Case Report

Necrotising Fasciitis Due to Multidrug Resistant Acinetobacter Baumanii: Treatment Options

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ABSTRACT

We report a case of necrotizing fasciitis due to Acinetobacterbaumanii in a patient who underwent lower segment caeserian section. Acinetobacterbaumanii, a multiresistant strain sensitive to Colistin , Polymyxin B and Tetracycline was isolated from the surgical site after the removal of sutures on the 8th post operative day. Though she was treated with Amoxyclav she further developed necrotizing fasciitis. Wound debridement was done. Pus sample following debridement again yielded Acinetobacterbaumanii with same sensitivity. The patient's condition worsened with profuse discharge and spreading necrosis with onset of systemic symptoms. She was treated with Cefaperazone /Sulbactum to which she responded and recovered uneventfully.

Key words:*Acinetobacterbaumanii, Necrotising Fasciitis, Multidrug Resistant*

INTRODUCTION

Acinetobacterbaumanii is a non-fermenting Gram negative coccobacillus which was first described in 1911 as Micrococcus calcoaceticus.[1] Later it was recognized as Acinetobacter in the year 1950.[1] The natural habitat of Acinetobacter are water and soil. It is commonly isolated from hospital environment and survives environmental desiccation for weeks promoting its transmission in hospitalised patients.[1] It has emerged as a significant and serious pathogen due to its persistence in the hospital and its multidrug resistant property.[2]

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CASE REPORT

A patient aged 23 years, primigravida, underwent lower segment caesarian section for cephalopelvic disproportion as an indication. Her immediate post operative period was uneventful. She was treated with Ceftrioxone and Ornidazole. The sutures were removed on the 7th post operative day. On the 8th day, patient complained of pain and purulent discharge at the suture site. On Local examination there was purulent discharge from the operated site with induration.

Pus was sent for culture and sensitivity. Culture yielded pure growth of nonlactose

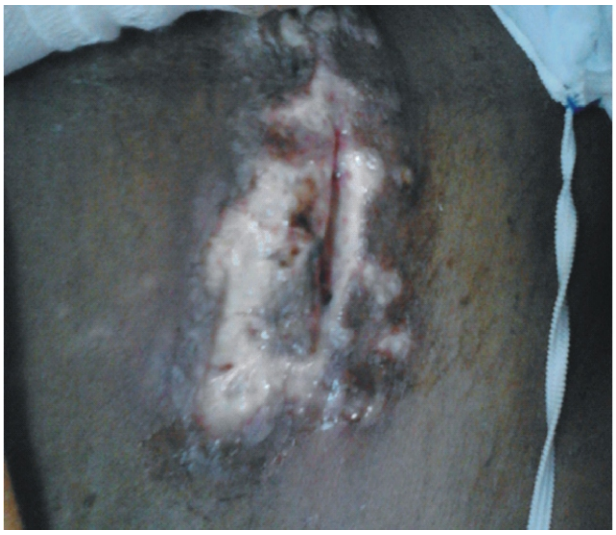

Figure 1: Wound site showing necrotic tissue

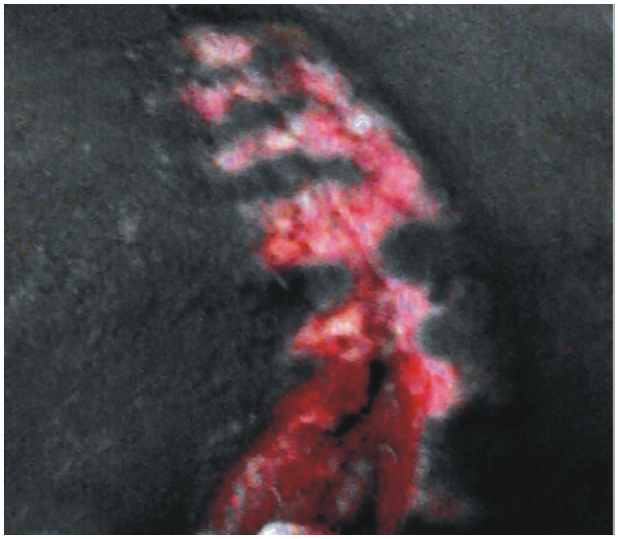

Figure 2: Woundsite showing healthy granulation tissue following treatment with *cefaperazone / sulbactum*

fermenting colonies on Mac Conkey agar. The organism was nonmotile ,oxidase negative. Further tests revealed that it was asaccharolytic, utilized citrate, negative for urease, reduced nitrate to nitrite, negative for indole. It acidified 10% lactose.[3] Based on the above characteristic features it was identified as Acinetobacterbaumanii.[3] Antibiotic susceptibility testing was done by Kirby Bauers disc diffusion as per CLSI guidelines. It was a multidrug resistant strain sensitive only to Tetracycline, Colistin and Polymyxin B. As the patient was breast feeding tetracycline was not started. Due to systemic toxicity Colistin and Polymyxin B was not administered. She was treated with Amoxyclav .The patient's condition did not improve. A second sample of pus was sent for culture and sensitivity which again grew *Acinetobacterbaumanii* with the same sensitivity. By the ninth day the infection had spread resulting in a necrotizing fasciitis and she developed systemic manifestations of Gram negative septicemia. Wound debridement was done.

A third sample was sent for culture and sensitivity which again yielded *Acinetobacterbaumanii* with the same sensitivity. On discussion with the treating physician it was decided to start with *Ampicillin/sulbactum or Cefaperazone/ sulbactum* emperically. She was started with *cefaperazone/sulbactum* for 9 days. An observable improvement at the site of surgery was noticed with no soakage and appearance of rich granulation tissue. Secondary suturing was done. The patient improved significantly. A fourth sample sent after 9 days of antibiotic therapy for culture and sensitivity showed no growth.

DISCUSSION

We report a case of necrotizing fasciitis caused by *Acinetobacterbaumanii*. Skin and soft tissue infections due to this organism are uncommon.[4] Necrotizing fasciitis is usuallypolymicrobial in approximately 70% of cases[5] with Streptococcus group A and B being

the most common isolate followed by members of family Enterobacteriaceae[4]. Two cases of *Acinetobacterbaumanii* causing necrotizing fasciitis have been reported but were found to be polymicrobial.[5]

The problem faced with this organism is the limited therapeutic options available as it has progressively acquired resistance. Multidrug resistantAcinetobacter strains have been defined as strains resistant to three or more classes of antibiotics: Fluoroquinolones, extended spectrum cephalosporins, Betalactum /betalactamase inhibitor combination, Aminoglycosides and Carbapenems.[5] It has been postulated that resistance to Carbapenems is sufficient to define an isolate as highly resistant.[5] Our isolate was resistant to all the antibiotics mentioned above including Carbapenems and was sensitive only to Tetracyclines, Polymyxin B and Colistin. Since the patient was breast feeding Tetracyclines and Polymxins were not used. Betalactamase inhibitor Sulbactum has been proved to be successful in treatment of multidrug resistant strains of *Acinetobacterbaumanii* because Sulbactum has intrinsic antibacterial activity against Acinetobacter, as it can bind to its Pencillin binding proteins.[6]

The patient was treated with cefaperazone sulbactum for 9 days as this was the only combination available in our hospital. The patient responded to treatment and she recovered. The other treatment options are a combination therapy of Rifampicin/Colistin and Tigecycline/Colistin with a promising synergy in successful treatment of multidrug resistant strains of *Acinetobacterbaumani.*[7]

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