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A salmonella: A rare cause of splenic abscess

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Abstract
Splenic abscess is a rare entity which often goes unrecognised. Only few cases are reported in literature. Often the clinical presentation is non-specific. We report a case of a 15yr old male who presented with fever, left-sided upper abdominal pain and leukopenia. Ultrasonography and Computerised Tomography of the abdomen revealed large splenic abscess. Ultrasound guided percutaneous drainage of the abscess was performed. Culture of the aspirated material was positive for Salmonella enterica serotype typhi and the patient's condition improved after being treated with appropriate antibiotics. Proper clinical, radiological and microbiological evaluation is very much necessary in dealing with rare cases and for resolution of the symptoms of the patient.

Keywords: Salmonella, splenic abscess, symptoms of the patient, upper abdominal pain and leukopenia

Introduction
Splenic abscess in the setting of salmonella infection is a rare entity, which has been reported during the course of typhoid fever. The incidence of splenic abscess during the course of typhoid fever is relatively more common (around 0.29%). Salmonella is usually carried in the reticuloendothelial system (RES) due to its ability to survive within macrophages. Clinical manifestations are usually variable, and imaging with ultrasound or computed tomography of the abdomen is the gold standard for diagnosis. Management is a combination of surgical intervention and appropriate antimicrobial treatment [10].

Case Report
A 15year old male came to the emergency with symptoms of fever which was gradual in onset continuous with chills relieved on paracetamol and with left hypochondrium pain which was dull aching continuous none radiating with no aggravating factor and was relieved by medication with no palpable lump. Patient had symptoms for one month. Patient had daily episode of fever even under antibiotic cover. Patient was evaluated with fever profile which showed:
Blood culture: No growth
Urine culture: No growth
Peripheral malaria smear: Negative
Widal test: Negative
Dengue Serology: Negative
Viral markers: Negative
White blood cell count: 2500 /mm^3
Absolute neutrophilic count: 1740 IL
Absolute lymphocytic count: 720 IL
Retic Count: 1.3%
Peripheral smear of blood: Microcytic hypochromic cells

Patient was evaluated further with ultrasound-heteroechoic lesion of 20cc in the upper pole of spleen f/s/o splenic abscess non aspirable with splenomegaly. CECT abdomen of the patient was done which showed multiple variable sized hypodense well circumscribed lesions with irregular shaggy margins are seen diffusely distributed throughout the splenic parenchyma with largest lesion 5.4*4.4*4.1 cm and in the upper pole cortex of spleen with discontinuity in the parenchyma 3.1mm s/o rent. (Splenic abscess with signs of rupture and sub-capsular collection,

in the background of splenomegaly, and likely small upper pole splenic infract. Associated hepatomegaly likely reactive). Patient was evaluated for other causes of abscess but was found negative (no features of endocarditis or blood infection). Patient was immunocompetent and no history of travel. Patient was then planned for use guided aspiration of the abscess and the pus was sent for culture and gene Xpert. Culture report showed Salmonella Typhi sensitive to cefixime, cotrimoxazole, ceftriaxone, impenem and Genexpert was negative. Patient was started on 2gm iv B.D ceftriaxone and the patients symptom improved and the fever subsided with improvement of blood picture.

