

Case Report

SPLENIC ABSCESS DUE TO *SALMONELLA PARATYPHI A*: AN INCIDENTAL FINDING

*Manisa Sahu and Pradeep G. Talwalkar

Department of Microbiology

*Author for Correspondence

ABSTRACT

Splenic abscess is a rare complication of enteric fever due to *Salmonella Paratyphi A*. We report a case of splenic abscess in a young female with uncontrolled diabetes, an incidental finding, who was treated with CT guided drainage and appropriate antibiotics.

Keywords: Splenic Abscess, *Salmonella Paratyphi A*

INTRODUCTION

Splenic abscesses rarely reported as a complication of enteric fever. The incidence is between 0.29-2 percent in typhoid fever as per literature (Lucin, 1997). Diagnosis is a challenge, in face of the alluring presentations of splenic abscess. However the good part is the change in management from drastic splenectomy to a more conservative approach of imaging guided aspiration and antibiotics (Mas, 1997). We came across a case of splenic abscess due to *Salmonella Paratyphi A* in a female with uncontrolled diabetes, who was treated with CT guided drainage and antibiotics.

CASES

A 34 year old female was admitted to our hospital with chief complaints of dry cough on and off for one and half months duration. She also had mild fever with shivering and diaphoresis. She was a known hypertensive and diabetic with uncontrolled sugars, taking oral hypoglycemic and insulin for last 12 years. On examination patient was conscious, oriented, had mild fever [Temperature-99.4°F]. Moderate grade pallor was there with bilateral pedal edema, no icterus was there. Her respiratory rate was 28/minute with no other abnormality.

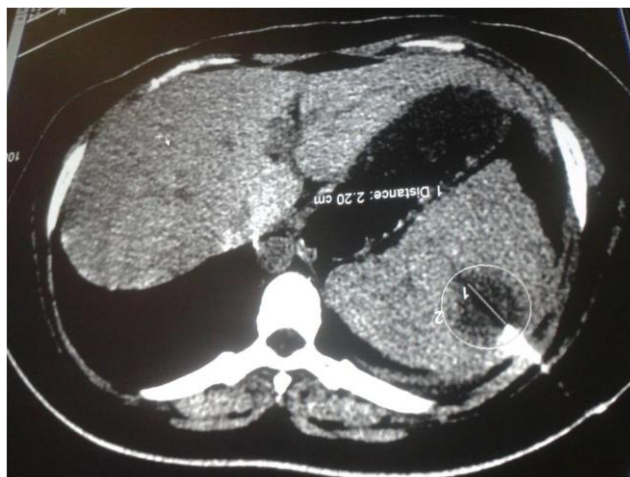


Figure 1: CT scan of abdomen showing enlarged spleen with a large solitary abscess

On systemic examination, her heart rate was 98/ min, heart sounds normal, no murmurs audible on auscultation and blood pressure was 150/ 104 mm of Hg. Abdomen was soft, with mild upper left quadrant tenderness. Her hemoglobin was 8.4mg/dl, total iron 16.30 and TIBC 202.79, consistent with iron deficiency anaemia. Total leukocyte count was $7.4 \times 10^3/\mu\text{l}$, differential showing 64% neutrophils

