

Original Research Article

Feasibility of Splenic Conservation in Patients with Splenic Abscess: Experience from a Tertiary Care Centre

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Abstract: Abscess formation in the spleen is uncommon clinical problem and is normally associated with underlying diseases. Presentation is variable ranging from prolonged pyrexia to abdominal pain to frank peritonitis on account of rupture of abscess in peritoneal cavity. The diagnosis is often difficult. The continuum of treatment ranges from percutaneous approaches for aspiration of abscess to splenectomy. We evaluated eleven patients who were diagnosed as a case of splenic abscess and managed over six year period in a tertiary care centre of North India. The study highlights need of individualization of therapy ranging from appropriate antibiotics in conjunction with percutaneous/ open drainage, and/or splenectomy in order to conserve spleen in majority of patients.

Keywords: abscess; aspiration; open drainage; splenectomy

INTRODUCTION

Splenic abscess is rare entity with only few cases reported in literature [1, 2]. The diagnosis is difficult on account of its rarity, insidious onset and nonspecific clinical picture. The study presents retrospective analysis of patients with splenic abscesses, who presented with features of systemic sepsis managed successfully by splenectomy in two, open drainage in three, and percutaneous drainage in six.

MATERIAL & METHODS

Study was conducted at tertiary care centre of north India. Data of all patients diagnosed as a case of splenic abscess were retrospectively reviewed. Over a period of six years, eleven patients (7 female & 4 male) presented with symptoms of systemic sepsis and prolonged fever in which diagnosis of splenic abscess was made by ultrasound of abdomen & contrast enhanced computed tomography (CECT) (figure 1).

All the patients presented with intermittent fever of long duration. Clinical examination revealed

gross splenomegaly in two, features of peritonitis in three and tenderness on deep palpation in other six. All the patients gave history of adequate immunization as per schedule and none of them was immunosuppressed. Cardiovascular examination was unremarkable in all the patients. Laboratory examination was unremarkable except for the raised total leukocyte count. Liver function test, viral markers, tests for malaria and Kala azar were negative in all the patients.

RESULT

Demographic profile of all patients with splenic abscess is given in Table 1. Two patients with gross splenomegaly & abscesses underwent splenectomy. Exploratory laparotomy and drainage of splenic abscess was performed in three patients who presented with features of peritonitis. Ultrasound guided percutaneous aspiration was performed in other six patients. Broad spectrum antibiotics covering gram positive, gram negative & anaerobes was started which was further modified as per pus culture & sensitivity report.

Table-1: Demographic and Clinical Characteristics of Patients and Outcomes

Case no	Age/Sex	Presentation	Clinical examination	USG	Total Leukocyte Count	CECT abdomen	Intervention	Organism in pus specimen	Outcome
1	12/F	Fever x 2 month	Splenomegaly	Hepato splenomegaly with large abscess in spleen.	23,000	Hepato-splenomegaly with hypo attenuating conglomerate lesion in spleen suggestive of abscess with multiple retroperitoneal and mesenteric lymphadenopathy	Splenectomy & antibiotics	Staph aureus, E.coli	Recovered
2	18/F	Fever x 1 month	Deep tenderness left upper abdomen	Splenic abscess	17,400	multiple irregular hypodense lesions involving middle and lower pole of spleen largest measuring 40 ml.	USG guided Percutaneous aspiration & antibiotics	Acinetobacter	Recovered
3	17/F	Fever x 3 month Pain abdomen x 3 days	Guarding & rigidity whole abdomen	Ruptured splenic abscess	36,000	.....	Laparotomy, open drainage of abscess & antibiotics	Staph aureus	Recovered
4	14/F	Fever x 6 months	Tenderness upper abdomen	Splenic abscess	18,700	Splenomegaly with splenic abscess	USG guided Percutaneous aspiration & antibiotics	E. coli	Recovered
5	24/M	Fever x 2 months	Deep tenderness upper abdomen	Splenic abscess	16,400	.....	USG guided Percutaneous aspiration & antibiotics	E.coli	Recovered
6	20/F	Fever x 6 months Pain abdomen x 5 days	Guarding and rigidity over whole abdomen	Ruptured splenic abscess	24800	.....	Laparotomy drainage of abscess & antibiotics	Staph aureus, Acinetobacter	Recovered
7	24/M	Fever x 1 month Pain abdomen x 15 days	Splenomegaly	Hepatosplenomegaly with splenic abscess	17,600	Hepato-splenomegaly with multiple small abscesses in spleen	Splenectomy & antibiotics	E.coli	Recovered

