Case Report

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Actinomyces neuii as a Cause of Vulvar Abscess

Urgent message: While abscesses are seen commonly in the urgent care setting, location and presenting complaints can offer essential clues as to the causative organism—and inform timely diagnosis and treatment decisions.

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Introduction

Abscesses are common in urgent care and emergency medicine and are easily treated with drainage, and in some cases antibiotics. The majority of cases are caused by *Staphylococcus aureus* and *Streptococcus* sp. Rarely, gram-negative bacilli can be found in abscesses in the perineal area. More unusual organisms such as the *Actinomyces* species and other anaerobic infections may also occur. In this case, we identified a case of *Actinomyces neuii*, a relatively rare species.

Case Presentation

A 34-year-old female presents to urgent care with a 4-day history of a painful lump on the lateral edge of the right vulva. She has had similar lumps in the past, but they have been much smaller, less painful, and resolved with warm compresses and "popping" them herself. The most recent occurred several months ago. She does not believe the symptoms are related to shaving. The pain is described as "sore" and is worse with touching and sitting. There are no fever, chills, swollen glands, or body aches. The patient has no history of MRSA infection. She has a history of genital herpes and takes valacyclovir, but has not had an outbreak in more than a year. She has no significant past medical history and takes no other medication.

Vital signs are as follows:

- Temperature 96.9° F temporal
- Heart rate 102 bpm
- Respiratory rate 14 per min
- Blood pressure 124/82

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The physical exam is normal except for the genital exam.

On the right lateral mid portion of the labia majora, there is a 2.5 cm protruding, fluctuant abscess that is tender to touch. The discomfort is not out of proportion to the findings. There is minimal surrounding erythema. There are multiple areas of scarring over both sides of the labia that appear to be healed and much smaller abscesses that were self-drained by the patient. There is no enlargement of inguinal lymph nodes appreciated.

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The abscess was incised and drained in the usual fashion. A culture was taken. Trimethoprim–sulfamethoxazole was started based on the history of previous infections and the amount of purulence. Self-care at home was to include sitz baths several times per day and dressing changes.

The patient returned in 48 hours for a recheck. The pain had improved and the drainage had slowed but not stopped. There was no surrounding cellulitis. She was to continue home care and antibiotics until the area healed.

Gram stain was positive for 3+ PMNs and 1+ gram-positive cocci and occasional gram-negative rods. Culture result indicated normal skin flora and 1+ *Actinomyces neuii*. Sensitivities were not completed. The patient was contacted and the TMP-SMX was changed to penicillin V. She was encouraged to follow up with her primary care doctor.

Discussion

Although not all skin abscesses routinely require culture, vulvar abscesses should almost always be cultured for aerobic and anaerobic bacteria at the time of drainage.[1] MRSA, resistant gram-negative organisms, and other resistant organisms are increasing in frequency in genital infections. Bartholin glands, located in the labia minora at 4:00 and 8:00 with respect to the vaginal opening, may develop abscesses as a result of gonorrhea or chlamydial infections. Cultures for these entities should be obtained in addition to aerobic and anaerobic cultures when Bartholin's abscesses are drained.

Actinomyces species classically cause human actinomycosis, which is a granulomatous infectious disease that may result in orocervicofacial, thoracic, abdominopelvic, or CNS abscess formation with draining sinuses.[2]

True actinomycosis is a mostly chronic disease that is slowly progressing with suppurative and fibrosing inflammation. The hallmark of the disease is a discharge from sinus tracts containing sulfur granules.[3] Bacterium responsible for these chronic infections are facultative anaerobes, with *Actinomyces israelii* being the most commonly recognized.[4,5] *Actinomyces* sp. responsible for actinomycosis are generally gram-positive rods with branching filaments.

Advances in laboratory identification methods have led to additions to the genus *Actinomyces*. *A neuii* was added in 1994. Unlike other *Actinomyces* sp., it is aerobic or aerotolerant, does not appear filamentous, and does not produce sulfur granules.[1] Relatively rare, *A neuii* represents only 17% of all *Actinomyces* isolates.[6] This may be due partially to its frequent misinterpretation as a skin contaminant[5] or dismissal as a commensal coryneform bacillus.[7] *A neuii* does not cause typical actinomycosis.[5]

"Although classic actinomycosis frequently occurs in patients who are immunocompromised, abscess formation from A neuii *has not been shown to be related to immunosuppression or other risk factors."*

A literature review identifies fewer than 200 cases of recorded infections with *Actinomyces neuii*. Simple abscesses and infected atheromas appear to be the most common infections; endophthalmitis, bacteremia, foot ulcers, and endocarditis have also been described.[8,9] Rarely, cases of chorioamnionitis have been reported.[6] The mammary, axillary, and inguinal areas appear to be the most common sites for abscesses due to this organism.[4,7] Many cases are polymicrobial and may be mixed with normal skin flora.[6]

Although classic actinomycosis frequently occurs in patients who are immunocompromised, abscess formation from *A neuii* has not been shown to be related to immunosuppression or other risk factors.[5]

The prognosis of infections related to *A neuii* is very good. Local abscesses respond well to incision and drainage and antibiotics.[4] The majority of tested isolates show susceptibility to penicillin G, ampicillin, cefazolin, cefuroxime, ceftriaxone, and imipenem.[6] There is diminished susceptibility to aminoglycosides and flouroquinolones,[5] which should be avoided. Beta-lactam antibiotics or cephalosporins are recommended.[10] ■

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