ISOLATION OF \textit{NOCARDIA ASTEROIDES} FROM CLINICAL BOVINE MASTITIS - A CASE REPORT

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ABSTRACT

Present communication describes isolation of \textit{Nocardia asteroides} from bovine mastitic milk from Kashmir. Direct microscopic examination of a milk smear revealed presence of Gram positive filamentous organisms with uneven staining which were partially acid fast positive when stained with Ziehl-Neelsen stain. The isolate was found resistant to penicillin and oxytetracycline while as it was found sensitive to gentamicin, enrofloxacin and doxycycline. The consumption of such raw milk can lead to human infection.

\textit{Nocardia asteroides} has long been recognized as an important animal pathogen that causes sporadic bovine mastitis, pneumonia and suppurative pleuritis with emphysema in dogs and cats (Quinn \textit{et al}., 1994). In humans suppurative and pyogranulomatous infections occur in immunosuppressed individuals (Biberstein and Hirsh, 1999). Disease is most frequently seen in cattle and dogs less in sheep, pig and goat and rarely in birds. In cattle, the nocardial mastitis is characterized by sudden onset with fever, anorexia, abnormal milk secretion, swollen, hot, painful udder and discharging fistulous tracts. In chronic cases granuloma is produced in udder (Lerner, 1996). Though \textit{Nocardia} species have been isolated in Kashmir from uterine secretions of repeat breeding cows (Seh \textit{et al}., 1999) there appears no report of its isolation from mastitic milk. Thus, present communication describes the first ever isolation of \textit{Nocardia asteroides} from mastitic milk in Kashmir valley.

As a part of routine bacteriological examination of mastitic milk samples referred to this division from Veterinary Clinics of Faculty of Veterinary Sciences and Animal Husbandry, (SKUAST-K), Shuhama, as well as from private owners, a milk sample from a crossbred cow aged 6 years belonging to a localite was received for cultural and antibiotic sensitivity test. The cow showed swelling of udder that was painful to touch and discharging curdled milk, which was thick and had granules. The cow had been treated with some antibiotics but showed little improvement in quality of milk. Before processing it was ensured that the sample from affected quarter was collected aseptically in a sterile vial. Direct microscopic examination of a milk smear revealed presence of Gram positive filamentous organisms with uneven staining (Fig. 1). The filamentous rods were found partially acid fast positive when stained with Ziehl-Neelsen stain. Then the sample was inoculated into nutrient broth and incubated at 37\textdegree C overnight. Next day white powdery surface pellicle was observed over the broth and it was transferred to blood agar and Saborauds' dextrose agar plates. The plates were incubated at 37\textdegree C. After 3 days of incubation, characteristic pigmented powdery colonies were produced. A well-separated colony was picked up into a nutrient agar slant for further examination. The organism was identified as \textit{Nocardia asteroides} on the basis of morphological, cultural and biochemical tests (Buchanan and Gibbon 1994, Carter \textit{et al}., 1995 and Collee \textit{et al}., 1996).

The isolate was subjected to \textit{in-vitro} antibiotic sensitivity test using the disc diffusion method described by Bauer \textit{et al}. (1966). The \textit{in-vitro} sensitivity test was carried on over
Mueller Hinton agar (HiMedia, Mumbai, India) plates using gentamicin, penicillin, oxytetracycline, enrofloxacin and doxycycline discs supplied by HiMedia. Interpretation of the isolates as sensitive or resistant was made as per standard procedures. The isolate was found resistant to penicillin and oxytetracycline while as it was found sensitive to gentamicin, enrofloxacin and doxycycline.

The owner was made aware of the public health significance of the organism and chances of picking up of infection from such mastitic milk. Isolation of *Nocardia asteroides* from clinical mastitis is significant in view of its increasing reports of isolation from immunosuppressed individuals. The consumption of such raw milk may lead to human infection.

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REFERENCES