8	60/F	Feverx15 days Pain abdomenx2 days	Generalized peritonitis	Hepatosplenomegaly with Ruptured splenic abscess	19,600	.....	Laparotomy, drainage peritoneal lavage & antibiotics	E.coli, Klebsiella	Recovered
9	29/M	Feverx2 month	Tenderness upper abdomen	Splenic abscess	26,000	.....	USG guided Percutaneous aspiration & antibiotics	E. coli	Recovered
10	43/M	Feverx3 month	Tenderness upper abdomen	Splenic abscess	18,000	.....	USG guided Percutaneous aspiration & antibiotics	Staph aureus, E. coli	Recovered
11	36/F	Feverx3 month	Tenderness upper abdomen	Splenic abscess	21,000	.....	USG guided Percutaneous aspiration & antibiotics	E. coli	Recovered

E. coli, Staph aureus, Acinetobacter & Klebsiella were the organisms cultured in the pus specimen retrieved from patients. All the patients

recovered and splenic conservation was achieved in nine out of eleven patients.



Fig-1: Computed tomography scan showing splenic abscess

DISCUSSION

Splenic abscess is an uncommon entity with overall reported incidence of 0.14-0.7% in autopsy series [3, 4]. The mortality ranges from 47% to 100% in absence of prompt detection and treatment [5]. The condition is usually seen in patients following abdominal trauma, splenic infarction or hematogenous seeding of the spleen from an infective focus elsewhere in the body. Other predisposing factors reported in literature are underlying malignancy, immunodeficiency status, diabetes mellitus, hematological disorders like sickle cell anemia, and heart diseases [6, 7]. Cause is often not identifiable in 80.6% of patients diagnosed as suffering from splenic abscess [5].

Clinical picture of splenic abscess is non specific and symptoms range from fever, left upper quadrant pain to diffuse abdominal pain. Most frequently observed laboratory finding of the cases with splenic abscess is leukocytosis.

There has been increasing recognition of splenic abscesses nowadays due to several factors including the widespread use of CT, increasing incidence of immunosuppressive states and the adoption of splenic preservation in blunt abdominal trauma.

CT scan is gold standard for diagnosis of splenic abscess because of its ability to pick even small abscesses, easily missed on USG, and may be useful for diagnostic / therapeutic aspiration [4, 8]. Management of splenic abscess is matter of debate. There are reports of successful management using only antibiotics [9, 10]. Published reviews in 1980s and 1990s advocate splenectomy as treatment of splenic abscess. Prompt surgical intervention in form of splenectomy has been recommended by Chun *et al.* once diagnosis of splenic abscess is made [11]. Nelken *et al.* described splenectomy as the mainstay of treatment except for those of fungal etiology [12]. Ooi *et al.* suggested that percutaneous drainage may be effective for selected cases but still described splenectomy as definitive [4]. However there is increasing acceptance and adoption of less invasive and spleen conserving treatments. Many centers employ percutaneous drainage with splenectomy being reserved for refractory cases [13-16]. Guided aspiration has been very encouraging and is recommended for its advantages like avoidance of surgery, decreased morbidity, shorter hospitalization, and preservation of splenic tissue for its immunological functions, and subsequent decreased chances of fulminant infections.

In our study all the patients presented with unexplained fever and leukocytosis. Diagnosis in all cases was made after radiological investigations. Patient with gross splenomegaly and abscess required splenectomy, patient with peritonitis required open drainage while percutaneous image guided aspiration and antibiotic therapy led to successful outcome in others.

CONCLUSION

Because of nonspecific signs and symptoms, early diagnosis of splenic abscess requires very high index of suspicion. Diagnosis must be entertained in patients presenting with unexplained fever / features of systemic sepsis, and confirmed by USG or CT of abdomen. Abscess if detected should be aspirated under image guidance and antibiotics instituted as per culture and sensitivity. Favorable outcome requires individualized therapy ranging from appropriate antibiotics in conjunction with percutaneous/ open drainage, and/or splenectomy. Adopting this strategy increases the possibility of splenic conservation in majority of the patient leaving only a subset of patients requiring splenectomy.

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