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Case Report

A HUGE SPLENIC CYST: CASE REPORT

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Abstract:

Splenic cyst is a relatively rare disease. They may occur secondary to trauma or even being more seldom due to parasitic infections, mainly caused by *ecchinococcus granulosus*. This patient had an atypical symptomatology, consisted mainly of fullness in the left upper abdomen and a palpable mass. Preoperative diagnosis was established with ultrasonography and computerized tomography. Immunohistochemistry allows differential diagnosis between epidermoid and mesothelial cyst. For many years, open splectomy was the accepted treatment. Laparoscopic partial splenectomy is a procedure for the treatment of splenic cysts, because it cures the disease preserving the splenic tissue. Complete splenectomy is reserved for cases in which cyst excision cannot be done otherwise.

Key words: Spleen; Epithelial cyst; Surgery, Laparoscopy

Introduction:

Splenic cysts are unusual in everyday surgical practice. They can be parasitic (hydatid), caused by the parasite Ecchinococcus granulosus, or nonparasitic[1,2]. Non-parasitic cysts are classified as primary (true, epithelial), lined by an epithelial cover (epidermoid, dermoid, and mesothelial), and secondary (pseudocysts, non-eptithelial), which are usually of post-traumatic origin[3,4]. Primary splenic cysts comprise 30-40% of the total and are encountered more commonly in children and young adults[5,6]. Most of the cysts are asymptomatic, and they are incidental findings during abdominal ultrasonography. The number of diagnosed splenic cysts seems to rise because of the increased use of abdominal imaging techniques[7].

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Laparotomy with splenectomy has been the method of choice for the treatment of primary splenic cysts [5,8]. However, the importance of the spleen in defence against infection in both adults and children is now recognized. Technical improvements in relation to imaging and operative surgery coupled with a wide appreciation of the segmental anatomy of spleen have lead to the procedure of splenic conservation. Herein, we present one case of non-parasitic large splenic cysts, their diagnostic evaluation and surgical management.

Case Report:

A 19 year-old boy was admitted with a presenting complaint of abdominal fullness. A blunt firm mass of approximately 26 cm x14 cm was palpable in the left upper abdomen, it moved with respiration and percussion node dull over the lump. Patient was healthy and other physical finding with in normal limit. A chest X-ray showed a mild elevation of the left hemi-diaphragm. Ultrasonography of the upper abdomen showed a giant cystic lesion with irregular echoic patterns. Computerized tomography confirmed the splenic localization of the cyst and demonstrated almost total displacement of the remaining splenic parenchyma. Compliment fixation test for ecchinococcus granulosus was negative. At laparotomy, a huge splenic cyst of approximately of

26 cm x18 cm maximal diameter was revealed, located in the middle of the splenic parenchyma, displacing it towards the splenic poles. Due to the cyst location, preservation of the spleen was considered impossible, and complete splenectomy followed. Histology report revealed that the cyst wall consisted of dense fibrous tissue, covered by stratified squamous or cuboid epithelium. Thus, the diagnosis of a primary epidermoid splenic cyst was established. The postoperative clinical course of the patient was satisfactory and was discharged on 7th postoperative day. He received a pneumococcal vaccine and chemoprophylaxis with oral cephalosporin. 3 month after surgery, the patient was found in excellent condition

