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MYCO AND MICROFLORA OF THE NASAL CAVITY OF APPARENTLY HEALTHY CAMELS
(With 3 Tables)

By
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الفحص البكتريولوجي واللثري لمسحات الأنف في الجمال الليمة اكليمنيكا
توال غبرهلال، ليلي سلاي الدين، سهام علي، عادل حمي، محمد ناشد، أحمد عامر

فحص عدد 60 مسحة أنف من جمال ملية اكليمنيكا وتم عزل 11 بكتيرية وثمانية عوامل فطرية
وقد نوقشت النتائج في ضوء تأثير هذه العوامل على امكانيات اصابه الجمال بالالتهابات التنفسية.

SUMMARY

A total of 60 nasal swabs of apparently healthy camels were collected for bacteriological and mycological studies.

The results revealed the isolation of 11 pathogenic and Potentially pathogenic bacterial isolates as follows:
Staph. albus, Diplococcus pneumoniae, Entero bacter, Klebsiella aerogenes
E.Coli, Serratia-marcesens, Providencia sp., Citrobacter, Strept. pyogens,
Corynebacteria sp. and Micrococcus sp.

The mycological examination revealed the isolation of 8 species of fungi, as follows: Asp. niger, Asp. flavus, Asp. nodulans, Asp. Fumigatus
Penicillium sp., Dematacia sp., Candida albicans and Thinoscleromitis.

INTRODUCTION

Camel is a very important animal in Egypt and other Countries in Africa and Asia. It has a great economical values among our farm animals, where in Egypt, camel

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meat constitutes an important source of animal protein, as well as, the wool production constitutes an important product of camels. Working in Agriculture field or emigration between the villages is the main function for these animals for most Egyptian farmer.

The establishment of the respiratory tract infection in camels were the aim of many workers. Many pathogenic and Potentially pathogenic bacteria were recovered from the apparently healthy animals.

MERCHANT and PCKER (1957) and CRUICKSHANK (1962) mentioned that Klebsiella species affects animals as well as, humanbeing. Most members of Genus Klebsiella in the opinion of that author are commensal in respiratory tract.

ARORA and KALRA (1973) isolated Klebsiella Pneumonia from cases of broncho-pneumonia in camels.

SHIGIDI (1973) isolated and identified from nasal swabs, Lungs and bronchial lymph nodes of 64 apparently healthy camels bacilli in 26.2% diphtheroides 15.9%, Corynbacterium Pyogenes 5.4% Alphahalomytic streptococci 5.1%, E.Coli 1% and Enterobacteriaerogenes 0.5%.

ABULE-SOUD (1974); BAILY and SCOTT (1974); WOLF, et al. (1975); EL-ALLAWY, et al. (1977); GHAWI (1978); CARTER (1979); REEM, et al. (1984); and ZAITOUN (1986) could isolate different strains of bacteria and fungus from the Upper and Lower respiratory tract of camels and another species of animals.

This work was carried out to estimate the possible bacterial and fungal flora that could inhabit the nostrils of apparently healthy camels under Assiut circumstances, furthermore the inter relationship between these isolated microorganisms was also evaluated.

MATERIAL and METHODS

A sum of 60 sterile nasal swabs were collected from 60 apparently healthy camels for both bacteriological and Mycological examination.

For bacteriological examination:

The swabs were carried on nutrient broth and kept in the incubator for 24 hr. at 37°C. The broth cultures were used for further bacteriological investigation by incubation in nutrient agar, blood agar and MacConkeys agar media. The inoculated plates were incubated at 37°C for 24-48 hr.

MYCO AND MICROFLORA OF CAMELS

For mycological examinations

The obtained swabs were directly streaked on Sabouraud's dextrose agar medium containing penicillin, Streptomycin and Chloramphenicol.

Inoculated plates were incubated for 48 hr. at 37°C, then left at room temperature for another week.

The obtained bacterial and fungi isolates were identified according to BAILY and SCOTT (1974); CRUICKSHANK, et al. (1975) and MERCHANT and PACKER (1967) and COLES (1986).

RESULTS

A total of 11 bacterial isolates and 8 Species of Fungi were recovered from examined camels (Table I).

From table (II) it is clearly evident that from II cases different bacterial isolates were identified. Staph-albus and Serratia marcesens were the most prevalent bacteria (Six cases). While from three cases, Klebsiella aerogenes and providencia sp. were identified, Diplococcus Pneumonia, E.Coli Coryne-pyogenes micrococcus, enterobacter, Citrobacter and Strepto. Pyogens, were additional bacterial flora that could be isolated from examined cases.

Nasal mycoflora could not be isolated separately but in conjunction with bacterial flora (Table III).

A sum of 8 different species of Mycoflora were identified from 49 mixed cases. Penicillium spp. and Asp. niger were the most common fungal isolates (each of them was identified in (11 cases), followed by Asp. Flavous (8 cases), Asp. nodulans (7 cases). Candida albicans (6 cases), Dematacia sp. (3 cases). While Asp. Fumigatus and Tinoscleromitis were isolated from three mixed cases.

DISCUSSION

From the present results it is clearly evident the several types of both Pathogenic and Potentially pathogenic micro and mycoflora were isolated from nasal swabs of apparently healthy camels.

The present results were coincide with those of AROA and KLARA (1973) isolated Klebsiella sp. and diplococci sp. from cases of bronchopneumonia in camels. BAILY

and SCOTT (1974) mentioned that Klebsiella and Pseudomonas were found in the Upper and lower respiratory tract of various species of animals. SHIGIDI (1973) isolated several microorganisms from nasal swabs, Lung bronchial lymph nodes of apparently healthy camels.

