معهد بحوث صحة الحيوان - الدقى - الجيزة.
رئيس القسم : أ.د. سعد عبد الغفار.

محاولات إحداث عدوى صناعية للدجاج بفيروس مرض الميوكلسي المعزول من الدماغ،
وكذللك إحداث عدوى صناعية للميام بفيروس مرض الميوكلسي المعزول من الدماغ.

محمد الصبان ، شريف نديم ، نرجس برهوة ، أحمد بصيري ، أحمد سامي ، أحمد أبو زيد.

1- نبت من تجربة سابقة أن الدماغ يتأثر بالعدوى بفيروس الميوكلسي الطيور العشري الضاري عند ما تعتد العدوى بطرق مختلفة.

وتظهر أمراض صحية على الدماغ وكاست العلامات التشريحية الظاهرة هي التهاب نسيج الأحشاء الداخلي بخليفة فقط.

2- نتائج هذا البحث أظهرت أن الدماغ الصاب بالعدوى الصناعية قد نقل العدوى اللكاتبية القلابية للعدوى، وأن الكتاتكيت الصاب بالعدوى الصناعية قد نقلت العدوى للميام النابل للعدوى.

3- وذكر هذا البحث أن الدماغ من أحشى المصادر الطبيعية لنقل عدوى الميوكلسي العشري الضاري للطيور الصناعية.
TRIAL OF TRANSMISSION OF VELOGENIC VISEROTROPIC NEWCASTLE VIRUS FROM INFECTED DOVES "STREPTOPLIA SENEGALENSIS AEGYPTIACUS" TO SUSCEPTIBLE CHICKENS 
AND FROM INFECTED CHICKENS TO SUSCEPTIBLE DOVES 

(With One Table)

By

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SUMMARY

1. In a previous experiment it was proved that doves responded to the VVNDV given by 
different routes with nervous symptoms and congestion of the internal organs.
2. This experiment showed that infected doves transmitted the VVNDV to susceptible 
chickens and that infected chickens transmitted the disease to susceptible doves.
3. So doves acted as good transmitters of VVNDV to domesticated chickens.

INTRODUCTION

In a previous experiment, experimental infection of the Egyptian doves with the VVNDV using different routes showed that these birds responded to the virus and showed nervous symptoms and died with congestion of the internal organs.

There are different opinions about the susceptibility of doves and their role in the transmission of Newcastle disease virus to domesticated chicks. MAGID et al. (1963) reported that the Nile sparrow "Passer domesticus riboticus" and the Egyptian dove (Streptopelia senegalensis aegyptiacus) resisted infection when N.D.V. was administered orally. The feces were free from the virus and that doves and sparrows placed in contact with ND infected chickens failed to contract the disease. Although ND of pigeons and doves had been reported by several workers (PICARD, 1928; VRTIÄ, 1958; MARSTONI and SIDOLI, 1959; ULBRICH AND SODAN, 1956). On the other hand other observers had noted a lack of apparent infection of pigeons and doves subjected to probable natural exposure (CRAMFORD, 1931; BIANCHI, 1941; ORR AND JOHN, 1946; ADLER et al., 1951). More workers reported that pigeons and doves are usually resistant to overt disease by experimental, oral or contact exposure (KEE, 1928; ADLER et al., 1951; and SANTUCCI, 1956; RACZYNSKI, 1960 a).

In the following experiment a trial was made to find out the role played by the Egyptian doves in the transmission of the VVNDV to chickens.

MATERIALS AND METHODS

Birds:

10 doves were purchased from the local market that were in good condition. One day old chicks were taken from the poultry company, were coming from vaccinated parents and were kept in an isolated place for 6 weeks to get rid of the prenatal immunity.

The Virus:

The virus used in the experiment is the velogenic viserotropic Newcastle disease virus locally isolated and characterized and proved to be the VVNDV. It was lyophized and titrated in chick embryos and gave a titer of $10^{-8.25}$.

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Experimental:

All birds were kept under observation for 3 days and blood samples and fecal swabs were taken from all birds before inoculation and all gave 1:10 HI titer and negative for the trail of isolation of the virus proving that all the birds used in the experiment were fully susceptible.

