

Case Study

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Isolation and Identification of *Klebsiella pneumoniae* from Sheep-Case Report

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ABSTRACT

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Klebsiella pneumoniae is a gram negative bacilli and it produce pneumonia in sheep. In present study isolation of *klebsiella pneumoniae* from sheep die due to pneumonia. *Klebsiella pneumoniae* produces large dome shape, mucoid colony on BHI agar and Lactose fermenting pink colony on Mac conkey agar. It conform by biochemical test like indole negative, MR negative, VP positive, Citrate positive, Oxidase negative and catalase positive. In Antibiotic Sensitivity Test higher susceptible drug was Chloramphenicol against *Klebsiella pneumoniae*.

Introduction

Klebsiella pneumoniae is a gram negative, non-motile, encapsulated, lactose fermenting, facultative anaerobe, catalase positive, oxidase negative belonging to the Enterobacteriaceae family (Elmer *et al.*, 2006; Hind, *et al.*, 2016). It is the most common causative agent of nosocomial and community acquired infections. It is also responsible for pneumonia, mastitis, endometritis and urinary tract infection.

Case history

A 4 years old patanwadi sheep of Gujarat sheep and wool development corporation

(GSWDC), Aseda was died having history of difficult respiration and nasal discharge. Open the carcass and examine various organ. Observed pneumonia and other organ like liver, kidney, spleen, intestine, trachea, and heart are normal.

Materials and Methods

Aseptically collect the samples from different organ and culture on MacConkey agar and BHI (Brain heart infusion agar) plates and incubated overnight at 37°C. After 24 hr isolate colony was identified by Gram's staining, colony character and biochemical

tests like indole, MR, VP, citrate, urease, catalase and oxidase. Antimicrobial susceptibility test for isolated colony by Kirby-Bauer disc diffusion method according to the CLSI guidelines 2012 (CLSI, 2012) was carried out.

Results and Discussion

Characterization of bacterial isolates

Only lung sample produce large dome shaped colonies on BHI plate (Fig. 1) and lactose fermenting mucoid dome shaped colonies on MacConkey agar plate (Fig. 2). In gram staining, gram negative, short, plump, straight rods were seen (Fig. 3). The biochemical test characters identified were Indole negative (-ve), Methyl red negative (-ve), Voges-

Proskauer test positive (+ve), citrate utilization test positive (+ve) (Fig. 4), urease test positive, catalase positive and oxidase test negative.

Antimicrobial susceptibility testing

In antibiotic sensitivity test higher susceptible drug was chloramphenicol followed by gentamycin, enrofloxacin, ceftazidime+salbactam, while resistant drugs are oxytetracyclin, ampicillin +salbactam, sulfa + trimethoprim, and amoxicillin + clavulanic acid (Fig. 5).

In conclusion on the basis of history, post-mortem lesion and laboratory examination it was concluded sheep was die due to *Klebsiella pneumoniae* infection.

