Case report of rare chronic myelogenous leukemia related multibacterial splenic abscess presenting with scrotal swelling

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1. Introduction

Splenatic abscesses are frequently reported in the literature. They are often multiple and related to immunosuppressive states such as those induced from chemotherapy. Most reported cases of splenic abscesses are related to CML before chemotherapy. We report a case of a 58-year-old patient who presented to the emergency department with respiratory symptoms, scrotal swelling, and was found to have splenomegaly from a massive multibacterial abscess which required a splenectomy. Upon investigation the patient was found to suffer from chronic myelogenous leukemia.

2. Case report

A 58-year-old male with past medical history of diabetes type II presented to the emergency department with abdominal pain and painful erythematous scrotal swelling. He reported a history of left sided abdominal pain worse with inspiration for six months with associated fatigue, weight loss, and intermittent night sweats. He was recently treated with a 5-day course of azithromycin for suspected pneumonia on chest X-ray. The scrotal swelling started two days ago and was associated with increasing local pain and a blood tinged penile discharge. Past medical history was diabetes controlled with novolin. Family history and social were unremarkable. On exam, he had left upper quadrant pain and his scrotum was tender. His hematologic and biochemical labs were significant for leukocytosis with a WBC of 162.3 x 10^9/L and creatinine of 1.2 mg/dL. Urinalysis was positive for glucose of 1000 mg/dL and ketones of 10 mg/dL. A scrotal ultrasound showed bilateral acute epididymo-orchitis, scrotal edema, right more than left with a suspicious right pyocele, and a small left hydrocele. CT of the abdomen with intravenous contrast revealed a large perisplenic fluid collection consistent with a large air-fluid level measuring 22.5 cm as well as multiple splenic hypodensities (Fig. 1). The left kidney, abdominal aorta and inferior vena cava were displaced to the right. Splenectomy revealed a huge hing of fibrous material covering the spleen (Fig. 2). A liter of purulent material was drained. Post-operative the WBC was 189.2 x 10^9/L. The abscess included mixed aerobic flora including Gram positive cocci, Gram positive rods, and Gram negative rods as well as mixed anaerobic flora. Blood cultures were positive for prevotella. A urine culture grew Gram positive flora. Fungal abscess cultures were negative. A continued high WBC post-op prompted a workup.
for leukemia. A bone marrow aspirate revealed a percentage of myeloblasts under 1%. A FISH (Fluorescence in situ hybridization) analysis confirmed BCR-ABL fusion and thus chronic myelogenous leukemia in the chronic phase. He was treated with vancomycin and meropenem for his epididymitis and bacteremia. His CML was treated with hydroxyurea and methylprednisolone. After several weeks he was discharged stable.

3. Discussion

In this report we describe the presentation of chronic myelogenous leukemia with a multibacterial splenic abscess and associated scrotal swelling. This is an uncommon presentation for leukemic patients. The usual presentation of leukemia related splenic abscesses is after chemotherapy and is due to immunosuppression. The etiology is commonly fungal, not multibacterial.2-4 Another rare exception is from a case report of a CML patient who presented with peritonitis from a splenic abscess containing Escherichia coli.1

The etiology of the scrotal swelling is likely due to his epididymitis.5 Additionally, the compressive effect of the spleen on the systemic circulation may have exacerbated his swelling.

Splenomegaly can compress the renal vasculature leading to increased renal resistive indices.6 This compression can induce venous stasis of the renal veins, and by affecting the gonadal and testicular veins can promote scrotal swelling. Venous congestion has been demonstrated in ultrasound studies of scrotal swelling.7 Epididymitis can occlude venous outflow8 further exacerbating the scrotal swelling. In a similar case report, an 18-year-old male who presented with splenomegaly, scrotal swelling, and epididymitis was diagnosed with brucellosis.9 Scrotal swelling is seen in other etiologies associated with splenomegaly including Lyme disease10 and primary testicular non-Hodgkin lymphoma.11 There has been one other report of a case of CML presenting with splenomegaly and testicular swelling in the presence of Richter’s syndrome but the patient lacked a splenic abscess.12

4. Conclusion

This case illustrated an unusual presentation of CML because the patient presented with splenomegaly, a multibacterial splenic abscess, and scrotal swelling.

Conflict of interest

The authors declare no conflict of interests.

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None declared.

Ethical approval

Written and informed consent was obtained from the patient for publication of this case report and any accompanying images.

Author contributions

The splenectomy was performed by Dr. Vercruysse. The case report was created by Dr. McPhillips. The final editing and proof-reading was done by Dr. Friese, Dr. Vercruysse, and Dr. McPhillips.
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