Case Report

An unusual case of gluteal abscess in immune-competent patient caused by Edwardsiella tarda.

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ABSTRACT: Aims; Genus Edwardsiella possesses the solitary species, perceived as pathogenic to humans i.e. Edwardsiella tarda. Gastroenteritis is the primary manifestation caused by E. tarda but sporadically, extra-intestinal infections also have been reported. Methods; Here we report a case of gluteal abscess caused by E. tarda. Result & Conclusions; Human seems to be infected with Edwardsiella through ingestion or inoculation into a wound. The possibilities of this isolate as a potential causative agent of extra-intestinal infections needs to be studied.

1. Introduction

Edwardsiella tarda comes under family - Enterobacteriaceae; tribe - Edwardsiellae; genus - Edwardsiella; with two more species i.e. E. icteruri and E. hoshiniae. [1] It is a Gram negative, motile, facultatively anaerobic rod-shaped bacterium.[2] Edwardsiella tarda is infrequently pathogenic to humans. [3] Typically domain of this bacteria is freshwater. It usually colonizes gut of fish, reptiles, birds and mammals. [4] It is predominantly associated with gastrointestinal disease, although recent reports of infections other than GI tract are broadening the contemporary perception of the clinical spectrum of E. tarda.[5] Here we report a case of gluteal abscess caused by E. tarda.

CASE REPORT:

A 50 year old female was admitted to the surgical ward, Kalpna Chawla Government Medical college, Karnal, Haryana, India. Patient presented with localized pain and swelling in the left gluteal region along with fever since 15 days. History revealed administration of multiple injections in her left gluteal region for spider intoxication treatment in her village. On examination, the overlying skin was apparently normal, warm to touch. On palpation, the swelling was approximately 5-6 centimeters in diameter, tender, hard, lumpy and non fluctuant with no abscess point. Patient belonged to a rural area, is a vegetarian and gave no history of any other trauma to that region or any exposure related to aquatic environment or animals. Patient was a non-diabetic and not on any other medication. On examination, she was febrile, with a temperature of 38.7°C, pulse rate of 112/minute, blood pressure of 110/70 mm Hg and respiratory rate of 26/minute. Preliminary blood investigations like complete hemogram, liver function tests, renal function test, lipid profile were within normal range. Her glycemic index was under control. She tested nonreactive to HIV. A clinical diagnosis of gluteal abscess was made. The pus was aspirated aseptically and discharge was sent for microbiological examination. Patient was started on ceftriaxone and amikacin empirically.

Laboratory investigations

The pus sample was processed for culture and sensitivity, gram staining and acid fast staining, as per standard protocol. Gram staining showed pus cells and gram negative bacteria in oil immersion field. ZN staining was negative for acid fast bacilli. After overnight incubation, MacConkey agar plate showed growth of lactose non fermenting colonies, size 0.5-1mm in diameter, round, translucent, margins entire, no specific odor and no pigment production. On 5% Sheep blood agar; colonies were hemolytic, size 1-2 mm in diameter; margins entire, no specific odor or no pigment production after overnight incubation. The isolate was a Gram negative bacillus, catalase positive and oxidase negative. Biochemical reactions were given in table 1. The isolate was identified as Edwardsiella tarda. The isolate was sensitive to almost all routine antibiotics ampicillin, ceftriaxone, cefoperazone, ceftixime, cefepime, gentamicin, amikacin, ciprofloxacin, imipenem.

RESULTS AND DISCUSSION

In general, human infections caused by Edwardsiella and transmitted from fish or the aquatic environment is not uncommon. It is determined by various factors i.e. environment, patients’ contact with fish, dietary habits and lastly the immune system status of the exposed individual. [6] Fish is the sole source of infection through ingestion or inoculation. [7] Edwardsiella tarda is the only known pathogenic species to humans under this genus. [8] Outside the tropical and subtropical areas human infections caused by E.tarda are considered rare. Clinical spectrum or manifestation caused by
this microorganism, range from an asymptomatic carrier state or mild gastroenteritis to colitis or even extra-intestinal infections. Such occurrences are consistently associated with patients who are immune-compromised. [9]

E. tarda is known to cause potentially fatal infections such as sepsis, cellulitis etc. These infections are associated with high mortality (50%) if left untreated. [10] The isolate is reported to cause a diverse array of infections like tubo-ovarian abscess, bilateral salpingitis, bloodstream infections, neonatal sepsis and cholangitis.[3, 4, 11] An immune-deficient individual with sepsis and hepatic abscesses infected as a result of a fishing has been reported.[12]

Slaven E et al., reported a case series of 11 cases. Out of eleven cases, five cases were associated with wound infections, three cases occurred in aquatic environment; an arm laceration after a fall in water, and another case was after a fall in a canal followed by a puncture wound to a foot. It happened after the patient stepped onto fish bones. A 52 year old diabetic male with cellulitis of the left foot has been documented. Five days before admission he had been fishing and had stepped on a catfish sustaining a penetrating wound.[10]

Our case had left gluteal abscess, there was no myonecrosis. There were no gastrointestinal manifestations. No other risk factors were present except that she has had history of taking multiple injections to that area in her village. The mode of transmission is therefore presumably due to inoculation of infection through multiple contaminated injections. There are serious infections secondary to E. tarda alone contributing life threatening infections, significant morbidity and mortality.[11] It is pertinent to note that our patient sought medical attention quite early in the course of infection.

In-vitro, there are very similar biochemical reactions between Salmonella and E. tarda particularly production of hydrogen sulphide on triple sugar iron agar. This may lead to misidentification of organism but can be distinguished by indole production by E. tarda.[1] Although a rare cause of soft tissue infection, it is important to keep this isolate in mind and put up appropriate biochemical tests for identification.

E. tarda is reported to be sensitive to most of the routinely used antimicrobials. However, resistance to colistin and polymyxin B and production of beta-lactamase has been documented which poses a therapeutic challenge. Our isolate was not a beta lactamase producer and sensitive to all routinely used antibiotics- Amikacin, Ceftriaxone, Cefotaxime, Cefepime, Piperacillin-tazobactam, Amoxicillin-clavulanic acid, Imipenem. For colistin zone size is 11mm by disc diffusion method and MIC was 4μg/ml by broth micro-dilution. [13]

In conclusion, although rare but also E. tarda has been reported to cause a diverse array of extra-intestinal infections. A high index of suspicion of this organism in cases other than gastroenteritis is therefore indicated. The possibilities of this isolate as a potential causative agent of extra-intestinal and life threatening infections needs to be studied.
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References:


