



Usg Guided Intervention for Splenic Abscess

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ABSTRACT

Introduction: Antibiotics and splenectomy are traditionally considered as the treatment of choice for splenic abscess. But spleen is an important immunologic organ; therefore, during the last decade spleen-preserving management using percutaneous imaging guided drainage is being adopted for the treatment of splenic abscesses. Splenic abscesses admitted over a period of two years in a single unit were selected and subjected to either USG guided percutaneous aspiration or pigtail catheter drainage. The end outcome was studied.

Materials and methods: The objective of our case study was to study the feasibility of USG-guided intervention as an alternative to surgical treatment of splenic abscesses.

Patients with splenic abscess admitted in a single unit over a period of two years were selected and subjected to either USG guided percutaneous aspiration or pigtail catheter drainage. A total of six cases were studied. Serial abdominal ultrasonography/ computed tomography scans were done at weekly intervals for monitoring resolution of the abscess. Pus was subjected to Routine-microscopy, SCAST, AFB, TB-PCR and ADA. Blood culture of all patients was sent. End outcome analysis was studied. Exclusion; Patients with miliary abscesses were excluded

Results: Our case study was performed to determine the feasibility of percutaneous USG guided drainage as an alternative to surgical treatment of splenic abscesses. We found that whilst previous studies reported pigtail with success for unilocular abscess predominantly we have treated patients with multilocular and ruptured abscess successfully. In all but one patient there was no growth in the pus culture. Blood culture was negative in all the patients.

Conclusion: Splenic abscess is an uncommon entity that can be treated percutaneously. USG-guided drainage of splenic abscess seems to be a safe and effective alternative to surgery, allowing preservation of the spleen. However more series of patients are required.

KEYWORDS

splenic abscess, pigtail, radiological intervention, non-operative management

INTRODUCTION:

Splenic abscesses are rare and can be potentially fatal if untreated or rupture. Incidence of splenic abscess at autopsy studies ranges from 0.14-0.5%. [1,2] The mortality rate for splenic abscess ranges from about 80% for multiple abscess in immunocompromised patients to about 15-20% in previously healthy patients with solitary unilocular lesions.[3] About 70% of splenic abscesses result from hematogenous spread of the infecting organism from another location. Patients present with pain in left hypochondrium or pyrexia of unknown origin. Diagnosis is established on ultrasonography and CT scan abdomen

Materials and methods: The objective of our case study was to study the feasibility of USG-guided intervention as

an alternative to surgical treatment of splenic abscesses. Patients with splenic abscess admitted in a single unit over a period of two years were selected and subjected to either USG guided percutaneous aspiration or pigtail catheter drainage. A total of six cases were studied. Patients were given ciprofloxacin and metronidazole initially and later on changed to sensitive antibiotic as per sensitivity report. Serial abdominal ultrasonography/ computed tomography scans were done at weekly intervals for monitoring resolution of the abscess. Pus was subjected to Routine-microscopy, SCAST, AFB, TB-PCR and ADA. Blood culture of all patients was sent. End outcome analysis was studied.

Exclusion; Patients with miliary abscesses were excluded
Case series:

Case 1: 65 years old male hypertensive and diabetic patient with right sided hemiparesis presented with pain left hypochondrium and fever and diagnosed as splenic abscess of size 15x12 cm on imaging. In view of the poor neurological status the patient was subjected to USG guided pig tailing of splenic abscess with favorable outcome at the end of 10 day. (Fig 1)

Case 2: 16 year old boy with complaints of fever with chills and pain in left hypochondrium was diagnosed on imaging to have splenic abscess of size 13x12 cm Patient was subjected to USG guided pig tailing of the splenic abscess. Pus and blood culture showed no growth. At discharge after 12 days the abscess had completely resolved. (Fig 2, 3)

Case 3: 40 year old seropositive male diagnosed with multiple splenic and liver abscesses largest splenic abscess size 7.7x6.8x5.8 on imaging. He underwent pig tailing of splenic and liver abscess. Pus cultured from both abscesses was negative and blood cultured showed no growth. Residual abscess at time of discharge 4.6x3.2cms with no pus in it. (Fig 4,5)

Case 4: 30 year male with a huge splenic abscess of 10x8 cm at the lower pole with moderate splenomegaly was subjected to USG guided aspiration of splenic abscess. Pus cultured showed Salmonella. Blood cultured showed no growth. Patient was treated with antibiotics. At discharge patient had a 3x3cm abscess cavity. He was totally asymptomatic. (Fig 7, 8) Follow up ultrasound showed complete resolution of the abscess.

