A. Ü. Vet. Fak. Derg.
33 (2): 193-197, 1986

PNEUMONIA IN A CAT CAUSED BY PASTEURELLA MULTOCIDA

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Bir kedide Pasteurella multocida pnömoni'si

Özet: *Bu çalışmada, pnömoni sonu ölen bir kedinin akciğerlerinin bakteriyolojik yoklaması yapılmış ve izole edilen etkenin biyokimyasal testler ve hayvan deneyi ile identifikasyonu gerçekleştirilmiştir. Mikroorganizmanın Gram negatif, hareketsiz, non-hemolitik, laktoz, sorbitol, mannit, H_2S ve üre negatif, indol pozitif ve MacConkey agarda üremediği tespit edilmiştir. Hayvan deneyi için, izole edilen mikroorganizmanın bir gecelik buyyon kültüründen* 0.1 *ml* 4 *adet beyaz fareye ip yolla verilmiş ve hayvanların* 14 *saat içinde öldükleri belirlenmiştir. Ölen hayvanların kalp kanı ve organlarından yapılan ekim sonu hepsinden Pasteurella multocida saf olarak izole edilmiştir.*

Summary: *In this study, the lungs of a cat died due to pneumoniae were examined bacteriologically and isolated microorganism was identified by biochemically and pathogenicity test. The microorganism was a Gram negative, non-motile and non-haemolytic. No growth appeared on MacConkey agar. Lactose, sorbitol and mannitol were not fermented until* 20 *days. Indol was produced, but not H_2S and urea. In pathogenicity test, four mice were infected intraperitoneally with microorganism in dose of* 0.1 *ml of overnight broth culture of Pasteurella multocida and all died within* 14 *hours. Pure culture of Pasteurella multocida was obtained from the organs and heart blood of dead animals.*

On the basis of cultural, biochemical and morphological characteristics and pathogenicity test, the microorganism identified as Pasteurella multocida.

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Introduction

Pasteurella multocida causes infections characterized by haemorrhagic septicaemia in various animals (3, 22, 23). Pasteurella multocida can also be found in the mouth and respiratory tract of cats as a commensal member of microflora (1, 9, 11, 19). But, it was also isolated from pneumonia cases in cats (5, 10, 14, 16, 18, 20).

Allin (1), has reported the isolation *of Pasteurella multocida* both from cat's lung and brochi, and from man with scratch wound made by the same cat. Smith (20), has elucidated the isolation of 20 strains of *Pasteurella multocida* from clinically healthy cat's mouths and 10 *Pasteurella multocida* from cats suffered with sepsis, pleurisy, enteritis and gingivitis. He has also shown that out of 30 strains, 10 were pathogenic for mice, 6 were lactose negative, 17 strains fermented sorbitol and 24 were mannitol positive. Calaprica (7), has announced to have isolated *Pasteurella multocida* from brains of cats showed nervous signs. Solty (21), has showed that *Pasteurella multocida* from the mouths of clinically healthy cats was not pathogenic for mice, although the isolates from wound and abcesses were pathogenic. Love et all (15), have reported the isolation of *Pasteurella multocida* from 19 cats with pyothorax. Art (5), has also announced to have isolated *Pasteurella multocida* from cat's mouth and shown that 76.5 % of all isolates were pathogenic for mice.

The aim of this study is to isolate and characterize and also to determine the sensitiviness to various antibiotics of the agent caused

Materials and Methods

In this study, the lungs of one year old cat were used as material. Inoculums from various part of lungs were prepared and inoculated onto blood agar enriched with yeast extract and glucose, trypticase soy agar, MacConkey agar. Other media such as semisolid agar, urea agar, sugar fermentation media, etc. for identification were also used.

For the pathogenicity test, 0.1 ml of pure culture of organism was inoculated ip into 4 mice.

Several antibiotic discs obtained from local sources were used to determine the sensitiveness of the agent.

Results

The slide preparations prepared from lesions in lungs and stained with Giemsa showed several bipolar microorganisms on microscopic field. On blood agar, grey colored, small, S– types colonies and non–haemolytic colonies appeared after 24–48 hours incubation at 37° C. In Gram stain, they were cocoid and Gram negative. The agent was non–motile, lactose, sorbitol, mannitol and urea tests were negative, but hydrogene sulfide and indol tests were positive.

The microorganism caused septicaemiae in all mice and they all died within 14 hours. In autopsy, enlargement and congestion of liver and spleen were observed. In the inoculation from heart blood and liver onto blood agar plates, the microorganism was isolated as pure culture.

According to the results obtained from antibiotic sensitivity test, the agent was sensitive to penicillin, tetracycline, oxytetracycline, chloramphenicol, chlortetracycline and erythromycin but it was resistent to ampicillin, geopen, meomycin, streptomycin, nitrofurantion, rifamycin, colistin sulphate and bactrim.

On the basis of morphologic, cultural, biochemical and pathogenicity test, isolated microorganism was diagnosed as *Pasteurella multocida.*

Discussion and Conclusion

As it was known that Pasteurellosis is a widespread disease in countries where the control measures are not adequate. It was reported that the infection is much prevalent among herbivores and rodents as well as cat, panthers and lions (3, 6, 17, 23).

Pasteurella multocida can be encountered both in the mouth and respiratory tract of healthy cats as a commensal organism (5, 9) and in pneumonie lungs of animals as a pathogenic agents (5, 8, 10, 16, 18, 19).

The agent isolated from the lungs of cat, was similar to the microorganisms described by others (6, 8, 10, 12, 14, 15) in various point of characters.

The results obtained in this study, showed that *P. multocida* was the causative agent of pneumonia in cat.

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