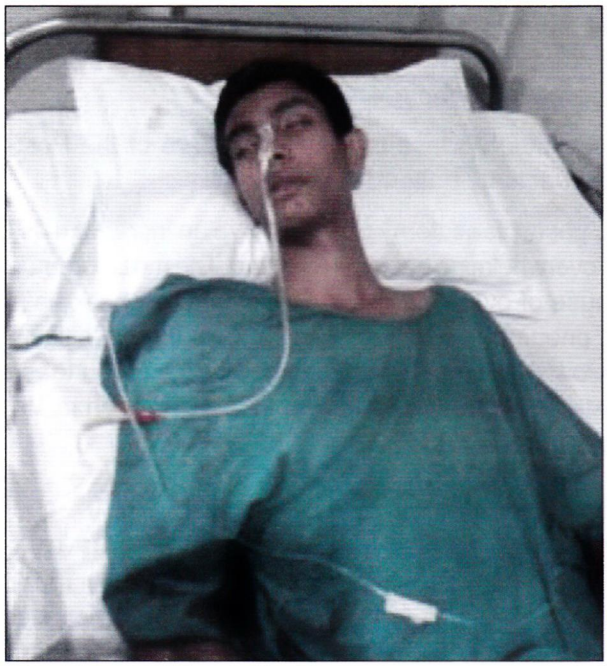

Fig.-1: *The Patient with splenic cyst*

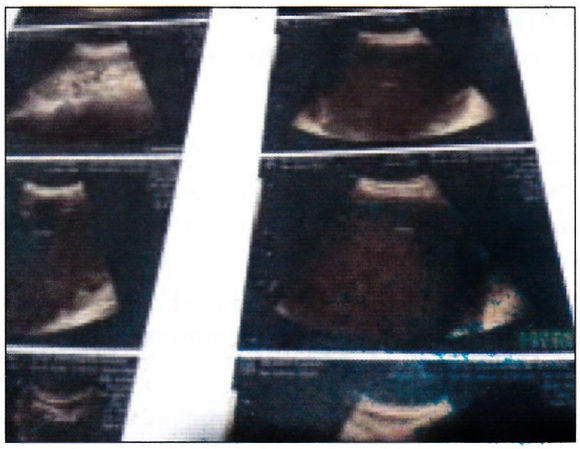

Fig.-2: *Ultrasonography of the patient.*

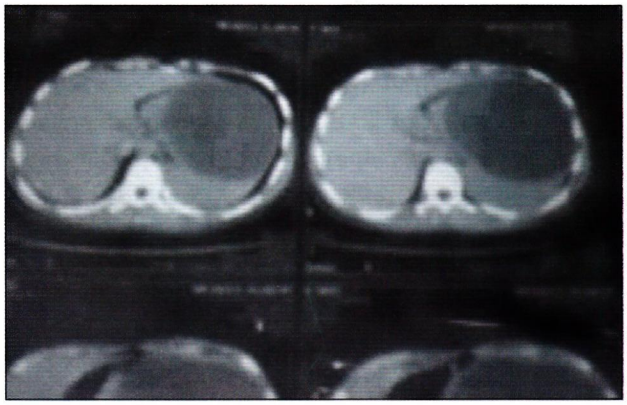

Fig.-3: *Computed tomography of splenic cyst.*

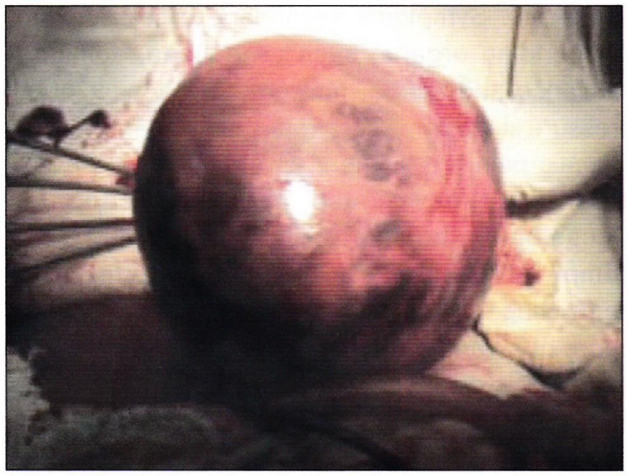

Fig.-4: *Splenic cyst.*

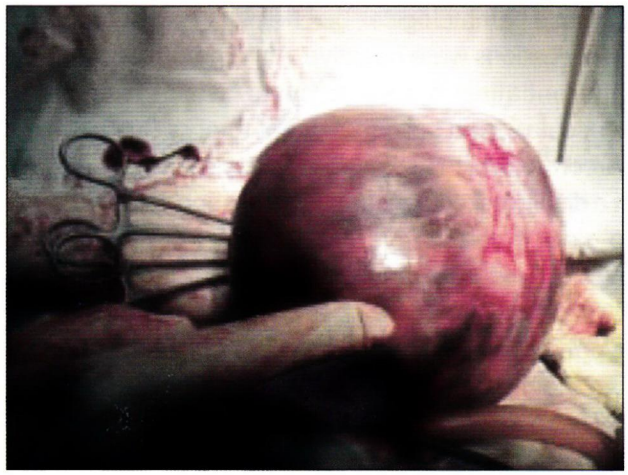

Fig.5: *Per operative view of splenic cyst.*

Discussion

Benign true non-parasitic splenic cysts cannot be clinically distinguished from other types of splenic cysts. They have an inner lining of epithelial cells and are usually of congenital etiology[3,6]. Pseudocysts have