Case 5: 36 year old male known alcoholic, admitted with complaints of pain abdomen and fever with chills since past 10-12 days. History of being operated for cholelithiasis 3 years back. USG Abdomen showed a large subcapsular splenic collection 14.5 x 11 cm. CT abdomen confirmed the presence of a large 14 x 10 x 8 cm sized subcapsular collection in spleen.USG guided pig tailing was performed it drained around 75-100 cc pus daily for 2 days then output was nil after 4 days. Blood culture and pus culture yielded no growth. USG at discharge showed an abscess of size decreased to 4 x 3.5 x 2 cm. Pigtail was removed and patient was discharged after 48 hours.

Case 6: A 48 year old, alcoholic male with mitral stenosis and proved Plasmodium vivax malaria developed a solitary splenic abscess which had ruptured in the sub capsular space of size 8cmx 6cm .The abscess was pigtailed under USG guidance and subsequently resolved after 1 week. (Table 1 about here)

Discussion: Splenic abscesses have diverse aetiologies [1, 7]. The commonest cause is haematogenous seeding of the spleen from an infective focus elsewhere in the body; infective endocarditis being the commonest source and accounting for 10-20% of all cases. The other infective causes include typhoid, malaria, urinary tract infection, pneumonias, osteomyelitis, otitis media - mastoiditis, and pelvic infections. Infections in contiguous areas like pancreatitis, retroperitoneal and subphrenic abscesses, diverticulitis may extend to involve the spleen. Splenic trauma is the other major cause of abscesses. Areas of splenic infarction in disorders like haemoglobinopathies (especially sickle cell variant), leukaemias, and polycythaemia may get infected and evolve into splenic abscesses. Alcoholics, diabetics, and immunosuppressed individuals including patients with AIDS are more susceptible to developing a splenic abscess [8]. In most cases, splenic abscesses present insiduously with fever (92.5%), left upper abdominal pain (39.2%), pleuritic chest pain (15.8%), and malaise being the common symptoms. Left upper quadrant tenderness (38.2%) and splenomegaly (56.0%) are the most frequently encountered signs on examination.[3] Leucocytosis is invariably present in all patients. Ultrasonography of the abdomen demonstrates hypoechoic (87%) or anechoic (13%) lesions in the spleen, outlined in most cases by irregular walls [9, 10]. A CT Scan of the abdomen is the most reliable tool for the diagnosis of a splenic abscess, which appears as a low density mass lesion with peripheral enhancement after intravenous contrast. The presence of a gas or fluid level within the spleen is diagnostic of a splenic abscess. The CT Scan, by delineating the exact location of an abscess, also helps in planning therapeutic strategies like percutaneous drainage. Splenic abscess often presents with either vague or nonspecific signs, thus making clinical diagnosis difficult. Current imaging modalities allow early diagnosis. Previous studies reported a success rates that range between 67% and 100%. Our case study was performed to determine the feasibility of percutaneous USG guided drainage as an alternative to surgical treatment of splenic abscesses. We found that whilst previous studies reported pigtailing with success for unilocular abscess predominantly we have treated patients with multilocular and ruptured abscess successfully. In all but one patient there was no growth in the pus culture. Blood culture was negative in all the patients.

