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Case Report

Non Parasitic Splenic Cysts- Study of 4 Cases

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Abstract: Objective: Splenic cysts are very rare with reported incidence of only 0.07% in a large autopsy study.It can be either primary or secondary cyst.The purpose of this paper is to describe the various cystic lesions of the spleen diagnosed in the Department of Pathology, Government Medical College, Kottayam. **Methods:** All splenic lesions received in our department between January 2016 and January 2018 were retrieved and reviewed for splenic cysts. There were 4 cases of splenic cysts. The history, radiological findings, all the relevant investigations and treatment given were collected. All histological materials were reviewed in detail. **Results:** Among 4 cases, 3 were primary epithelial splenic cyst and 1 case was secondary (pseudocyst) splenic cyst. Primary epithelial cyst showed cyst wall lining by cuboidal / squamous epithelium. In secondary cyst there was no definite lining epithelium. **Conclusion:** Splenic cysts are rare with only 4 cases diagnosed in our department for the past 2 years. The etiological diagnosis of the cysts is not easy always. It is usually arrived from the exclusion of infectious causes (bacterial, parasitic), exclusion of trauma and neoplastic disorders. Splenectomy was the treatment of choice in the past. Nowadays it is replaced by conservative surgeries.

Keywords: Splenic cyst, epithelial cyst, splenectomy.

INTRODUCTION:

Splenic cysts are very rare with reported incidence of only 0.07% in a large autopsystudy and only 0.5% among all the splenectomies done (Palmieri, I. *et al*., 2005; Lucandri, G. *et al*., 2011). Splenic cysts can be infectious, congenital or traumatic. It can be either primary or secondary cyst.Primary cysts include epidermoid cysts, congenital cyst and parasitic cysts. Secondary cysts are pseudocyst which has no definite lining. Most have minimal symptoms and some are found incidentally (Martin, J.W.1958). The prevalence of splenic cysts has increased recently secondary to increased detection with computerized tomography (CT) and the non-operative management of some splenic injury. The purpose of this paper is to describethe various cystic lesions of the spleen diagnosed in the Department of Pathology, Government Medical College, Kottayam.

MATERIALS AND METHODS:

The study was conducted over a period of 2 years. We received about 49 splenectomy specimenswhich included both total and partial splenectomy.Among that 4 cases were of cystic nature. The slides were reviewed. Clinical details of the patients and radiological findings were obtained. The other splenic lesions include chronic venous congestion, traumatic injury and haematological lesions.

Case no. 1: A 19 year old female presented with abdominal pain over a period of 1 month. Carbohydrate Antigen (CA) 19-9 was 1536U/mL. CECT abdomen showed a splenic cyst and total splenectomy was done.

Case no.2: A 12 year old male presented with dull abdominal pain. USG abdomen showed a splenic cyst. Partial splenectomy was done.

Case no.3: A 15 year old female presented with fullness in left upper abdomen. CA 19-9 was 1328 U/mL.CECT abdomen showed splenomegaly with large multiloculated multiseptated cystic lesion. Splenectomy was done.

Case no.4: A 75 year old female was incidentally detected to have a splenic cyst in imaging done following a fall. CECT abdomen shows a well-defined

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cystic lesion with a thick calcified wall. Splenectomy was done.

RESULTS:

Among the 4 cases, 3 cases were primary epithelial cyst and one case wassecondary cyst. The details are summarised.

Case no.1: The splenectomy specimenweighing 570gm. Cut section showed a uniloculated cyst measuring 13X10cm filled with brownish fluid and whitish inner wall.

Figure1: Epidermal cyst: Cut section of spleen shows a uniloculated cyst with whitish inner wall.

The microscopy showed the cyst walllined by stratified squamous epithelium. The subepithelium shows fibrocollagenous tissue admixed with lymphocytes and flakes of keratin. A diagnosis of Primary splenic epithelial cyst (Epidermal cyst) was made.

Case no.2: The partial splenectomy specimenweighing 120g. Cut section showed a uniloculated cyst measuring 6.5X 5.5 cm which extruded clear fluid. The microscopy showed the cyst walllined by flat cuboidal epithelium. A diagnosis of Primary splenic cyst (Epithelial cyst) was made.