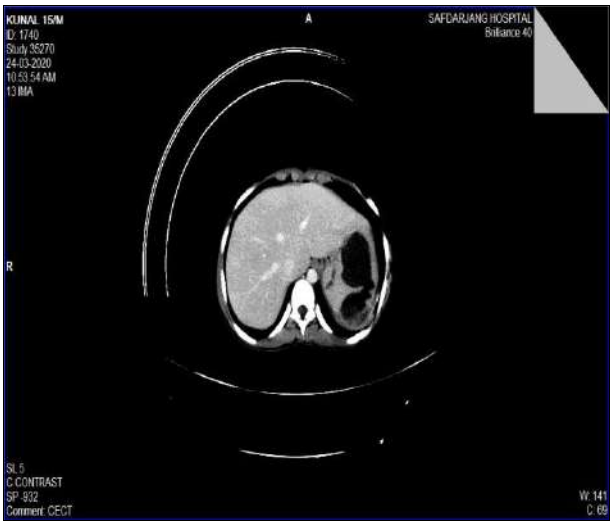

Fig 1: SL5 C Pre-Contrast SP-932

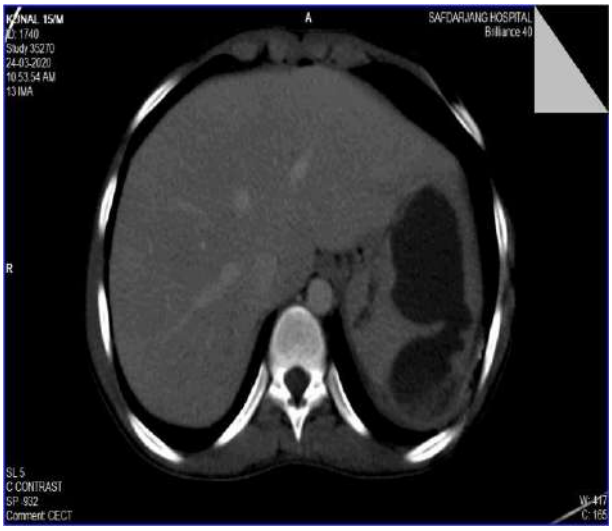

Fig 2: SL5 C Post-Contrast SP-932

Discussion

Very few cases of splenic abscess are reported in literature usually presenting with a nonspecific clinical picture [1]. Splenic abscess usually occurs following damage to the spleen by infarction or trauma commonest being systemic bacteraemia due to infective endocarditis [2]. We are reporting a case of splenic abscess caused by Salmonella in a patient who had a history of fever and pain only. Two important sites of extra intestinal Salmonella abdominal infections are the hepatobiliary system and the Spleen. Because of the phagocytic activity of the reticuloendothelial system and the leucocytes a low incidence of splenic abscess is seen [3]. Impaired host resistance, Sub-acute bacterial endocarditis, trauma, diabetes mellitus, urinary tract infection, skin sepsis, respiratory tract infection, and intravenous drug abuse are the common predisposing factors of splenic abscess [4]. The various pathogenesis of splenic abscess are:

1. Systemic bacteraemia which may be caused by conditions like infective endocarditis, intravenous drug abuse, osteomyelitis, pneumonia, pelvic infection, urinary tract infection, enteric fever etc.
2. Super infection of spleen damaged by ischemia, infarction (due to haemoglobinopathies like sickle cell disease) and trauma.
3. Immunosuppression as in A.I.D.S., steroid therapy, diabetes mellitus.
4. Contiguous spread from pancreatic, subphrenic and perinephric abscess.

Most often it presents with a triad of fever, left upper quadrant abdominal pain and a palpable tender mass with additional imaging evidence of splenic space occupying lesion [5, 6]. A high index of clinical suspicion is necessary for early diagnosis of splenic abscess. The diagnosis may be missed as the clinical features are often non-specific. Staphylococcus aureus, Streptococci and various aerobic and anaerobic intestinal flora and rarely fungi can play a role in the causation of splenic abscess, however non typhoidal Salmonella are more frequently reported than Salmonella typhi [1]. Till date only few cases of solitary splenic abscess caused by Salmonella typhi are described in literature, as reported by Torres *et al*., [7]. Pus culture in our case, grew Salmonella typhi, which could be the probable aetiology for the development of splenic abscess. Splenic abscess in this case most likely developed via seeding from bacteraemia following Salmonella typhi infection, all other factors which cause splenic abscess had been ruled out. Negative Blood culture could be explained due to administration of antibiotics prior to venepuncture for collecting blood sample. Ultrasonography and CT are the most useful imaging modalities in making a diagnosis of splenic abscess. Ultrasonography and C.T. scan are gold standard for early diagnosis6. C.T. scan also demonstrates the number and locations of abscess site along with other concomitant conditions like liver abscess, pleural effusion, etc. which are useful regarding management7. Both techniques are quick, harmless and sensitive. A focal sonolucent defect with abundant echogenicity due to debris or septations is seen in US, whereas CT shows a homogenous low density area with occasional rim enhancement [8]. Normally CT is more specific than US in delineating gas bubbles which is diagnostic of splenic abscess in visualising the peripheral contrast enhancement and in providing accurate information about the location of the abscess [9]. In our case CT revealed enlarged spleen with peripherally enhancing hypo-dense collection. Mainstay of treatment for splenic abscess is splenectomy with a success rate of 86-94%. Solitary unilocular abscess may be treated by percutaneous catheter drainage or fine needle aspiration with success rate being up to 68%. But its use is limited to surgically high risk patients and for unilocular abscesses [1]. In our case, percutaneous drainage under Ultrasonographic guidance followed by pigtail catheter insertion along with antibiotic coverage was the preferred mode of treatment as it was a unilocular abscess.

