Abdominal Tuberculosis

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May 11, 2017

Clinical Case

CC: Progressive abdominal distension with pain and vomiting.

HPI: This is a 24 year old female who developed increased fatigue, loss of appetite with unintentional weight loss, fever with drenching night sweats and increasing abdominal girth with pain approximately 5 months post partum. Acute increase in abdominal pain associated with vomiting made her call 911 to request transport to the ED.
Clinical Case

**ROS:** Urinary frequency without dysuria, severe vaginal bleeding secondary to IUD. Remainder of ROS–NC

**SH:** Patient was born in Angola, but lived in a refugee camp in Namibia for most of her adult life. She is married with 2 children. She has been in the USA x 2 years. She and her family were tested at the HD at time of arrival to USA and she was found to have TBI but did not follow up at HD for treatment despite several attempts by HD to convince her. CXR at the time was non diagnostic. Denies tobacco ETOH or illicit drugs. Employed in accounting firm.

**FH:** Non contributory.

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Initial Work Up

**Paracentesis**

- Ascitic Fluid– WBC Count 1550
  - 82% Lymphocytes
  - Protein 5.2 Grams
- AFB smear– Negative
Arrows show omental thickening and nodularity (caking). Omentum is the layer of fat that drapes over the anterior abdomen. Top right shows bowel matted against/inseparable from the omentum. Again, malignancy with carcinomatosis is the most common cause of this finding.

Arrows show thickening of the fallopian tubes (a nonspecific finding most concerning for PID). The right image shows an ultrasound. The arrows are again on the thickened tubes. The structure on ultrasound the left of the tube is the ovary (showing follicles) Normal fallopian tubes are typically difficult to clearly identify on both CT and US.
Almost a frozen abdomen, omentum caked and adherent to the entire large and small bowel which was "fused" in midline mass. Adhesions to abdominal wall were able to be carefully dissected away, lower edge of omentum had a band that was attached to the uterus, this was resected and used to partially lift the omentum away from the attached bowel. Miliary studding noted throughout.

No tumor seen – ovaries and tubes were visualized and were normal in size – but thickened.

Evacuation of ~2L of dark yellow to brown ascites.
Clinical Case

Microbiology Results:
- AFB smear – 2+ from Peritoneal biopsy
- AFB Smear – 2+ From Omental biopsy
- AFB Smear– Negative from Fallopian Tube.

Pathology:
- Casseating necrosis and necrotizing inflammation– Peritoneum, Omentum and Fallopian tube biopsy.
- Rapid PCR on tissue – M. tb without evidence of Resistance to INH.
Epithelioid granulomata with focal central necrosis (arrow) and surrounding lymphoplasmacytic inflammation with fibrosis
Necrotizing granuloma
Peritoneal TB

- **Pathogenesis**
  - Reactivation of a peritoneal focus formed during primary hematogenous spread
  - Lymphohematogenous spread from pulmonary TB or miliary

- **Pathology** (based on amount of ascitic fluid)
  - **Wet** most common with large amount of fluid—>80%
  - **Fibrotic/Dry or Plastic**: Omental masses matted bowel loops with fibrous adhesions and caseous nodules (doughy abdomen)—Rare

- **Risk Factors**
  - HIV disease, ESRD on dialysis (CAPD), DM, Cirrhosis

- **Symptoms and signs**
  - Non specific and insidious
  - Weight loss, loss of appetite, low grade fever, abdominal pain/distension, ascites
  - Frequent delays in diagnosis and requires high level of clinical suspicion
**Discussion Points**

- When should we have initiated treatment for TB? (Patient was started 11 days after admission when PCR results available)

- Should Steroids be used in addition to RIPE?

- Should drug levels be performed?

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**Therapeutic Drug Monitoring**

- **INH**: Concentration at 2 hours: 3.45 mcg/ml (Range 3–5)
- **Rifampin**: Concentration at 2 hours: 10.40 mcg/ml (Range 8–24)
- **EMB**: Concentration at 2 hours: 4.09 mcg/ml (Range 2–6)
- **PZA**: Concentration at 2 hours: 49.63 mcg/ml (Range 20–60)
What tests could be used to diagnose abdominal TB?

What other diagnostic tests could be sent?
Follow up of Case

- The patient was discharged on RIPE.
- She was evaluated at HD.
- The patient continued to have drenching NS, low grade fever and abdominal pain with poor oral intake.
- Abdominal exam – Distended without ascites but loops of bowel that gave a doughy feel.
- Patient was started on tapered dose of steroid in addition to RIPE and had drug levels drawn to verify adequate absorption.
- She is doing very well and has gone back to work!