

Microbiological Examination of Pus Sample Collected from a Clinical Case of Hernia of a Cow

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ABSTRACT

The present article reports on the bacteriological examination and antibiotic sensitivity test of pus sample collected from a cow suffering from hernia.

Key words: Bacteriological examination, Pus, Antibiotic sensitivity

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INTRODUCTION

The purulent exudate 'pus' remains surrounded by a limiting membrane the pyogenic membrane (Tyagi and Singh, 2012; Sahoo and Ganguly, 2015). During pus formation, there occurs by a breach of surface of the skin or mucous membrane leading to the entrance of pyogenic microorganisms (Tyagi and Singh, 2012). Usually solitary pus containing external outgrowths are common in cattle and buffaloes (Thorat *et al.*, 2008).

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 hand pressing from the affected region of hernia of a cow exhibiting clinical symptoms presented to the Teaching Veterinary Clinical Complex (T.V.C.C.) of the college for clinical examination. The affected cattle was clinically examined there. The collected pus sample was then brought to the Department of Veterinary Microbiology during November, 2015 for bacteriological examination and reporting.

The pus sample was examined bacteriologically (Buxton and Fraser, 1977) by culturing on nutrient agar plate and salt agar plate (containing 8-10% NaCl) and by staining by Gram's Method followed by antibiotic sensitivity test by Kirby-Bauer antibiotic disc diffusion assay method on Mueller-Hinton agar with certain modifications (Sinha, 2006) using antibiotic discs provided by the supplier (Titan Biotech Ltd., Bhiwadi, Rajasthan, India). The concentration of antibiotic in each filter paper disc was as per the specification of the manufacturer required for laboratory purpose. Incubation of the petridishes layered with the agar containing antibiotic discs was done at 37°C for 24 h in a B.O.D. incubator installed at the department.

RESULTS AND DISCUSSION

The pus sample was subjected to spread plate culture on Nutrient agar media plates. After incubation at 37°C for 24 h it revealed the presence of circular, convex, glistening colonies with full regular edges. Gram's method of staining revealed Gram positive cocci shaped organisms arranged in the form of clusters or clumps when examined under the high power magnification of the compound microscope. The bacteria was bacteriologically determined to be grouped under *Staphylococcus* spp. (Cruickshank *et al.*, 1975; Buxton and Fraser, 1977; Finegold and Martin, 1982; Ananthanarayan and Paniker, 2009).

Antibiotic assay revealed the bacterial isolates to be highly sensitive to the antibiotics, Penicillin, Chloramphenicol and Ampicillin with low degree of sensitivity to Gentamicin. The degree of sensitivity was determined on the basis of zone of inhibition formed by

the isolated bacteria after exposure to the particular antibiotics.

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 Tiwari and Kashyap (2011) and Sahoo and Ganguly (2015).

CONCLUSION

The present study revealed the presence of *Staphylococcus* spp. of bacteria in the pus sample collected from the case of hernia of cow. The bacterial strain was found to be sensitive to broad spectrum antibiotics which was reported and recommended to the T.V.C.C. for their administration in divided doses on alternate daily intervals preferably in mixed preparations.

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