كمسامح: طب الحيوان وأمراض الدواجن - كلية الطب البيطري - جامعة أسوان.
رئيس القسم: أ.د/ إبراهيم محمد حسن سكر.

إصابة الرومي بالميكولازا طبيعية في ميدان مصر.

العديد من العدوى محذوف الرفاغ، مصطفى الحافظ، حسن الدرباس، عادل صميان.
تم تحلل الميكولازا طبيعية من عينات الجلود العليا والقصبة الهيكلية للطريق الهجائي بنسبة 8.1% و0.2% على التوالي.

- تخفض العينات المأخوذة من الطيور الفائقة وضعف أن الميكولازا يوجد بنسبة عالية في عينات الأجسام الهيكلة.
- يتم تحلل بعض من البيض الاليغ والجثة الميتة.
- القفص السيرولوجي لمبادرات الحمل وصغار البيض والسوائل الجنينية أظهرت وجود أجسام مناعية لميكولازا طبيعية في ميدان مصر، أمكن الكشف عنها باستخدام كامل من الاختبار المطبق للنمو واختيار الشلالات السريع.

* قسم: الميكولازا - مهندس بحوث صحة الحيوان - الجيزة.
رئيس القسم: أ.د/ عبد المنعم بركات.
MYCOPLASMA MELEGARIDIS INFECTION OF TURKEYS IN UPPER EGYPT
(With 2 Tables)

By
A.A EL-EBEEDY,* EL-REFAIE W. REFAIE, A.A. IBRAHIM, M. EL-DIEMRDASH
and A.M. SOLIMAN
(Received at 1/4/1983)

SUMMARY

Mycoplasma meleagridis was isolated from samples of tracheal and sinuses swabs.

Examination of specimens collected from dead birds revealed that high percent of M. meleagridis was recovered from air-sacs.

The organism was also isolated from infertile - eggs and dead turkey - embryos.

Serological examinations of serum, egg-yolk and embryonic-fluids showed that antibodies of M. meleagridis were detected by both Growth-Inhibition and slide - Agglutination tests.

INTRODUCTION

Diagnosis of Mycoplasmosis of turkeys could be based on clinical and pathological examinations combined with detection of organism as well as serological studies on sera and egg - yolk of affected birds.

Mycoplasma meleagridis is the most important mycoplasma species of turkeys that was isolated for the first time from day-old-poults suffering from air-sacculitis by ADLER, et al. (1938). PROKOFIEVA, et al. (1963) described the method of preparation of ppLO antigen that is used in serum-plate-agglutination test, which was specific. YAMAMOTO and ORTMAYER (1967) recovered M. meleagridis from various organs of day-old poults and dead-embryos.

Beside the serological examination of sera, DEVOS, et al. (1968) used the egg-yolk agglutination test and compared it with the rapid serum-agglutination test. They also found that both tests gave identical results. The causative organism was recovered from the oviduct, vagina of adult females and phalus, semen of males by BALKIN (1979).

The problem was studied in Egypt by EL-EBEEDY (1973) who isolated M. meleagridis, from dead-in-shell embryos, day-old, 2 - 3 weeks-old poults and oviduct of laying turkey-hens as well as from cloaca of male turkeys and lower part of intestine. As high losses in turkeys were attributed by many investigators to M. meleagridis infections, so the present work was planned to cover the following items:

- Isolation, identification of M. meleagridis from living, dead-turkeys, infertile-eggs and dead-embryos.
- Detection of antibodies of M. meleagridis from egg-yolk, embryonic fluids sera of turkeys in the area of Upper Egypt, (Assiut and El Wadi El Gidid) where such study was not done before.

MATERIAL and METHODS

133 tracheal swabs and 56 sinus swabs were collected on Vained - Foie - broth, from turkeys of two-months up to more than one-year-old. Also 169 dead turkeys of different ages were subjected to P.M. examinations, samples from trachea, lungs and air-sacs were used for trials of isolation. In addition 57 infertile-eggs collected from incubators, and 160 dead-in-shell embryos of different ages were examined for detection of M. meleagridis (Assiut and El-Wadi El-Gidid provinces).

Isolation and identification of M. meleagridis:

Samples were inoculated on V.F. broth and agar incubated for 3-days at 37°C in moist candle jar with low oxygen.

* Animal Health research institute, Dept. of Mycoplasma, Dokki.

tension. For recovery of M. meleagridis colonies, the culturing technique described by SABRY (1968) was carried out. The suspected colonies were subjected to further identification biochemically "SABRY (1968), ERNO & STIPKOVITIS (1973)" and serologically "CLYDE (1964) and KROGSGARRD - JENSEN (1972)".

Detection of M. meleagridis antibodies in serum samples:

480 serum samples collected from different ages of turkeys were subjected to slide agglutination - test and Growth - Inhibition - test, recommended by ADLER & YAMAMOTO (1956) and CLYDE (1964) respectively.

The antigens used in this study were obtained from Wellcome Foundation Ltd. Langley Court, Beckenham, Kent, England.

