Case Report

A Case of Tuberculous Peritonitis without Pulmonary Manifestations in A Morbidly Obese 31Year Old Female

Thomas J Shaknovsky
Associate Professor, Alabama College of Osteopathic Medicine, USA.
'Corresponding author: Thomas J Shaknovsky, Associate Professor, Alabama College of Osteopathic Medicine, USA. Email: surgery2009@icloud.com
Received Date: 18 February, 2019; Accepted Date: 29 May, 2019; Published Date: 26 September, 2019

Abstract

Tuberculosis infection can present in many different ways depending upon what region of the body is infected. Tuberculous peritonitis is one form of abdominal tuberculosis and an uncommon cause of ascities. This case report will detail the history, presentation, and diagnostic work up of a morbidly obese immunocompetent 31-year-old African American female who was diagnosed with tuberculous peritonitis without pulmonary manifestations. It is important that providers learn to recognize and effectively treat this form of tuberculosis infection because it often times remains undiagnosed for months.

Introduction

Tuberculosis (TB) is highly infective and widespread disease that is estimated to be affecting nearly 1.7 billion people (mostly concentrated in developing countries and Asia). Still despite its global prevalence, only a fraction of people develops active infection [1]. Currently cases of TB in the United States are at a historic low with an estimated incidence of 2.9 per 100,000 [2]. Still certain populations remain at high risk for infection including HIV positive individuals, homeless and prison populations, foreign born immigrants, and many others [2,3]. Of these cases, up to 21% present as totally extra-pulmonary with no identifiable infection in the lungs [4].

Tuberculous peritonitis (TBP) is just one form of this disease and is well known for being difficult to diagnose. It is qualified as a form of abdominal tuberculosis infection that involves the parietal and visceral peritoneum. The difficulty with diagnosis is due largely in part to its rarity (accounting for only 1-2% of TB cases) and nonspecific presentation if there are no pulmonary symptoms. In fact, up to 70% of cases are not diagnosed until the patient has had symptoms for 4 months [5]. Thus, it is important that providers learn how to accurately recognize and treat this disease to help combat the spread of TB.

Case Report

The patient was a 31 yo morbidly obese (70.5 BMI) African American female that initially presented to the ED with a 10-day history of diffuse abdominal pain and nausea with 1 episode of non-bloody emesis and no diarrhea. For one month she had had increasing fatigue and a heaviness in her abdomen. Two weeks ago, she began having pain in her abdomen that initially began in the left flank before also developing bilateral suprapubic pain and then severe diffuse abdominal pain. Past medical history was significant for recent urinary tract infection for which she completed a course of Bactrim. Six months prior the patient had had a case of idiopathic pleural effusion. Per the patient all work up was negative and after thoracentesis she has had no reoccurrence. She denied all other medical problems. She had no surgical history and she denied any home meds apart from Tylenol for pain and the previously mentioned Bactrim. Her social history and family history were noncontributory. Gynecological history was significant for irregular periods (attributed to Depo every 3 months) and a normal pap smear one year prior. She had no known drug allergies.

Vitals were significant for a mildly elevated temperature (100.0º) and heart rate (132 bpm) at presentation. Physical exam was significant only for markedly obese abdomen with some distention and tenderness without guarding or rebound. Pulmonary, cardiac, HEENT, extremity, and dermatologic exams were all normal. Labs were significant for a normocytic anemia with a hemoglobin of 10.3 gm/dL, albumin was 3.4 gm/dL, lactate was 1.77 mmol/L and
the INR was 1.12. In the ED, chest X ray was negative and CT scan of the abdomen showed moderate to large volume of ascites with stranding in the omentum and peritoneum which was thought to be peritoneal carcinomatosis. All other diagnostic tests and imaging were normal or unremarkable.

Ultimately it was decided to admit the patient for workup beginning with a diagnostic paracentesis and pelvic ultrasound of the adnexa. A total of 4 L of ascitic fluid were removed and labs revealed a white blood cell count of 2368 per µL with no other abnormalities or evidence of neoplasia and the patient was placed on empiric ceftriaxone for possible bacterial peritonitis. Her CA 125 was mildly elevated Pelvic ultrasound had poor visualization and abdominal ultrasound only showed ascites. As the hospital stay progressed gynecological malignancies were ruled out, symptoms were treated, and the patient started to improve. Ultimately, she was discharged on hospital day 5 in a hemodynamically stable condition, afebrile, with significantly decreased pain and symptoms and informed to follow up with gastroenterology (GI) for further workup.