These microorganisms included diphtheroid 15.9% Corynebacterium pyogens 5.4% Alpha haemolytic streptococcus 5.1% E.Coli. 1% and Enterobacter aerogenes 0.5% WOLF, et al. (1975) mentioned that E.Coli. Klebsiella, Proteus sp., Pseudomonas aero-
genos and Coagulase positive Staphylococi were the pathogenic microorganisms frequently encountered in Upper respiratory tract. Similar results were also recorded by GHAWI (1978) who isolated Staph. aureus and Klebsiella sp. from Pneumonic camels lung.

The present results are more or less agree with that reported by REEM, 1984 who isolated Staph aureus 64.5%, Strept. Pyogen 9.7%, faecalis 51.6%, Strept. pyogen 9.7%, Phemococci 23.8%, E.Coli 45.2%, Klebsiella 3.2% and Serratia marcesens 12.5% from the of apparently healthy camels.

It was clear that the respiratory tract of apparently normal animals acts a reservoir for many species of microorganisms.

These microorganism reached the nasal cavity and subsequently the respiratory system either through inhalation or during drinking polluted water. Stress factors such as changes in the hygienic, environmental and climatic conditions play a role in the onset of pneumonia (BUXTON and FRASER, 1977). Such factors would lower the resistance of the lung tissue and the existing organism most probable would get the Upper hand.

From the epizootological and epidemiological and potentially pathogenic fungi recovered from the nasal cavity of apparently healthy camels were Asp. niger, Asp. flavus. Asp. nodulans, Asp. Fumigalis, Penicillium sp., Dematacia sp., Candida albicanis and Thinoscleromitis. These results were in agreement with many authors SHIGIDI 1973; MAZEN, et al. 1984 and ZAITOUN (1986). All of them could isolated various species of aspeergillus and Pencillium sp. from different species of farm animals.

From table (III) it is clearly evident that the most of isolated fungi were correlated with more than one type of isolated bacteria. These results coincided with those of MOUBASHER and MOUSTAFA (1974); EDWARDS and EL-ZUBAIDY (1977) and ZAITOUN (1986) who mentioned that mycological infection may be concomitant with other infection e.g. bacteria, Viral and Parasites.

Lastly the present study cleared out the possible pathogenic and potentially pathogenic micro and mycoflora of the nasal cavity of apparently healthy camels.
REFERENCES


Table (I): Type of bacterial flora and Mycoflora isolated from nasal cavity of 60 apparently healthy camels.

<table>
<thead>
<tr>
<th>Isolated bacteria</th>
<th>Isolated fungi</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Staph. albus</strong></td>
<td>Asp. niger</td>
</tr>
<tr>
<td><strong>Diplococcus pneumonia</strong></td>
<td>Asp. flavus</td>
</tr>
<tr>
<td><strong>Entero bacter</strong></td>
<td>Asp. nodulans</td>
</tr>
<tr>
<td><strong>Klebsiella aerogenes</strong></td>
<td>Asp. fumigalus</td>
</tr>
<tr>
<td><strong>E. Coli</strong></td>
<td>Penicillium spp.</td>
</tr>
<tr>
<td><strong>Serratia marcesens</strong></td>
<td>Dematacia spp.</td>
</tr>
<tr>
<td><strong>Providencia</strong></td>
<td>Candida albicconig</td>
</tr>
<tr>
<td><strong>Citrobacter</strong></td>
<td>Thinoscleromitidis</td>
</tr>
<tr>
<td><strong>Strepto pyogens</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Corynebacterium sp.</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Micrococcus sp.</strong></td>
<td></td>
</tr>
</tbody>
</table>

Table (II): Types of bacteria isolated separately from nasal cavity of apparently healthy camels.

<table>
<thead>
<tr>
<th>Microorganisms</th>
<th>No. infected animals</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Diplococcus Pneumonia-Staphalbas</strong></td>
<td>2</td>
</tr>
<tr>
<td><strong>Klebsiella aerogenes-Provioleucia sp.</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>Staph. albus-Serratimarcesens.</strong></td>
<td>6</td>
</tr>
</tbody>
</table>

Table (III): Types and numbers of bacteria and fungus isolated from nasal cavity of apparently healthy camels.

<table>
<thead>
<tr>
<th>Isolated bacteria</th>
<th>Isolated fungi</th>
<th>No. of Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staph albus + Klebsilla aerogenose</td>
<td>Penicillium spp.</td>
<td>5</td>
</tr>
<tr>
<td>Diplococcus pneumonia + staph. albus</td>
<td>Asp. nodulans</td>
<td>7</td>
</tr>
<tr>
<td>Klebs-aerogenose + Staph.albus E.Coli</td>
<td>Asp. niger</td>
<td>3</td>
</tr>
<tr>
<td>Staph. albus + Citrobacter + E.Coli</td>
<td>Candida albicconig</td>
<td>4</td>
</tr>
<tr>
<td>Micrococcus + enterobacter</td>
<td>Asp. flavus</td>
<td>3</td>
</tr>
<tr>
<td>Serratii. marcesens</td>
<td>Asp. flavus</td>
<td>5</td>
</tr>
<tr>
<td>Staph.albus + serrati marc.+ E..Coli</td>
<td>Penicillium spp.</td>
<td>6</td>
</tr>
</tbody>
</table>