

# Case Letter

## Primary Cutaneous *Actinomyces neuui* Infection of the Breast Successfully Treated With Doxycycline

To the Editor:

Cutaneous infections with *Actinomyces neuui* are rare and usually are secondary to trauma or another antecedent cutaneous infection. We present a case of a 73-year-old man with a primary breast abscess from *A neuui* mimicking an epidermoid cyst that was successfully treated with doxycycline.

A 73-year-old man presented with a recurrent draining nodule on the right side of the chest of 6 months' duration. On physical examination, he had a firm, pencil eraser–sized nodule with adherent scale immediately superior to his right nipple. A biopsy showed granulomatous inflammation and fibrosis, and although no cyst wall or contents were seen, a presumptive diagnosis of a ruptured epidermoid cyst was made. After an unremarkable mammogram, the nodule was surgically excised. The patient continued to have purulent and bloody discharge from the site, and a culture showed *A neuui*. He incidentally had been started on oral doxycycline 100 mg twice daily for concomitant rosacea at the time of culture, and the breast abscess completely cleared with a 3-month course of doxycycline without further intervention.

*Actinomyces* species are gram-positive bacteria found only in humans that cause chronic and suppurative soft-tissue infections, usually due to traumatic inoculation with a clear history of an inciting event. *Actinomyces* species are thought to represent a secondary infection in most cases, though primary cutaneous infections without antecedent trauma are unusual.<sup>1,2</sup>

Infections due to *A neuui* are rare and can present in a variety of ways, including mammary prosthetic infection, endophthalmitis, neonatal sepsis,

endocarditis, and pericarditis.<sup>3,4</sup> *Actinomyces neuui* rarely causes typical primary actinomycosis with draining sinuses and sulfur granules.<sup>5</sup>

Primary cutaneous infections due to *A neuui* also are rare, particularly in breast tissue where they can mimic malignancy. According to a 2009 case report, which claims to be the first case of primary cutaneous *A neuui* infection of the breast, there are fewer than 40 case reports in the worldwide literature from the last 100 years of any *Actinomyces* species causing primary breast tissue infections.<sup>6</sup>

*Actinomyces* species are usually susceptible to  $\beta$ -lactam antibiotics, including penicillins, cephalosporins, and carbapenems; tetracyclines; erythromycin; and clindamycin.<sup>2,3,5,7</sup> One case of infective endocarditis due to *A neuui* was successfully treated with a 9-month course of doxycycline.<sup>4</sup> There is less evidence for appropriate antibiotic treatment of cutaneous infections, and an extended course of amoxicillin failed in 1 case of a primary breast infection.<sup>6</sup> As a result, surgical excision has been advocated as a first-line treatment of cutaneous infections with *A neuui*.<sup>8</sup> We present a rare case of primary cutaneous *A neuui* of the breast successfully treated with doxycycline after surgical removal failed to resolve the nodule, lending support to this tactic for cutaneous infections, possibly in lieu of surgery.

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The authors report no conflict of interest.

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