Four days after discharge the patient returned to the ED per GI’s recommendation after being evaluated in an outpatient setting. Previous symptoms of nausea and abdominal pain and distention were returning and rapidly worsening. Repeat CT was performed and showed only more ascites. Diagnostic paracentesis was repeated and 6 L of fluid were drained this time. Labs showed high ascitic protein levels at 5.0 g/dL, low serum ascites albumen gradient, and a WBC of 844 per µL. At this point since the etiology of this patient’s symptoms could not be identified and carcinomatosis could not be ruled out, general surgery was consulted for diagnostic laparoscopy. The procedure was performed on hospital day 4 and showed significant amount of adhesions and numerous lesions studding the peritoneal cavity. Several of these were removed and passed on for pathologic examination. Once the pathological exam of the specimens was complete, findings showed chronic inflammation and non-necrotizing confluent granulomatous inflammation and staining was positive for acid fast bacilli. At this point infectious disease was consulted for care and more thorough investigation revealed that the patient had been exposed to TB 8 months prior and had tested negative at that time. A QuantiFERON gold test given after the pathology results were available showed a positive result. She was then placed on quadruple therapy with Isoniazid, Pyrazinamide, Ethambutol, and Rifampin. Given her negative chest X ray and lack of respiratory symptoms, isolation was not required. She was discharged on hospital day 9 with outpatient and health department follow ups.

Discussion

Extrapulmonary TB infection rates are estimated to be between 10-15% of HIV negative patients and more than half of those that are HIV positive [6]. Therefore, it is important to recognize that TB can present in many forms and this case is a strong example of what clinicians should look for.

It is important to note that her symptom progression is consistent when compared to other cases. As previously mentioned, the majority of TBP cases are diagnosed after several months and this is due to its subacute onset that takes place over weeks to months [7]. In this patient’s case, she complained of symptoms for 10 days at initial presentation and had been accurately diagnosed on day 28. Likewise, her clinical presentation was consistent with TBP. The most common symptoms tend to be fever, anorexia, weakness, malaise, and weight loss. Of these, the patient admitted to all of those symptoms apart from weight loss. Diffuse abdominal tenderness and nonspecific pain as well as distention are also classic symptoms that this patient exhibited.

There are many useful modalities for diagnostic testing for TBP. Abdominal imagining in the forms of CT scans and ultrasound has been shown to be effective but still nonspecific. The ascitic fluid (with possible debris and loculations), bowel wall and omental/peritoneal thickening and stranding, localized fluid between adhered loops of bowel, and lymphadenopathy (often with caseating granulomas). In this patient’s case, she clearly demonstrated the ascitic fluid as well as the stranding and thickening of her omentum [5,7].

Many routine laboratory tests tend to be unhelpful in narrowing down the diagnosis of TBP, but there are some tests that have proven useful. In ascitic fluid analysis the WBC and lactate dehydrogenase levels vary between levels and elevated or normal levels cannot accurately be relied up to assess this diagnosis [5,7]. Reportedly total protein levels greater than 25 g/L and a low serum-ascities albumen gradient (SAAG) less than 11 g/L were considered highly sensitive but not specific [7]. In this patient’s case, her protein levels were 50 g/L and her SAAG was reported to be low. Adenosine deaminase levels were highly elevated at 59.4 U/L and this is also considered to be highly specific and sensitive for TBP [5]. Another lab value associated with TBP in this case was her elevated CA 125 levels. Ultimately though this is considered too nonspecific to be of diagnostic use for TBP [5].

Currently, laparoscopy or laparotomy are considered the diagnostic tools of choice. This is due to the ability to not only directly visualize the peritoneum but also take samples for histological evaluation. Currently TBP is described as having 3 forms that all present similarly, but the more advance Fibro adhesive form lacks the ascites that develops with the other two [5].

(1) Thickened peritoneum with tubercles: multiple, yellowish white, uniform sized (about 4-5mm) tubercles diffusely distributed on the parietal peritoneum. The peritoneum is thickened, hyperemic and lacks its usual shiny luster. The omentum, liver and spleen can also be studded with tubercles.

(2) Thickened peritoneum without tubercles.

(3) Fibro adhesive peritonitis with markedly thickened peritoneum and multiple thick adhesions fixing the viscera.
For this patient, this proved to be the most effective and definitive means of diagnosing her. Carcinomatosis and gynecological malignancy had been high on the differential beforehand but histological examination of samples clearly showed the source of her symptoms. On review, the inflammation and presence of mycobacterium were easily identifiable. Thusly, it can be said that she suffered from the 1st form where the peritoneum is studded with discrete tubercles.

For treatment, 2 months of quadruple therapy with isoniazid, pyrazinamide, ethambutol, and rifampin followed by isoniazid and rifampin for 4 months should be sufficient to help treat the disease. HIV testing was negative and she did not suffer from any apparent immunosuppressive disorders. Luckily her case did not require further surgical intervention since she lacked any signs of mechanical obstruction due to the infection. Regular follow ups and compliance with medication should ensure a very high chance of recovery.

Conclusion

Tuberculous Peritonitis is just one of the many forms that TB manifests itself and can be difficult to diagnose in a timely fashion. Thusly it is vitally important that providers learn to recognize the signs and symptoms and realize what diagnostic modalities are most useful. Our patient's case represents a near classic depiction of TBP despite being very low risk since he is immunocompetent and lacks traditional risk factors. Clinicians must keep their differential diagnoses broad if they intend to catch.

References