Conclusion: Splenic abscess is an uncommon entity that can be treated percutaneously. USG-guided drainage of splenic abscess seems to be a safe and effective alternative to surgery, allowing preservation of the spleen. However more series of patients are required

Table:

CASE no	Case1	Case2	Case3	Case4	Case5	Case6
AGE	65	16	40	30	36	48
SEX	M	M	M	M	M	M
SYMPTOMS	Fever Pain in left hypochondriac region	Fever Pain in left hypochondriac region	Fever Pain in left hypochondriac region	Pain in left hypochondriac region	Fever Pain in left hypochondriac region	Pain in left hypochondriac region
SIGNS	-	Tenderness (+)	Tenderness (+) Rigidity (+)	Tenderness (+)	Tenderness (+)	Tenderness (+)
COMORBID CONDITIONS	Diabetes, hypertension, left side hemiparesis	-	HIV(+) multiple liver abscess	-	Alcoholic, past history of open cholecystectomy	Alcoholic, mitral stenosis vivax malaria
ULTRASONOGRAPHY	15x12cm	13x12cm	10x6cm upper pole	10x8cm	14.5x11cm subcapsular rupture	8x6cm with subcapsular rupture
CT SCAN	15x12cm	13.7x10x7cm	7.7x6.8cm upper pole	9x8cm	14x10x8cm abscess with subcapsular rupture	8x6cm with subcapsular rupture
NEEDLE ASPIRATION	-	-	-	+	-	-
PIGTAIL CATHETER DRAINAGE	+	+	+	-	+	+
PUS CULTURE	NO GROWTH	NO GROWTH	NO GROWTH	SALMONELLA	NO GROWTH	NO GROWTH
PUS FOR ACID FAST BACILLI	NO GROWTH	NO GROWTH	NO GROWTH	NO GROWTH	NO GROWTH	NO GROWTH

BLOOD CULTURE	NO GROWTH	NO GROWTH	NO GROWTH	NO GROWTH	NO GROWTH	NO GROWTH
ADENOSINE DEAMINASE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
DURATION OF TREATMENT	10 days	12 days	14 days	14 days	5 days	7 days

FIGURES:

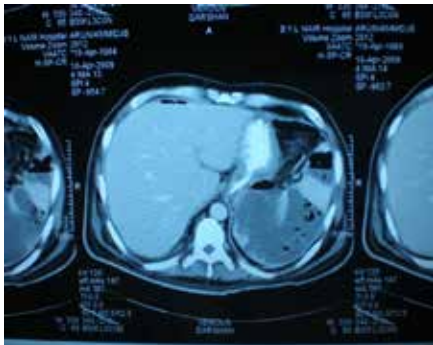


Fig 1 splenic abscess measuring 15x12cm

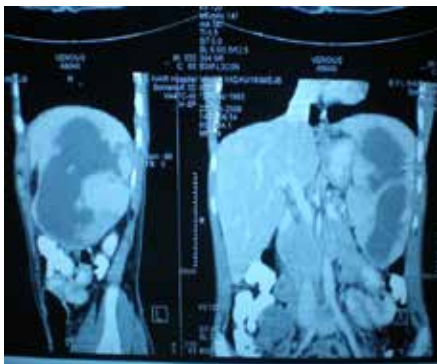


Fig2 splenic abscess measuring 13x12 cm

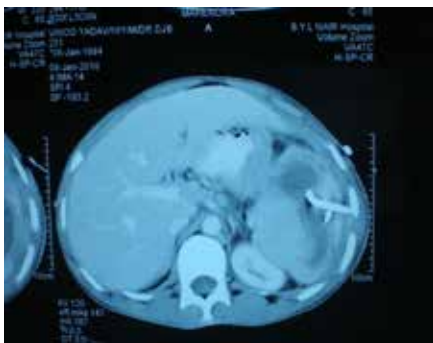


Fig 3 splenic abscess measuring 13x12 cm



Fig4 Right lobe liver abscess with pigtail



Fig 5 left lobe abscess with pigtail



Fig 6 Huge splenic abscess measuring 10x8 cm at lower pole



Fig 7 post aspiration residual splenic abscess measuring 3x3 cm

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