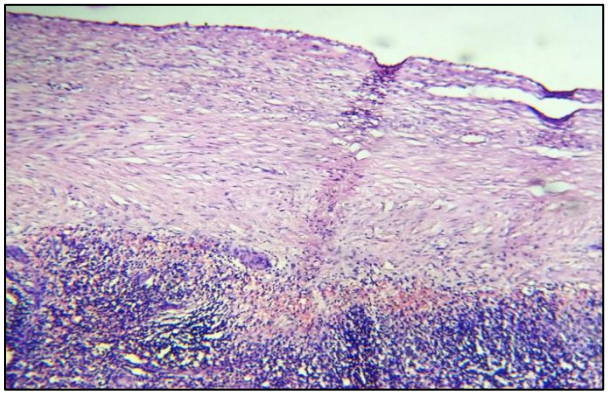

Fig 2a

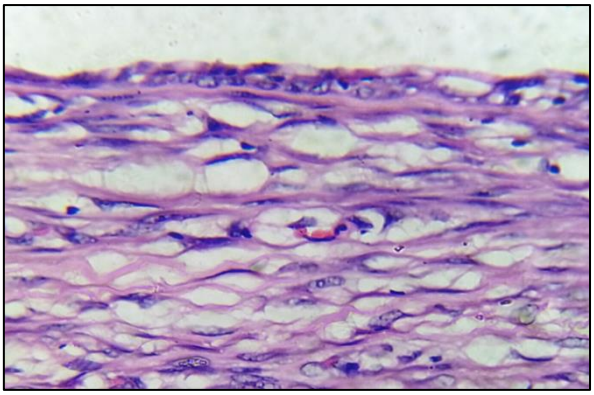

Fig 2b:

Figure 2 a&b: Primary splenic cyst: Microscopy shows the cyst wall lined by flat cuboidal epithelium. (H&E 10X and H&E 40X)

Case no.3: The splenectomy specimenweighing 480gm. Cut section showed a uniloculated cyst measuring 12 X 10cm which wasfilled with haemorrhagic dirty material and trabeculated inner wall. The microscopy showed the cystlined by stratified squamous epithelium.A diagnosis of Primary Splenic epithelial cyst (epidermoid cyst) was made

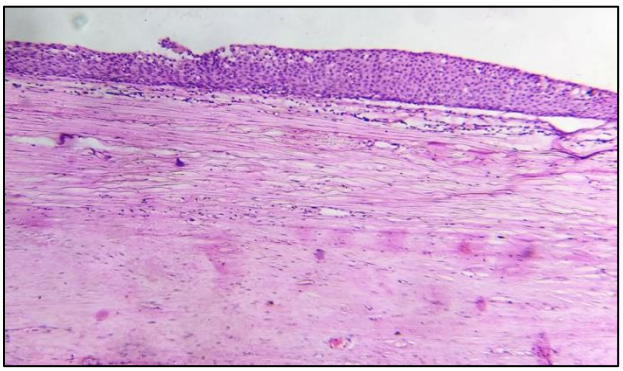

Figure3. Epidermoid cyst: Microscopy shows the cyst wall lined by stratified squamous epithelium (H&E: 10X)

Case no.4: The splenectomy specimenweighing 400 gm. Cut section showedbiloculated cyst largest measuring 8X 6cm which was filled with yellowish fluid and the wall is calcified. The microscopy showed the cyst walllined by hyalinised thick calcified fibrous tissue. There was no definite epithelial lining. A diagnosis of Secondary cyst (pseudocyst) was made.

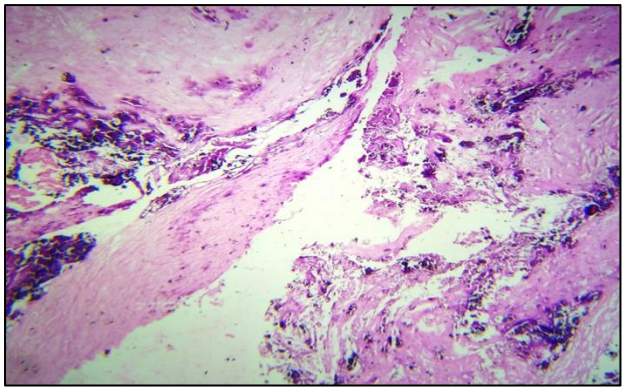

Figure 4: Pseudo cyst: Microscopy shows hyalinised wall with thick calcified fibrous tissue (H&E 10X)

DISCUSSION:

Splenic cysts are rare, usually discovered incidentally. There are many classifications of the splenic cysts. According to Martin(Fowler, R. H. 1953), the splenic cysts are

1. **Type 1**-primaryor real cysts (parasitic and non–parasitic)
2. **Type 2**-secondary or pseudo–cysts (post–traumatic, degenerative, inflammatory)

According to Fowler (Iorga, C.,*et al*.,2011), the splenic cysts are classified as primary cysts (with endocystic epithelial lining) and secondary cysts (without epithelial lining).

