

Antibiogram of Pus Sample Collected from Multiple Abscesses of Cow: A Case Study

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ABSTRACT

The present article reports on the bacteriological examination and antibiotic sensitivity test of pus sample collected from multiple abscesses at the maxillary region of a cow.

Key words: Bacteriological examination, Pus, Antibiotic sensitivity

INTRODUCTION

The purulent exudate ‘pus’ remains surrounded by a limiting membrane the pyogenic membrane^{1,2}. During pus formation, there occurs by a breach of surface of the skin or mucous membrane leading to the entrance of pyogenic microorganisms¹. Usually solitary pus containing external outgrowths are common in cattle and buffaloes³.

The present study was conducted to identify the etiology and the antibiotics/ antibacterial drugs which show sensitivity against the various pathogenic agents involved in the pus formation from the case of hernia.

MATERIALS AND METHODS

The pus sample was collected by draining from an abscess formed at the maxillary and mouth regions of a cross bred cow presented for clinical examination at the Instructional Livestock Farm Complex (I.L.F.C.) of Arawali Veterinary College, Sikar during April 2017.

The collected pus sample was then brought to the Department of Veterinary Microbiology of Arawali Veterinary College, Sikar for bacteriological examination and reporting.

The specimen was incubated overnight in nutrient broth medium. The pus sample was examined⁴ by bacterial culturing on nutrient agar plate followed by staining by Gram’s Method. Antibiotic sensitivity test was carried out by Kirby-Bauer antibiotic disc diffusion assay method⁵ on Mueller-Hinton agar with certain modifications⁶ using antibiotic discs (Titan Biotech Ltd., Bhiwadi, Rajasthan, India) available at the department. The concentration of antibiotic in each filter paper disc was as per the specification of the manufacturer required for laboratory purpose. Then spread plate method of bacterial culture was done from the pus sample followed by its incubation at 37°C for 24 h in a B.O.D. incubator installed at the department.

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RESULTS AND DISCUSSION

The pus sample was subjected to spread plate culture on Nutrient agar media plates. Gram's method of staining with the isolated pure colony revealed Gram positive cocci arranged in clusters or clumps when examined under the high power magnification of the compound microscope. To obtain pure bacterial colonies it was subcultured on Nutrient agar plates. It revealed the presence of circular, convex, glistening colonies with full regular edges after incubation. The bacteria were determined to be grouped under *Staphylococcus* spp.^{4,7-9}.

Antibiotic assay revealed the bacterial isolates to be highly sensitive to the minimum inhibitory concentration (MIC) of antibiotics, amikacin (30 mcg), tetracycline (30 mcg), amoxicillin (10 mcg) and streptomycin (30 mcg) with moderate sensitivity to gentamicin (10 mcg) and ceftriaxone (30 mcg) respectively. The degree of sensitivity was determined on the basis of zone of inhibition produced by the isolated bacteria after exposure to the particular antibiotics and after comparison with the minimum inhibitory concentration of the respective antibiotic.

The results obtained on cultural properties of the bacteria and its antibiotic disc diffusion assay revealed in the present study was in agreement with the findings of Sahoo and Ganguly², Ganguly *et al.*^{6,11} and Tiwari and Kashyap¹⁰.

CONCLUSION

The present study revealed the presence of *Staphylococcus* spp. in the pus sample collected from the case of cow abscess. The bacterial strain was found to be sensitive to broad spectrum antibiotics which was reported and recommended to the I.L.F.C. for administration in mixed preparations in divided doses at alternate daily intervals. Also, it was advised for the application of topical antibiotic/ antiseptic ointments after proper drainage of pus and wound dressing to be performed daily.

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