cystic pheochromocytoma, or adrenocortical tumor, cystic degeneration in an adrenal malignancy, and hydatid disease [15]. CT and MRI appearances are nonspecific, showing thickening of the cystic wall and occasional calcification.

Heterogeneous areas within the cyst may simulate malignancy and are the result of old or recent hemorrhage.

Conclusion

Adrenal pseudocysts are uncommon. Symptoms are usually related to the size and local pressure effect of the cysts. The cysts may be excised for accurate diagnosis or relief of symptoms.

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