PRIMARY CYSTS ARE FURTHER CLASSIFIED AS:

1. Congenital cysts
2. Inflammatory cysts
3. Post-traumatic cysts (with cellular lining)
4. Neoplastic benign cysts (dermoid, epidermoid, lymphangioma, haemangioma)

SECONDARY CYSTS ARE CLASSIFIED AS

1. Traumatic cysts
2. Degenerative cyst

Depending on the causative agent it can be divided into two types: parasitic cysts and non-parasitic cysts (congenital, traumatic, neoplastic and degenerative)

CLINICAL FEATURES:

Majority of the splenic cysts are detected incidentally, but in some cases it may present as upper abdominal pain, left shoulder pain and urinary symptoms due to the compression of the left kidney. Somecysts are diagnosed only during surgery, either during a surgical intervention for some other pathology or during a surgical intervention due to the complications of the cyst such as rupture, haemorrhage or abscess (Iorga, C. *et al*., 2011).

RADIOLOGY:

USG is a good non-invasive tool for screening and confirming the cystic mass.In USG the cyst appears as an anechoic mass with thin walls and septations or irregular walls. Complex cysts may show calcific foci.

CT and magnetic resonance imaging (MRI) may give details, regarding the morphology of the cyst, the nature of fluid, the exact location and its relationship with adjacent structures(Robertson, F.,*et al*.,2001) . On T1-weighted MRI images, the cyst is hypo intense while on T2, it is hyper intense.

EPITHELIAL (PRIMARY) CYSTS:

It constitutes about 10% of all nonparasitic cysts of the spleen. Theyare seen mainly in children or in young adults and are usually solitary, but can be multiple. Grossly it shows a glistening inner surface with marked trabeculation. Microscopy shows the wall lined by columnar, cuboidal (mesothelial-like) or squamous epithelium. When the lining is squamous it is termed as epidermoid cyst) (Campbell, J.R.B. E. 1973) The cyst fluid may contain cholesterol crystals, breakdown products of haemorrhage or protein particles.Mucinous epithelial cysts can also occur in association with pseudomyxoma peritonei.

The stratified epithelium lining these cysts is immunoreactive for carcinoembryonic antigen (CEA) and CA19-9 and these markers can be elevated in the serum(Higaki, K.,*et al*.,1998). Henceit can be mistaken for malignancy especially pancreatic malignancies and surgeries may be done for the same.

IHC mayhelp in distinguishing mesothelial cyst from epidermoid cyst as they are positive for calretinin and cytokeratin and negative for CEA and CA 19-9 (10. Bürrig, K. F. 1988)

The histogenesis of splenic cyst is not clear. Many hypotheses were proposed which include embryonic inclusions of epithelial cells, invagination of capsular surface mesothelium and a monodermal teratomatous nature (Rosai, J.R., & Ackerman's Surgical Pathology. 2011)

PSEUDO CYSTS (FALSE OR SECONDARY CYST):

It constitutes approximately 75% of the nonparasitic cysts of the spleen (Garvin, D. F. (1981) Majority of these cysts are solitary and asymptomatic. Trauma is the most likely etiologic factor. The wall is composed of dense fibrous tissue with no epithelial lining and it often gets calcified. The cyst contains mixture of blood and necrotic debris. If the cyst ruptures it may lead to massive haemoperitoneum (Rosai, J.R., & Ackerman's Surgical Pathology. 2011).

So far approximately 800 cases of splenic cysts have been reported. We report 3 cases of primary epithelial cyst lined by cuboidal / squamous epithelium and 1 case of pseudo cyst with similar clinical presentation.

MANAGEMENT:

The treatment of the splenic cysts remains the subject of controversy. However surgery is indicatedin the case of symptomatic cysts, complicated cysts, as well as if the cyst is of 4–5 cm.In the past, splenectomy was the treatment of choice for splenic cysts. Now, the approach is changed towards conservative surgery in the view of overwhelming sepsis following splenectomy. It is possible to dothese procedures through classical or laparoscopic surgery.Marsupialization or fenestration are indicated for superficial cysts, but they have a high recurrence rate(Vo, Q.D.,*et al*.,2013).

PROGNOSIS:

The importance of splenic cysts is that they have a potential to rupture, to get infected or to bleed. Cysts with a diameter > 5 cm are more likely to rupture and may result in a life threatening condition of haemoperitoneum(Ingle, S. B.,*et al*.,2014)

CONCLUSION:

The etiological diagnosis of the cysts is not always easy.It is usuallyarrived from the exclusion of infectious causes (bacterial, parasitic), exclusion of traumaand neoplastic disorders.However careful histopathological evaluation along with immunostaining may help to arrive at the correct diagnosis. The treatment has changed from total splenectomy in the past to splenic preservation methods recently in order to preserve the splenic function and to avoid untoward complications.The laparoscopic approach appears to be a safe procedure being a minimally invasive surgery (Macheras, A. *et al*.,2005)

FOLLOW UP:

Our patients have been followed up and they are doing well.

CONFLICTS OF INTEREST:

I declare that there are no conflicts of interest.

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