an inner lining of connective tissue and are usually secondary to blunt trauma or hemorrhage in the splenic parenchyma, but the may also be of infectious and degenerative origin[9,10]. Both types of splenic cysts do not produce any specific symptoms, until they reach a significant size. Large cysts may cause atypical pain and heaviness in the left hypochondriac region, due to distension of the capsule or space-occupying mechanisms within the abdominal cavity, or they may present as a palpable mass[3,5,9]. Indeed, in our patients, symptomatology was atypical with a sensation of fullness and a palpable mass in the left upper abdominal quadrant, as well as mild dyspeptic symptoms. Symptoms secondary to pressure on surrounding organs, such as nausea, vomiting flatulence, and diarrhea may gradually appear. Also, pressure in the cardiorespiratory system may cause pleuritic pain or dyspnea, and irritation of the left diaphragm may cause persistent cough[10]. Occasionally splenic cysts may present with complications, such as infection, rupture and hemorrhage[9,11]. When a lump is detected in the left upper quadrant of the abdomen, it is necessary to exclude any disease associated with spelnomegaly, mononucleosis, fever of unknown origin, hemolytic anemia, chronic leukemias, collagen vascular disease, and liver diseases[12]. Serological studies are useful in excluding most of the above mentioned diagnosis. In our case hematological, biochemical, and serological investigations were negative. Angiography is useful in differentiating a splenic cysts, which is usually avascular, from solid malignant tumors (lymphoma, sarcoma), which usually have neoplastic vasculature in a disorganized pattern[10,13]. Ultrasonography is able to see that the cysts are either anechoic or hypoechoic and they have a smooth thin wall[14], whereas solid tumors are either isoechoic or hypoechoic. In addition, computerized tomography and magnetic resonance imaging may give most of the necessary information, regading the morphology of the cyst, the composition of the cystic fluid, the location in the spleen, the position of the cyst and its relationship with the surrounding tissues. Calcifications of both the primary and secondary cysts are frequently found, which are useful in diagnosing cysts from other causes of splenomegaly. In our case ultrasonography and computerized tomography had preoperatively set the diagnosis of solitary unilocular noncalcified splenic cysts.

Due to the increased risk of complications in splenic cysts with a diameter larger than 4-5 cm should be managed surgically[9,11,15], because conservative options, such as percutaneous aspiration or sclerosis, do not result in long-term control[5,8,16]. There are different types of surgical treatment according to the patient's age and the size, location and nature of the cyst. The classical approach to splenic cysts has been open complete splenectomy[5,8,17]. However there was a trend towards more conservative surgery after the 1970s because of the appearance of overwhelming life-threatening septicemia, especially in children who underwent splenectomy[5,10,18]. Indeed, the spleen plays an important role in hematopoiesis, immune function, and protection against infections and malignacies[(5,19)]. Today the optimal treatment options are partial splenectomy, marsupialization, or cyst decapsulation (unroofing), accessed either by open laparotomy or laparoscopy[5,11,19,20,21].

Infectious Disease Issues in the Care of the Post-Splenectomy Patient:

All post splenectomy patients have an increased risk of overwhelming bacterial infection. The most common cause of overwhelming post-splenectomy sepsis is S. pneumoniae, however all of the pathogens listed below can be a source of serious infection in these patients like as S.pneumoniae, H. influenza, N. Meningitidis, Malaria.

Vaccinations :

Individuals undergoing splenectomy should receive the age appropriate pneumococcal vaccine, H. influenza and quadrivalent meningococcal vaccine (the latter for those ≥ 2 years of age) if possible up to three weeks prior to removal of the spleen to optimize the immune response. When this is not feasible and for emergency splenectomy, vaccination should be initiated as soon as possible after the patient's recuperation.

Vaccination: Recommendations:

Current recommendations for the post splenectomy patient to give a pneumococcal vaccine and a booster dose after 5 years to be given.

- Quadrivalent conjugated meningococcal vaccine should be given to all asplenic individuals ≥ 2 years of age.
- hemophilus influenza vaccination for younger children.

Prophylactic Antibiotics

The issue of antibiotic prophylaxis in these patients is controversial for several reasons. The risk of disease, while lifelong is variable. The only regimen which has been studied is penicillin prophylaxis for patients with functional asplenia from sickle cell anemia. Resistance to penicillin (and other antibiotics) is a growing concern, so its efficacy is currently presumed to be lower. In addition, compliance with an indefinite daily regimen is extremely difficult. The patients who are most likely to benefit from prophylaxis are:

- Children < 5 years of age.
- Individuals who have had splenectomy within the past year.
- Those with an underlying immunodeficiency in addition to splenectomy.
- Penicilin G: Pediatrics: 250 mg. p.o. b.i.d (less than 5 years, 125 mg. p.o., b.i.d.)
- Alternatives : Amoxicillin: Pediatrics : 20mg/kg/ day divided b.i.d.
- As there are currently no ideal second line oral agents, allergy to the penicillins should be assessed carefully.

No data are available in adults and antibiotic prophylasix is generally not recommended this population. As always, patients need to be evaluated on an individual basis.

Conclusion :

Splenic cysts larger than 5 cm or symptomaic ones should be treated surgically, trying to preserve as much of splenic parenchyma as possible. If the cyst is very large and almost completely covered by splenic parenchyma, or if it is located in the splenic hilum, complete splenectomy is recommended, because of the risk of intractable bleeding from the spleen, partial cystectomy (unroofing) could be an acceptable procedure in the majority of other cases. The laparoscopic approach seems to be a safe procedure, having all the benefits of minimally invasive surgery.

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