Detection of M. meleagridis antibodies in egg-yolk and embryonic - fluids:

57 yolk samples collected from fresh eggs and 160 samples of embryonic - fluids were examined for detection of M. meleagridis antibodies after BENJAMIN & HITCHNER (1978).

RESULTS

The examined living birds showed decrease of body gain, swelling of intra-orbital sinuses, nasal discharges and lacrimation. Some cases revealed hard breathing, rales and abnormal sounds especially among those of young ages. The most common P.M. lesions observed on dead birds were tracheitis, pneumonia and air - sacculitis especially in poult, while the old birds showed sinusitis, tracheitis, pneumonia, air - sacculitis and fibrinous perihepatitis, pericarditis and salpingitis.

Results of M. meleagridis recovery from living, dead-turkeys, infertile - eggs and dead-embryos were illustrated in Tables I, and II while those of antibodies detection from sera, egg - yolk and embryonic - fluids were tabulated in Tables III and IV respectively.

<table>
<thead>
<tr>
<th>Table (I): M. meleagridis recovery from living and dead turkeys</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specimens</td>
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<tr>
<td>--------------------</td>
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<tr>
<td></td>
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<tr>
<td>Tracheal swabs.</td>
</tr>
<tr>
<td>Sinuses swabs.</td>
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<tr>
<td>Sinus exudate</td>
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<tr>
<td>Trachea</td>
</tr>
<tr>
<td>Lungs</td>
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<td>Air - sacs</td>
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</table>

<table>
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<tr>
<th>Table (II): M. meleagridis isolation from infertile-eggs and dead-embryos</th>
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<tbody>
<tr>
<td>Specimens</td>
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<tr>
<td>--------------------------------</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Infertile - eggs</td>
</tr>
<tr>
<td>Yolk of dead-embryos *</td>
</tr>
<tr>
<td>Trachea, lungs, Air-sacs of dead-embryos</td>
</tr>
</tbody>
</table>

* The remainder 45 yolk samples were unfit for isolation trials.
MYCOPLASMA OF TURKEYS

Table (III): M. meleagridis antibodies detected in turkey-sera

<table>
<thead>
<tr>
<th>Age of examined turkeys</th>
<th>No. of samples</th>
<th>Positive cases S.A.T.</th>
<th>G.I.T.*</th>
</tr>
</thead>
<tbody>
<tr>
<td>One-two months</td>
<td>230</td>
<td>12</td>
<td>23</td>
</tr>
<tr>
<td>Four-six months</td>
<td>160</td>
<td>3</td>
<td>16</td>
</tr>
<tr>
<td>More than one year</td>
<td>90</td>
<td>8</td>
<td>9</td>
</tr>
</tbody>
</table>

* S.A.T. Slide agglutination test.

Table (IV): Serological examination of egg-yolk and embryonic-fluids

<table>
<thead>
<tr>
<th>Specimens</th>
<th>No. of samples</th>
<th>Positive cases to S.A.T. No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Egg-yolk</td>
<td>57</td>
<td>18</td>
<td>31.6</td>
</tr>
<tr>
<td>Embryonic fluids</td>
<td>160</td>
<td>21</td>
<td>13.1</td>
</tr>
</tbody>
</table>

DISCUSSION

Mycoplasmosis of turkeys constitute an important economic problem causing high losses all over the world. The clinical signs and P.M. picture described by the authors in the present study were closely similar to those of FREY, et al. (1968) and YAMAMOTO (1978), who found that air-sacculitis was the prominent feature of M. meleagridis infections of turkeys.

Examination of living birds indicated that a relatively high percentage (3.9) of M. meleagridis was isolated from tracheal swabs in comparison with sinuses swabs (1.8%1.1). Specimens from dead turkeys subjected to trials for isolation of M. meleagridis revealed that the highest incidence (8.2%1.1) was recovered from air-sacs, followed by trachea, lungs and sinus-exudate in decreasing manner "7.1, 2.6 and 1.7%1.1," respectively. This result agreed with those of FREY, et al. (1968) and YAMAMOTO (1978) who concluded that air-sacculitis was associated with M. meleagridis infections of turkeys. The recovery of M. meleagridis from infertile-eggs and dead-embryos suggested that the causative organism is transmitted through eggs. The same results were also recorded by YAMAMOTO, et al. (1966).

Serological examination of serum samples collected from turkeys of different ages revealed that the Growth-inhibition test was more reliable and sensitive in detecting M. meleagridis antibodies. Our results were similar with the work of OGRA & BOHL (1970) and EL-EBEEDY (1973). Detection of antibodies in egg-yolk and embryonic-fluids indicated that high level of positive cases were recorded, especially among egg yolks samples (31.6%1.1), this may be attributed to high titres of maternal antibodies secreted through eggs. Some of the similar findings were recorded by DEVOS, et al. (1968) who found that both egg-yolk-agglutination test and rapid-serum-agglutination-test gave identical results.

The present study proved that M. meleagridis is widely spread in the area of Upper - Egypt and both Growth inhibition test of serum samples and egg-yolk-agglutination-test of fresh eggs are dependable means for detection of M. meleagridis antibodies.

REFERENCES


