Giant pseudocyst of the spleen: a case report and review of the literature

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ABSTRACT

Splenic cysts are rare lesions. Primary cysts have a cellular lining that can be caused by congenital events or parasitic infection (Echinococcus). Secondary cysts have no cellular lining and may be of hemorrhagic, serous, inflammatory, or degenerative origin. We report a case of pseudocyst treated successfully by splenectomy, and we review the literature.

KEY WORDS: Splenectomy, Splenic pseudocyst

CASE REPORT

A 16-year-old boy from Bulgaria was admitted with complaints of a progressively painful lump, of 3-week duration, in the left hypochondrium. A vague history of trauma to abdomen was present. There were no symptoms like vomiting or constipation pertaining to the gastrointestinal tract. Past history was negative for malaria and hematological disorders. Physical examination showed good general condition. In the area of the left hypochondrium, a mass measuring 10–15 cm with smooth surface and cystic consistency was palpated. The liver was not enlarged. The laboratory investigations were within normal limits. Clinically, a splenic cyst or pseudocyst of the pancreas was suspected.

The plain X-ray of abdomen in erect position showed that the stomach was pushed to the right. The ultrasonography (US) revealed a 10–15 cm cyst in the spleen. Computed tomography (CT) indicated the presence of a big spleen with cyst in relation to the medial surface of the spleen [Figure 1]. There was an irregular nodularity and a septum within the mass at the inferior lateral border of the splenic aspect. The mass was otherwise well circumscribed and homogenous. There were plenty of internal echoes and the pancreas was not visualized. There was no free fluid in the abdomen and the kidneys were normal.

An exploratory laparotomy was performed by the left transverse incision. There was no fluid in the peritoneal

Figure 1: Computed tomographic scan showing a splenic cyst in relation to the medial surface of the spleen
cavity. There was a large cyst arising mainly from the upper pole of the spleen involving the hilum, displacing the stomach towards the right, and the colon inferiorly. Plenty of thick adhesions between the cyst and the parietal peritoneum were present. The operative treatment included splenectomy. No drain was kept. Postoperatively, the patient was kept on cephalosporin prophylaxis. Histology reported false cyst without cellular lining. Examination of the aspirated fluid showed proteinaceous material, no pus cells, and protein of 7g%. Fluid culture showed growth of Escherichia coli. The patient was discharged on day 6 after surgery, and postoperative follow up was routine and uneventful.

DISCUSSION

Pseudocysts in the spleen are four times more common than true cysts. In 1829, Andral[5] described the first nonparasitic cyst of the spleen. Robbins (1978) reported a series of 42 327 autopsies over a 25-year period, which revealed only 32 patients with splenic cyst. Subsequently, isolated case reports have appeared in the literature. In 1953, Fowler published a collective review to include 265 isolated case reports have appeared in the literature. In 1953, Fowler published a collective review to include 265 cases of nonparasitic splenic cysts. Until 1978, approximately 600 surgical and autopsy cases of such cysts have been reported in the world literature.[2]

According to their etiology, the spleen cysts might be of two types: parasitic and nonparasitic. According to the presence of surface epithelium, the nonparasitic cysts are true and false (pseudocysts). Pathogenesis of the true cysts is not entirely clarified and there are many theories by different authors. Pseudocysts are usually formed after organized hematoma, which are spread subcapsularly and intraparenchymal. Splenic cysts have been classified by Martin[6] as follows: type I cysts are primary (true) cysts with a cellular lining, either parasitic or nonparasitic in nature. Nonparasitic type I cysts are either congenital or neoplastic. Type II cysts are secondary (false) cysts without cellular lining.

False or secondary cysts, which constitute 75%[11,17] of all nonparasitic cysts, are mostly of traumatic origin, as in our case, but may also be of infectious and degenerative origin. Some conditions are pointed out below:

1. Intrasplicenic pancreatic pseudocysts.[8]
2. Subcapsular or intraparenchymal hematomas of the spleen, appeared in the course of acute or chronic pancreatitis.[9]
3. Spontaneous subcapsular hematomas in the mononucleosis.[3]
4. Spontaneous subcapsular hematomas, associated with cytomegalovirus infection.[10]
5. Hematomas, connected with use of the cocaine.[11]
6. Hematomas of the spleen, as a complication after fibroptic colonoscopy.[12]

Patients with congenital splenic cysts are younger than those with false cysts, and marked female preponderance is observed.[13,14] Most patients with splenic cysts have minor nonspecific symptoms, and the diagnosis is easily made by noninvasive imaging. Cysts arising from adjacent organs, especially the tail of the pancreas, can be differentiated by ultrasonic examination.

Diagnosis of the pseudocysts is generally based on the radiological examination [US, CT, magnetic resonance imaging (MRI)].[15] For diagnostic specification of the cyst’s character, puncture and aspiration of content and cytological investigation is offered. Aspiration of the cyst content will not further differentiate true from false cysts or subclassify the congenital cyst.[1] By histology, it is possible to know whether the cyst is primary or secondary (no cellular lining) and to determine its precise nature.[14] Surgery is primarily recommended for the prevention or treatment of complications. There are many approaches in conformity with the size of the cyst, the condition of the parenchyma of the spleen, and the anatomic proximity with the neighboring organs and structures. The following methods of treatment are suggested:[16]

- Splenectomy or resection of the spleen.
- Resection of the cyst if the diagnosis is precise.
- Laparoscopic methods,[17,18]
- Percutaneous puncture methods.[15]

Splenectomy was the treatment of choice for pseudocysts of the spleen for many years, but the attitude became more conservative after 1979, because of overwhelming life-threatening septicaemia, especially in children who underwent splenectomy.[19] Although the literature offers the possibility of providing conservative or semiconservative treatment, in our case, the cyst was bigger than the residual splenic parenchyma, which reduced the spleen to a small remnant, for which reason it would have been impossible to perform a simple cystectomy to preserve the spleen. The percutaneous aspiration represents the final logical progression in favor of conservative approach.[17] In spite of partial splenectomy being the preferred approach, Brown et al[41] reported that a total splenectomy was required in one out of seven patients, where the cyst was large, encompassing hilum with only a tiny island of splenic tissue.

The search of the available literature revealed only one previous report of partial splenectomy.[19] A further conservative treatment is laparoscopic treatment and includes
performing a cyst-peritoneal window by using a minimally invasive technique.\[^{17}\] Recently, Volk et al\[^{20}\] successfully managed a post-traumatic splenic cyst with percutaneous local sclero-therapy, using ethanol as a sclerosing agent.

In our patient, external examination of the cyst did not rule out the possibility of an infected hydatid cyst and a safer approach of total splenectomy was followed. Partial splenectomy is limited by technical difficulty, risk of recurrence, etc. Hence, total splenectomy, vaccination, and long-term antibiotic prophylaxis is a viable alternative when it is needed.

CONCLUSIONS

Splenic pseudocysts have traditionally required splenectomy because of the risks imposed by partial splenectomy or excision of the cyst lining. The diagnosis of the pseudocyst in the spleen was possible only after the surgical spleen removal when the absence of an epithelial lining was histologically found. Splenectomy is the treatment of choice for pseudocysts of the spleen and is recommended to eradicate symptoms produced by the cyst and to prevent potential complications. The indications for total splenectomy are large cysts and involvement of the hilum.

REFERENCES