Experimental:

The birds were divided into two groups, each constituted 5 doves and 5 chicks. Each group was kept in a separate cage. They were given the VVNDV as follows:

Group 1:

The five doves were each given one million infective doses of the virus per os and the chickens were left uninoculated as susceptible contacts.

Group 2:

The five chickens were each given one million infective doses of the virus per os and the doves were left uninoculated as susceptible contacts.

Fecal swabs were taken from all the birds every day during the experiment. Blood samples were collected from all birds every 10 days.

RESULTS

As shown in Table 1, in the first group all the 5 inoculated doves showed nervous symptoms and died between the 6th to the 28th day of inoculation and the lesions were congestion of the internal organs. All the 5 inoculated doves shed the virus from the intestine on the first till the 4th day, the HI titer of blood reached 1:40 on the 20th day of inoculation and the virus was recovered from the internal organs of all the dead doves. In the same group the contact susceptible chickens contracted the disease from the inoculated doves, as they showed typical symptoms and lesions and shed the virus from the 2nd to the 3rd day and virus was recovered from the internal organs of all dead chickens. All the inoculated chickens of the second group showed typical symptoms and lesions, shed the virus and virus was recovered from the internal organs of all dead chicks. The susceptible contact doves contracted the disease from the inoculated chicks, showed nervous symptoms, congestion of internal organs and died from the 11th to the 24th day of being in contact. The virus was recovered from the internal organs of all dead doves and HI titer reached 1:40 to the 20th day of contact.

DISCUSSION

The results of the previous experiment on the susceptibility of the Egyptian doves "Senegalensis aegyptiaacus" showed that these birds responded to the velogenic viscerotrophic Newcastle disease virus when given by different routes. They showed nervous symptoms and congestion of the internal organs. In this experiment when susceptible chickens were kept in contact with inoculated doves they contracted the disease and when susceptible doves were kept in contact with inoculated chicks they contracted the disease. So doves here acted as good transmitters of the VVNDV. These results were different from those obtained by MAGID (1965) who reported that Egyptian doves resis- ted infection when N.D.V. was administered orally and that doves placed in contact with ND infected chickens failed to contract the disease. Probably the difference in results might be attributed to the type of virus used and the dose given. Although some workers supported the infection of doves with Newcastle disease (VRITIAK, 1958; MARASTONI, 1950; ULBIRCH, 1965; CRAWFORD, 1931) other workers had noted a lack of apparent infection of pigeons and doves subjected to probable natural exposure (Bianchi, 1941; ORR, 1946; ADLER, 1951 and KEK, 1928).

REFERENCES


TRANSMISSION OF NEWCASTLE VIRUS


**TABLE (1)**

**Trial of Transmission of VVNDV from Doves to Chickens and from Chickens to Doves.**

<table>
<thead>
<tr>
<th>Type of Birds</th>
<th>Results</th>
<th>Incub. Per</th>
<th>Sympt. and P.M. Lesi</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 Inoculation</td>
<td>Died with nervous symptoms</td>
<td>6 - 20 D.</td>
<td>Nervous sympt. of Tremors and Paralysis internal organs</td>
</tr>
<tr>
<td>Doves</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 Contact. suscep. chicks.</td>
<td>Died with nervous symptoms</td>
<td>13 - 24 D.</td>
<td>Nervous symptoms and congestion of internal organs.</td>
</tr>
</tbody>
</table>

**Shedding of Virus**

<table>
<thead>
<tr>
<th>Shed virus from first or second day of inoculation till the 4th day.</th>
<th>Preinoc. 1:0 or d aftia 1:0</th>
<th>Virus Isolation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shed virus from the 2nd to the 5th day.</td>
<td>Preinoc. 1:0</td>
<td>+</td>
</tr>
<tr>
<td>Died before blood collected.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shed virus from the 2nd to the 6th day.</td>
<td>Preinoc. 1:0</td>
<td>+</td>
</tr>
<tr>
<td>Died before blood collected.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shed virus in 2 out of 5 doves on the 12 day in the first and 21, 22 &amp; 25 d in the second.</td>
<td>Preinoc. 1:0 2 Od. 1:40</td>
<td>+</td>
</tr>
</tbody>
</table>