Summary

Isolated splenic abscess in a previously healthy patient is a rare

clinical condition and remains a diagnostic dilemma. Clinical presentation is often non-specific and leads to a delay in diagnosis. Imaging studies help to elucidate the condition. Despite advances in medical diagnostics and therapeutics, splenic abscesses can cause significant morbidity and can be fatal. Although splenectomy was considered the treatment of choice in the past, recent trends have seen a shift towards more conservative management. We present the clinical case of a patient who presented to our emergency room with a chief complaint of fever and left upper quadrant abdominal pain. Abdominal imaging showed an intrasplenic collection suspicious for a haemorrhage or an abscess. Percutaneous drainage was successfully performed, followed by conservative management with intravenous antibiotics. The culture of the fluid drained from the spleen was positive for Salmonella. The patient improved and was discharged. A high degree of clinical suspicion is necessary for early identification of a splenic abscess. Splenectomy can be avoided with the use of interventional radiological drainage.

Conclusion

Salmonella typhi splenic abscess is very rare and can be fatal if it is not recognised at an earlier stage. Non-invasive imaging modalities like Ultrasonography, CT-scan are useful for early diagnosis of splenic abscess. It must be borne in mind that while there are several emerging new infections, we should not miss the newer presentations of the older diseases. A good microbiological correlation of the appropriately collected specimen is mandatory in such unusual pyogenic infections and appropriate surgical management with suitable antibiotics is the need of the hour.

Conflict of Interest

Not available

Financial Support

Not available

References

1. Sarda AK, Lal P, Singh L, Bhalla SA, Goyal A. Splenic abscess due to enteric fever. Journal, Indian Academy of Clinical Medicine. 2004;5(3):269-71.
2. Ravikumar KH, Kate V, Ananthakrishnan N, *et al*. Splenic abscess due to Salmonella infection. Indian Journal of Medical Microbiology. 1996;14:109-11.
3. Bhongle NN, Nagdeo NV, Thombare VR. A Splenic abscess which was caused by Salmonella typhi in a non sickler patient: a rare case finding. Journal of Clinical and Diagnostic Research. 2013;7(3):537-38.
4. Murvet Y, Keramettin UO, Sevgi B. Multiple splenic abscesses in a child as a complication of typhoid fever. Firat Tip Dergisi. 2005;10(2):80-82.
5. Kalyanwat A, Jain S. Enteric fever presenting as splenic abscess: a rare presentation of enteric fever. OA Case Reports. 2014;3(7):68.
6. Handa A, Rajnikanth T, Bhartiya M, *et al.* Typhoid splenic abscess: a rarity in the present era. Sri Lankan Journal of Infectious Diseases. 2015;(5)2:97-100.
7. Torres JR, Gotuzzo E, Isturiz R, *et al.* Salmonellal splenic abscess in the antibiotic era: a Latin American perspective. Clin Infect Dis. 1994;19:871-75.
8. Shin PJ, Choi H, Bae CW, Choi YM, Yoon Y. Percutaneous drainage of splenic abscess in typhoid fever - a case report. J Kor Med Sc. 1995;10(1):44-47.
9. Thapa R, Mukherjee K, Chakrabartty S. Splenic abscess as a complication of enteric fever. Indian Pediatrics. 2007;44:43840
10. Journal of Pediatric Surgery Case Reports 47 101224, 2019.

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