A case of Snakebite complicated by Morganella morganii subspecies morganii Biogroup I infection

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Citation

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Abstract

A case of Morganella morganii subspecies morganii Biogroup I infection is confirmed by repeated isolation. Earlier patient failed to respond to empirical prescriptions of antibiotics, but promptly responded to a course of Cefotaxime to which the strain was sensitive. Snake bite wounds are secondarily infected with varied groups of organisms and specific isolation and identification is important to administer optimal antimicrobial therapy to avoid long term complications.

INTRODUCTION

Snake bite carries the consequences of envenomation primarily but also can produce a lesion at the bite site with extensive necrosis. The dead tissue can secondarily get infected by bacteria coming from the snake's mouth that may be inoculated at the moment of bite ([1]). Till recently very little was known about the bacteria responsible for the infection. In the recent past Morganella morganii was identified as an important pathogen associated with snake bite apart from the other hospital infections. Morganella morganii is a gram negative bacilli belonging to the family Enterobacteriaceae found in the environment and also in the intestinal tracts of man, mammals and the oral cavity of reptiles as a part of normal flora ([1,2]). Despite its widespread distribution it is an uncommon cause of community acquired infection and is most often encountered in postoperative and other nosocomial settings where it can cause urinary tract infections, sepsis, pneumonia, wound infection, chorioamnionitis, empyaema and peritonitis. Here we present a case report of soft tissue infection with M.morganii following snake bite.

CASE REPORT

A 38 year old female was admitted to the surgical casualty ward after being bitten by a suspected poisonous snake on the right thumb. Patient was given anti-snake venom and prophylactic antibiotics (Ampicillin + Cloxacillin 500 mg IV 8 th hourly) along with other first aid measures.

On the 3 rd day the patient developed cellulitis with an abscess on the dorsum of the hand. Abscess was drained and patient was put on a changed regime of broader spectrum antibiotics (Amoxicillin + Clavulanic acid) to cover the beta lactamase producing strains. But the abscess recurred and the patient had to undergo repeated incision and drainage. The direct smear made from these pus samples showed plenty of pus cells with gram negative bacilli on gram staining.

All the samples on culture grew Morganella morganii subspecies morgani biogroup 1 ([3]) with the same antimicrobial sensitivity-resistant to Ampicillin and 1 st and 2 nd generation Cephalosporins, but found to be sensitive to 3 rd and 4 th generation Cephalosporins, Aminoglycosides, Fluoroquinolones, Piperacillin and Tetracycline. After the second incision and drainage she was changed to Cefotaxime as guided by the antibiogram to which she responded and made a good recovery without any disability.

DISCUSSION

Soft tissue infections can be an important complication of snakebite with local envenoming. Various origins of bacteria at the site of venomous snakebite have been considered. Culture of fang, fang sheath and venom of snakes like Bothrops, Vipers, Rattlesnake and Naja naja had shown heavy colonization with many bacteria ([2,4,5]). These include Enterobacteriaceae like Morganella spp. and E.coli, Group D Streptococci, and anaerobes like Clostridia spp. In these cases the bacteria isolated were similar to that found in the abscesses from the bitten patients.

Other sources suggested include the victim's cloths and skin which were pierced by the fangs of the snake, or other

unsterile substances applied to the site of bite. In hospitalized patients the bacteria from the hospital could contaminate the lesion and cause nosocomial infection. In one prominent study M. morganii was isolated in 50% of abscesses occurring at the site of Bothrops bite. In another 12 year study M.morganii is reported as causing 10% of secondary infections following snake bite ([4]).

M.morganii is found to be inherently resistant to several antibiotics including Ampicillin, first and second generation Cephalosporins and to combinations of Amoxycillin and Clavulanic acid ([6]). It proved true in the present case as the patient did not respond to the initial antibiotics prescribed on empirical basis. The septic complications of snakebites need an optimal microbiological evaluation as varied groups of bacteria with unpredictable antibiotic sensitivity patterns has been reported.

The present case report enlightens the role of bacteriological culturing of septic materials from primarily and secondarily infected snake bite wounds and starting on appropriate antibiotics at the earliest to prevent the disabling complications.

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