CASE REPORT

Pelvic abscess caused by a slow growing anaerobic bacterium, *Eggerthella lenta*: First case report from Pakistan

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Abstract

We report a case of intrauterine contraceptive device (IUCD) related pelvic abscess caused by a challenging to grow anaerobic Gram positive rod named Eggerthella lenta. A middle aged lady presented with complaints of lower abdomen pain, intermittent vaginal bleeding since two weeks. Ultrasound of abdomen and pelvis showed right adnexal mass involving fallopian tubes, right ovary and gut omentum. She underwent removal of adnexal mass and total abdominal hysterectomy and was treated empirically with vancomycin, ciprofloxacin and metronidazole. Histopathological examination disclosed adenomyosis and chronic non-specific endometritis. Microbiological evaluation of pus aspirate grew Eggerthella lenta.

Keywords: Eggerthella lenta, Pelvic abscess.

Introduction

Eggerthella lenta (E. lenta) is a non-motile, non-spore-forming anaerobic Gram-positive bacillus and belongs to the family Coriobacteriaceae.[1] Eggerthella species are human gastrointestinal tract flora.[1] This organism has been isolated from several human sites, like gastrointestinal tract, female genital tract, oral cavity, thoracic cavity, and prostate.[2] Eggerthella lenta infection is associated with intrauterine devices, gastrointestinal diseases; however malignancy is the most common predisposing factor, related with bacteraemia.[3,4] Other spectrum of infections caused by E. lenta is appendicitis, cutaneous abscess, genitourinary tract infection, liver abscess, peritonitis, spondylodiscitis, and wound infection.[5] Data regarding spectrum of disease caused by this organism is limited, with only 9 published case reports and one small case series of 3 patients.[6] There is a lack of literature on Eggerthella lenta infection, probably due to the non-availability of identification methodologies. Here we report the case of a middle aged female with pelvic inflammatory disease with E. lenta infection.

Case Report

We received a pus specimen for culture and sensitivity on 30th October 2015 in Aga Khan University Karachi Pakistan from a 47-year-old female, presenting with complaints of fever with chills, abdominal pain, nausea, vomiting since two weeks. Her lower abdomen pain was associated with intermittent vaginal bleeding. Her vital signs included temperature of 38.6°C, a pulse rate of 174bpm, blood pressure of 138/80 mmHg and a respiratory rate of 22 breaths/min. She had no prior comorbid except an intrauterine device placed since ten years. Laboratory investigations revealed an elevated white blood cell count of 11500/cc (neutrophil 70% and 30% lymphocytes). Ultrasound of abdomen and pelvis showed findings of right adnexal mass involving gut omentum, fallopian tubes and right ovary. She was started on empirical IV ciprofloxacin 200 mg once a day, IV vancomycin 1000 mg twice daily and IV Metronidazole 400 mg twice daily. The patient was taken to the operating room for total abdominal hysterectomy, removal of adnexal mass. 250 ml pus was aspirated and sent for culture and uterine and tubo- ovarian mass was submitted for histopathological evaluation. Post operatively IV Vancomycin was discontinued and ciprofloxacin and metronidazole were continued. Patient became afebrile and improved on these antibiotics.

Microbiological Analysis

Pus aspirate Gram staining showed numerous pus cells and gram positive bacilli. Pus specimen was inoculated on blood agar, chocolate agar, incubated in 5% CO2 aerobically and a cooked meat incubated at 37°C. Another blood agar plate with a metronidazole disc placed was incubated in an anaerobic jar for 48 hours. After 48 hours no growth was found aerobically and anaerobically. Primary anaerobic plates and anaerobic sub culturing from cooked meat on blood agar were placed for prolonged incubation. After 5th day of incubation, there was very fine growth present on blood agar that was being inhibited by metronidazole. Gram stain from colony revealed rudimentary branching Gram positive rods without spores. On further sub-culturing small grey, smooth, raised colonies were observed after 7 days of anaerobic incubation. The organism was identified by standard conventional biochemical method, the API system (20A) (bioMérieux). Susceptibility testing was done by performing minimum inhibitory concentration (MIC) using E-Strip on 5% sheep blood agar against vancomycin, penicillin, metronidazole and imipenem. According to Clinical

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laboratory standard (CLSI 2010) break point this isolate was found susceptible to penicillin (MIC=0.002mcg/ml), imipenem (MIC=0.002mcg/ml) and intermediate to metronidazole (MIC=16mcg/ml). For vancomycin there is no CLSI established breakpoints, however MIC value was found low (0.16mcg/ml).

Histopathological Evaluation

On gross examination, cut surface of uterus was fibrotic with multiple pus filled cavities and haemorrhage. Microscopic examination revealed chronic non-specific endometritis, Adenomyosis, Severe acute and chronic nonspecific salpingoophoritis with no evidence of malignancy.

Discussion

To the authors' knowledge this is the first case report of infected IUCD caused by eggrethella lenta infection in Pakistan. Since this patient is a resident of Gilgit which is a remote area of Pakistan, an informed verbal consent was obtained on telephone for writing the case report. There is limited published data available on IUCD associated eggrethella lenta infection. Our case was of a complicated pelvic infection caused by Eggerthella lenta. The main purpose of reporting this case is to highlight the importance of prolonged anaerobic incubation time required to optimize the growth of this slow growing anaerobe. This organism was originally called as Eubacterium species, reclassified as Eubacterium lentum. In 1999, after genetic analysis it was placed in a new genus and renamed as Eggerthella lenta.[3] Current gold standard for identification of this species is gene sequencing, however, in this case due to cost constrains conventional identification by using API anaerobes was done with 84% successful identification. In cases of localized abscesses majority of studies reported isolation of Eggerthella lenta as a part of polymicrobial infection,[7] nonetheless in current case this was the only organism isolated from pelvic abscess. Eggerthella lenta infection is associated with significant high mortality, ranging from 36% to 40%.[6] Majority of case reports affiliated different comorbid conditions including malignancy with the bacteremia caused by this organism, here in the current case we did not identify other patient comorbids except prolonged placement of intrauterine contraceptive device.[7] Source control by surgical intervention or drainage of focus abscess is essential to increase survival.[6] Clinical condition of this patient indicated bacteremia and sepsis however we did not receive any blood culture. Patient showed good clinical recovery after surgical drainage of tubo-ovarian mass along with broad spectrum antibiotics. Patient received vancomycin and metronidazole which definitely would have covered this organism as shown in vitro susceptibility. There are no clinical guidelines available for choice of antimicrobial therapy, various case reports have reported different antimicrobial therapies using monotherapy with a broad spectrum β-lactam antibiotics like carbapenem or piperacillin-tazobactum or combination of an intravenous beta-lactam antibiotic with metronidazole.[8] Similarly variable susceptibility to penicillin and metronidazole is reported in various reports.[7]

Conclusion

Eggerthella lenta is an emerging pathogen that has a tendency to cause IUCD related pelvic abscesses requiring surgical drainage. In clinical laboratories every effort should be made for the optimum recoveries of slow growing bacteria including provision of prolonged anaerobic incubation.

Disclaimer: This case report has not been presented in any conference till date.

Ethical Approval: Obtained from institution.

Conflict of Interest: None.

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