Fusobacterium Necrophorum Septicemia Secondary to an Ovarian Abscess: A Case Report

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Abstract

Fusobacterium necrophorum is part of the normal oropharyngeal flora and can result in a life-threatening systemic infection known as Lemierre’s syndrome. A rare presentation of F. necrophorum infection is seen in the female genital tract and is typically due to obstetric infections. Here we present a unique case of F. necrophorum without traditional features of Lemierre’s syndrome with the female genital tract as a primary site.

A 50-year-old female presents with a two-month history of nausea, vomiting, abdominal pain, and weight loss. She ultimately developed bilateral lower extremity necrotizing fasciitis, colonic perforation, and a left chest wall abscess. Blood and wound cultures were found to be positive for Fusobacterium necrophorum. Imaging revealed a left ovarian mass along with a left upper lobe nodule. She had no history of oropharyngeal infections or symptoms. Imaging was also negative for deep neck space abscesses or thrombophlebitis. The patient was treated with ceftriaxone and metronidazole and clinically improved. In conclusion, F. necrophorum is a potentially life threatening infection and should be considered when dealing with ovarian abscesses or masses.

Introduction

Fusobacterium necrophorum is a Gram-negative, anaerobic rod. It is part of the human gastrointestinal tract and is often associated with head and neck infections, localized abscesses and a potentially life-threatening disease called Lemierre’s syndrome [1,2]. Lemierre’s syndrome starts as an oropharyngeal infection, followed by septic thrombophlebitis of the internal jugular vein resulting in septicemia and septic emboli [1]. Few F. necrophorum cases are found in the female genital tract and those that do are most commonly associated with obstetric procedures [3]. Here we report a case of an otherwise healthy 50-year-old female who developed F. necrophorum septicemia originating from the genital tract without recent birth or obstetric procedures.

Case Presentation

A 50-year-old female with a past medical history significant for hyperlipidemia and obesity presented to the emergency department with two months duration of nausea, vomiting, abdominal pain, and diarrhea. A review of systems was notable for fevers, chills, night sweats, and an unintentional 70-pound weight loss. Vital signs on admission were significant for a fever of 101.6°F. Labs were significant for a hemoglobin of 13.2, platelets of 104,000, and white blood cell count of 6.9 with 86% neutrophils. Her BUN was 67, creatinine was 3.6, aspartate aminotransferase was 245, alanine transaminase was 59, and glucose was 106. Lactic acid levels were elevated at 5.6 and procalcitonin was 186.26 (Table 1).

CT abdomen and pelvis revealed a 6.2 cm x 4.8 cm x 5 cm mixed solid and cystic mass in the left ovary/adnexa (Figure 1), a 6 mm x 6 mm pulmonary nodule in the left lower lobe with central lucency (Figure 2), a 6 cm x 2.5 cm soft tissue mass with bony destruction of the left anterior chest wall (Figure 3), and retroperitoneal lymphadenopathy. She developed hypotension refractory to fluid resuscitation, so she was admitted to critical care and started on vancomycin and meropenem empirically.
<table>
<thead>
<tr>
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<th>Patient's Lab Values</th>
<th>Normal Lab Value</th>
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<tbody>
<tr>
<td>Hemoglobin</td>
<td>13.2 g/dL</td>
<td>12-16 g/dL</td>
</tr>
<tr>
<td>Platelets</td>
<td>104 x 10³/ µL</td>
<td>150-400 x 10³/ µL</td>
</tr>
<tr>
<td>White Blood Cell</td>
<td>6.9 x 10³/µL</td>
<td>4.5-11 x 10³/ µL</td>
</tr>
<tr>
<td>Neutrophil (%)</td>
<td>86%</td>
<td>54-62%</td>
</tr>
<tr>
<td>BUN</td>
<td>67 mg/dL</td>
<td>7-18 mg/dL</td>
</tr>
<tr>
<td>Creatinine</td>
<td>3.6 mg/dL</td>
<td>0.6-1.2 mg/dL</td>
</tr>
<tr>
<td>AST</td>
<td>245 IU/L</td>
<td>9-32 IU/L</td>
</tr>
<tr>
<td>ALT</td>
<td>59 IU/L</td>
<td>19-25 IU/L</td>
</tr>
<tr>
<td>Glucose</td>
<td>106 mg/dL</td>
<td>70-110 mg/dL</td>
</tr>
<tr>
<td>Lactic Acid</td>
<td>5.6 mmol/L</td>
<td>0.5-1 mmol/L</td>
</tr>
<tr>
<td>Procalcitonin</td>
<td>186.26 ng/mL</td>
<td>0.10-0.49 ng/mL</td>
</tr>
</tbody>
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TABLE 1: Patient's lab values upon admission to hospital.

FIGURE 1: Computed tomography without contrast of the abdomen in coronal view. The green arrow indicates left ovarian mass.
The following day, she began to experience worsening abdominal pain and bilateral leg pain. She developed erythema, mottling, ecchymosis, and edema in her posterior right thigh and anterior left thigh. A CT of her bilateral lower extremities was obtained which showed gas in the soft tissue and fascia surrounding the muscles of her right posterior leg and left quadriiceps. She was urgently taken to the operating room for bilateral lower extremity debridement for necrotizing fasciitis. She was also started on clindamycin. Blood
Fusobacterium necrophorum

Conclusions

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debate regarding if proven thrombophlebitis of the internal jugular vein is required or if septic pulmonary

emboli or lung infarctions are an acceptable substitute [1]. With regards to our patient, she had no evidence of oropharyngeal symptoms or internal jugular vein thrombosis but did have pulmonary septic emboli. Her left ovarian abscess seems to have been the initial infection, resulting in septicemia, pulmonary septic emboli, chest wall abscess with rib osteomyelitis, and necrotizing fasciitis of both thighs. Ultimately, it remains speculative if the ovarian abscess started as a silent Lemierre's syndrome or as a gynecological infection. In conclusion, this case demonstrates the virulence of Fusobacterium necrophorum combined with multiple serious metastatic infections.

Conclusions

Fusobacterium necrophorum is most commonly associated with oral infections but it is imperative to keep it in the
differential for ovarian abscesses/masses. Lemierre's syndrome is quite often overlooked and can be challenging to diagnose in the absence of classic findings such as thrombosis of the internal jugular vein. However, it is a severe and potentially life-threatening infection if allowed to spread throughout the body. With prompt recognition and diagnosis, complications such as lung abscesses, septic arthritis, pyomyositis, subcutaneous abscesses, liver abscesses, peritonitis, and endocarditis can be avoided.

Additional Information

Disclosures

Human subjects: Consent was obtained or waived by all participants in this study. Carlos A Haley, Freeman Health Systems issued approval N/A. I approve of you proceeding with the case study. Conflicts of interest: In compliance with the ICMJE uniform disclosure form, all authors declare the following: Payment/services info: All authors have declared that no financial support was received from any organization for the submitted work. Financial relationships: All authors have declared that they have no financial relationships at present or within the previous three years with any organizations that might have an interest in the submitted work. Other relationships: All authors have declared that there are no other relationships or activities that could appear to have influenced the submitted work.

References