Challenges in Wound Care: Recurrent ESBL Infection in Low Risk Young Adult

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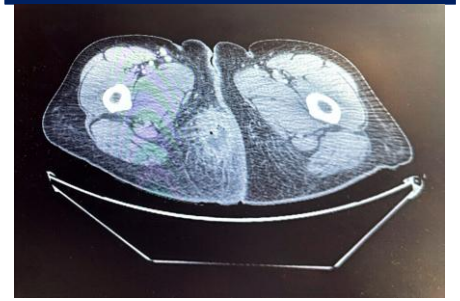
Introduction

Extended spectrum beta lactamase (ESBL) is an enzyme present in certain bacteria that breaks down antibiotics called beta-lactams, rendering them ineffective. Infections with ESBL-positive organisms are more difficult to treat. Nursing home and hospitalized patients are at an increased risk of contracting these infections, however, the prevalence of both hospital and community acquired ESBL infections is rising. We present a case of a young patient who contracted ESBL without any risk factors such as smoking, diabetes, or any recent prior history of travel, visiting hospitals or nursing homes.

Figure



Case Description

21 year old woman, no prior PMHx. Presents to the ED with a fever of 102F, right buttock tenderness and swelling for 2 days. Patient reported falling down stairs onto buttock 2 weeks prior

- **On PE**, the patient was tachycardic, hypotensive with a 4x5 cm swelling present in the right perianal region, blanching erythema, fluctuance and fullness.
- **Lab Results:** elevated WBC of 20.9 and left shift.
- **Imaging**: CT Pelvis with IV contrast revealed a a 6.2 x 4.6 x 7.6cm collection of air and fluid.
- **Diagnosis**: Buttock Abscess and Cellulitis
- **Treatment**: Pt placed on ceftriaxone and gentamycin, bedside I&D performed by Emergency Room staff, then patient was taken to OR for formal I&D with washout and packing due to persistent fluctuance.
- **Post-op wound care** with daily packaging, and wet to dry dressings. Post-operative wound and tissue cultures revealed growth of ESBL E. Coli., ESBL Klebsiella pneumoniae and Group C Beta hemolytic Streptococcus.

Three months later, patient noted pain and swelling at same site, given amoxicillin-clavulanate by their PCP.

- **Repeat Physical Exam:** Patient has two lesions on R buttock area with fullness but no fluctuance or drainage.
- **Wound cultures** revealed bacterial resistance to many common antibiotics but showed susceptibility to ciprofloxacin and metronidazole, patient placed on those two.
- Given recurrence of pathology, persistence of symptoms, and high bacterial resistance, decision was made to perform **a wide excision of the acute-on-chronically infected tissue under general anaesthesia.**

Following the second procedure, wound cultures were again positive for ESBL E. Coli. and Klebsiella pneumoniae with resistance to ciprofloxacin as well.

- Wound left open to heal by 2nd intention with minimal drainage, patient advised to use wet to dry dressings twice daily.

On follow-up office visit a month later, wound is healing properly and forming granulation tissue.

Discussion

This case highlights an unlikely presentation of an ESBL infection in a young, healthy adult with no identifiable risk factors. This presentation illustrates that rare wound pathologies can also present in otherwise healthy, young, low-risk individuals and stresses the importance of maintaining broad differentials when considering causative organisms, even in low-risk patients. Early, diligent source control with frequent wound care management and close follow up yields better infection control and wound care outcomes.

Figure