



Science

BACTERIOLOGICAL EXAMINATION OF PUS SAMPLE COLLECTED FROM A COW: A CASE STUDY

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DOI: <https://doi.org/10.29121/granthaalayah.v4.i12.2016.2389>



Abstract

The present article reports on the bacteriological examination and antibiotic sensitivity test of pus sample collected from an abscess at the neck region of a cow.

Keywords: Bacteriological examination; Pus; Antibiotic sensitivity.

Cite This Article: Subha Ganguly. (2016). “BACTERIOLOGICAL EXAMINATION OF PUS SAMPLE COLLECTED FROM A COW: A CASE STUDY.” *International Journal of Research - Granthaalayah*, 4(12), 31-33. <https://doi.org/10.29121/granthaalayah.v4.i12.2016.2389>.

1. 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 microorganisms.^[1] Usually solitary pus containing external outgrowths are common in cattle and buffaloes.^[3]

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 form the case of hernia.

2. Materials and Methods

The pus sample was collected by draining from an abscess formed at the neck region of an affected cow presented for clinical examination at the veterinary clinical check-up camp organized at Shyampura, Sikar, Rajasthan during December 2016. The collected pus sample was then brought to the Department of Veterinary Microbiology of Arawali Veterinary College, Sikar for bacteriological examination and reporting.

The pus sample was examined ^[4] 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 method ^[5] on Mueller-Hinton agar with certain modifications ^[6] 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.

3. Results and Discussion

The pus sample was subjected to spread plate culture on Nutrient agar media plates. Grams' method of staining with the isolated pure colony revealed Gram positive bacilli arranged in the form of chains when examined under the high power magnification of the compound microscope. To obtain pure bacterial colonies repeated subculturing was performed on Nutrient agar plates. It revealed the presence of flat, glistening colonies with irregular edges after incubation. The bacteria were determined to be grouped under *Bacillus* spp. ^[4,7-9]

Antibiotic disc diffusion assay revealed the bacterial isolates to be highly sensitive to the minimum inhibitory concentration (MIC) of the antibiotics namely, tetracycline (30 mcg), ceftazidime (30 mcg) and chloramphenicol (30 mcg) with moderate sensitivity to gentamicin (10 mcg) and amikacin (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 Ganguly ^[2], Ganguly *et al.* ^[6] and Tiwari and Kashyap ^[10].

4. Conclusion

The present study revealed the presence of *Bacillus* spp. of bacteria 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 T.V.C.C. for their administration in divided doses on alternate daily intervals preferably in mixed preparations.

Acknowledgement

The authors are thankful to Hon'ble Dean and Management (Hony. Chairman and Secretary, Aastha Society, Sikar) of Arawali Veterinary College, Sikar for providing the necessary facilities to carry out this research work.

References

- [1] Tyagi, R.P.S. and Singh, J. (2012). Ruminant Surgery. 11th ed. CBS Publishers and Distributors Pvt. Ltd. New Delhi, pp.167- 174.
- [2] Sahoo, S. and Ganguly, S. (2015). Surgical management of abscess in camel: A Case Report. World J. Biol. Medi. Sci. 2(4): 32-4.
- [3] Thorat, M.G., Bhikane, A.U., Yadav, G.U., Ghadage, H.R. and Mahajan, M.V. (2008). Clinical management of multiple abscesses in bullock. Intas Polivet. 9 (1): 79-80.

- [4] Buxton, A. and Fraser, G. (1977). *Animal Microbiology*. Vol. 1. Blackwell Scientific Publications.
- [5] Sinha, S.N. (2006). *Focus on College Practical Microbiology*. Part-I. Rita Book Agency, Kolkata, India.
- [6] Ganguly, S., Padhy, A., Sahoo, S., Wakchaure, R., Praveen, P.K., Para, P.A. and Garg, S.L. (2015) Microbiological examination of pus sample collected from a clinical case of hernia of a cow. *Indian J. Microbiol. Res.* 2(IV): 244-245. doi: 10.5958/2394-5478.2015.00023.0
- [7] Ananthanarayan, R. and Paniker, C.K. Jayaram. (2009). *Textbook of Microbiology*. 8thed. Universities Press (India) Pvt. Ltd. Hyderabad, India. ISBN 978 81 7371 674 4.
- [8] Cruickshank, R., Duguid, J.P., Marmion, B.P. and Swain, R.H.A. (1975). *Medical Microbiology*. 12th ed. Vol. II, Churchill Livingstone, London.
- [9] Finegold, S.M. and Martin, M.J. (1982). *Diagnostic Microbiology*. 6th edn. The C.V. Morsby Co., London.
- [10] Tiwari, S.K. and Kashyap, D.K. (2011). Chemo-Therapeutic management of foot abscess in female Asian elephant (*Elephas maximus*). *Zoo's Print.* 26 (12): 24.

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