Fig.1 Mucoid dome shape colony on BHI agar

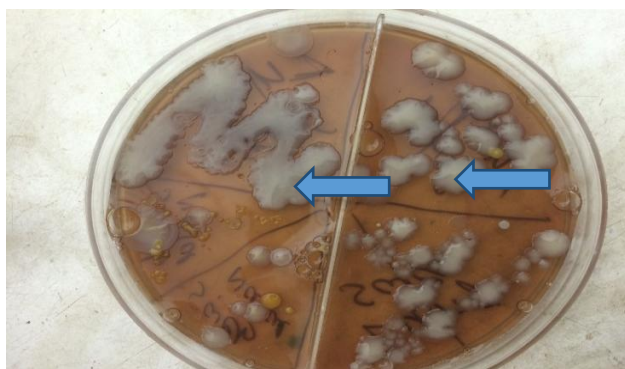


Fig.2 Lactose fermenting pink, dome shape colony on MacConkey agar

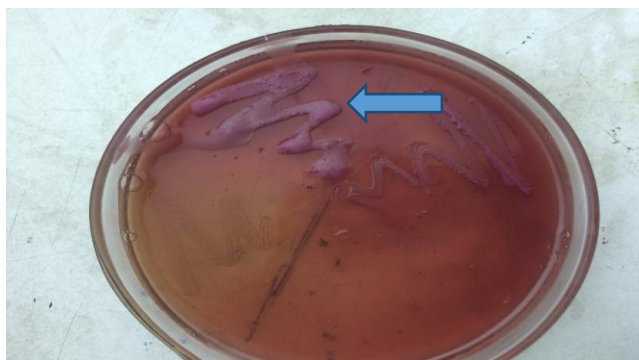


Fig.3 Gram's staining- Gram negative bacilli

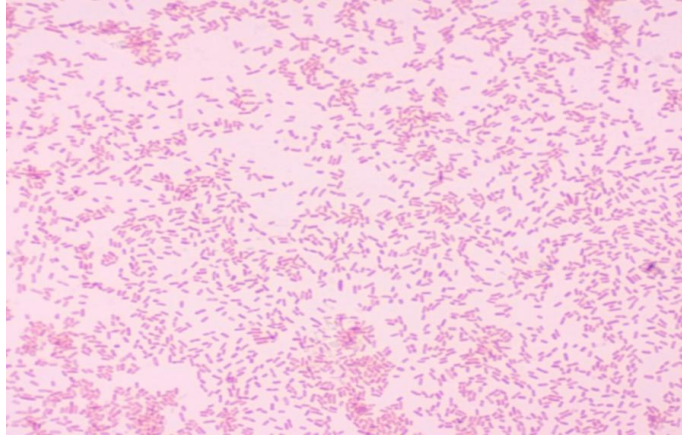
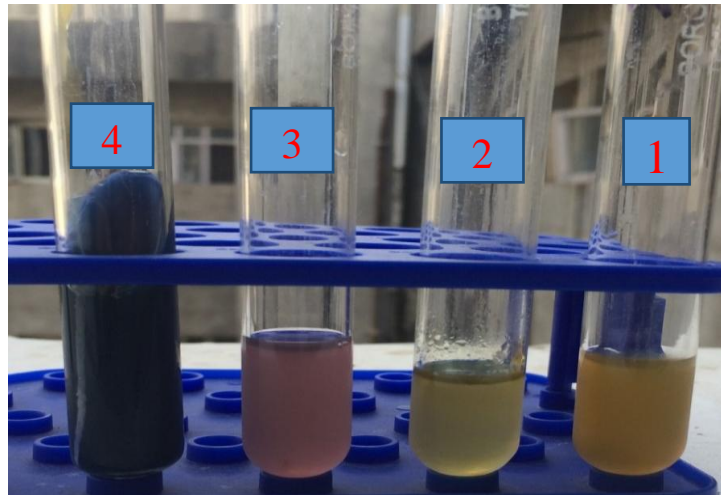
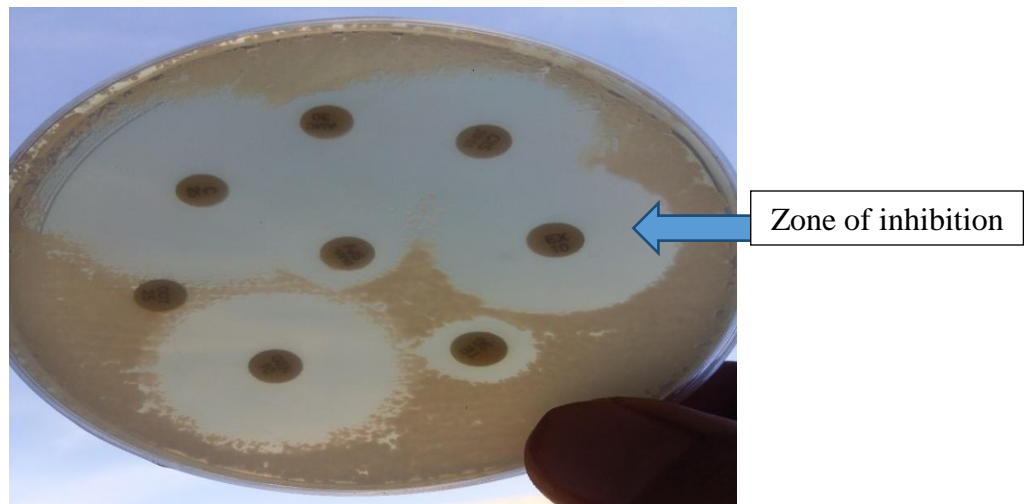


Fig.4 IMViC test



1. Indole-Negative 2. M.R-Negative 3. V.P-Positive 4. Citrate-Positive

Fig.5 Antibiotic sensitivity test



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