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and 28% lymphocytes. Her ESR was very high -135mm/hour. Albumin and globulin ratio was inverted. Thyroid and liver function test were normal. She was suspected to have either multiple myeloma or tuberculosis. Total serum protein electrophoresis did not show any abnormality. She was seronegative for HIV antibodies. On chest X-ray PA view, lung fields were clear, there was marginal cardiomegaly, left sided basal pleural effusion with blunting of left costo-phrenic angle. Ultrasonography of the upper abdomen showed focal splenic lesion and minimal left pleural effusion. Computed tomography of abdomen showed splenomegaly, with one focal irregular hypodense lesion which measured 6.2 x 3.5cm, near its upper pole, peripherally involving the capsules (Figure 1). Pleural effusion was more evident with underlying lower basal atelectasis. CT guided aspiration of the splenic abscess was done and sent for routine microscopy and culture. The patient had taken levofloxacin before getting admitted. Gram stained smear showed pus cells and occasional gram negative bacilli. To our surprise culture grew *Salmonella Paratyphi A*, identified by Vitek 2 automated system as well as biochemically and serologically. It was sensitive to amoxicillin /clavulanic acid and cotrimoxazole, intermediately sensitive to ampicillin and ceftriaxone, but resistant to ciprofloxacin and levofloxacin. Blood culture and stool cultures showed no growth. The patient was started with amoxicillin /clavulanic acid intravenously with symptomatic improvement, fever subsided, leukocyte count dropped, repeat USG showed disappearance of the splenic lesion and patient was discharged after 7 days. After six months follow up she was symptom free.

DISCUSSION

Splenic abscess is very rare; among the causative agents *Salmonella Typhi* is not common and *Salmonella Paratyphi A* is rare (Lucin, 1997; Mas, 1997; Sudhaharan, 2014; Sinha 1997). In one study from South India, over a period of 25 years only two cases of splenic abscesses were diagnosed, one was by *S Typhi*, and one by *S Paratyphi A* (Sudhaharan, 2014) In India splenic abscess due to *Salmonella* species is mostly seen in pediatric practice (Thapa, 2007; Salunke, 2014). Piplani *et al.*, described two cases of splenic abscess in young adults, one due to *S Typhi* and the other due to *S Paratyphi* (Piplani, 2006).

Usually there is a definite predisposition such as bacteremia (infective endocarditis), infection in contiguous area, focal trauma or microscopic trauma due to hemoglobinopathies or any cause of immunosuppression like human immunodeficiency virus infection or Diabetes mellitus (Lucin, 1997). Our patient was having uncontrolled diabetes and probably that lead to immunosuppression and the aforementioned complication.

The likely presentation of splenic abscess is fever with upper quadrant pain and leukocytosis, but abdominal pain, pleuritic chest pain, fevers, nausea and vomiting, are all initial symptoms that cause patients to seek medical attention. Splenomegaly is reported in less than half of the cases (Madoff, 2009). 82% of patients can have left pleura-pulmonary involvement on radiograph (Lucin, 1997) Apart from low grade fever our patient also had Pleural effusion on chest X-ray with dry cough. She never gave a history of enteric fever in last few years. Diagnosis is mostly clinical or serological, and in some culture, our case was culture proven. widal test was negative. Imaging along with culture and sensitivity has lead to the correct diagnosis. Mas *et al.*, reported a similar case where they also had a very high ESR and finally diagnosed it with the help of imaging [USG/CT scan] within two days (Mas, 1997).

Until recently treatment of splenic abscess was splenectomy (Madoff, 2009). However with a better understanding of immunological role of spleen, the trend has been shifted to conservative therapy with appropriate antibiotics in combination with percutaneous drainage (In case solitary abscess under CT/USG guidance). Splenectomy is reserved for those who fail to respond to antibiotics and percutaneous drainage or in multiple small abscesses where drainage is not possible (Gupta, 2012).

Drug resistance is another issue that ought to be kept in mind. Acquisition of resistance to fluoroquinolones has been reported earlier (Harish, 2006). In our patient splenic abscess was an incidental finding, though she was initially treated with levofloxacin, but the strain was resistant to fluoroquinolones, so no clinical improvement was seen. Post culture report the change into appropriate antibiotics in conjunction with percutaneous drainage patients had uneventful recovery like many other cases (Mas, 1997; Gupta, 2012).

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Conclusion

With the availability of typhoid specific vaccine, *Salmonella Paratyphi A* may emerge as the main cause enteric fever in endemic areas like India. When dealing with patients with deep seated infections like splenic abscess one must keep this organism in mind especially in immunocompromised patients. Imaging with culture & sensitivity are prudent in management of such infections.

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