

## OUTBREAK OF TURKEY POX DISEASE IN FOWL POX VACCINATED POULTS IN VOM PLATEAU STATE OF NIGERIA

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### ABSTRACT

An outbreak of poxvirus infecting 45 turkeys of 8 weeks of age is reported. Poults were previously vaccinated against pox using fowl pox vaccine. The outbreak persisted for 5 weeks with 100% morbidity but no mortality. The cutaneous form only existed. Turkey pox virus was isolated by propagation in chorioallantoid membrane and confirmed by reproducing the disease in susceptible turkeys.

### INTRODUCTION

Turkey pox is a world wide, slow spreading viral infection characterized by proliferative lesion in the skin (cutaneous form) that progresses to thick scabs and by lesion in the upper gastrointestinal and respiratory tract (Diphtheritic form). Transmission is commonly by contact to pen-mate through abrasion of the skin. Mosquitoes, poultry ticks & lice and other biting insects may serve as mechanical vector (3)

Prevention in Nigeria is by vaccination with fowl pox vaccine (cell cultured propagated or chorioallantoid propagated live viral vaccine from

Poults were previously vaccinated at 6<sup>th</sup> week of age against pox with fowl pox vaccines (manufactured in NVRI Vom, Nigeria). The origin of seed for the production of fowl pox vaccine is chicken. Post

chicken). In this report, despite the initial vaccination with fowlpox vaccine, there was an outbreak of Turkey Pox disease among a flock of turkeys.

### THE OBJECTIVES OF THIS WORK.

- i. To isolate the virus
- ii. To confirm the virus by reproducing the disease in susceptible turkeys.

### CASE HISTORY

An outbreak was reported in the month of June of pox virus infecting 45 turkey (mix bred) poults of 8 weeks of age.

vaccination 'take' was observed 4-5 days P.I. Morbidity rate was 100% over a period of 3 weeks. No death was

recorded. The infection was characterized by formation of progressively increasing nodular lesions in parts of the un-feathered skin, head, upper neck and eyelids.

## **MATERIALS AND METHODS**

Nodular lesion of turkey pox was excised from five mixed bred turkey poults. Excised lesions were weighed and ground with aid of sterile sand. A neat 20% w/v suspension was prepared with P.B.S, centrifuged at 2,500 r.p.m. for 30 minutes. The supernatant was decanted and stored in the deep freezer at  $-20^{\circ}\text{C}$ .

## **REPRODUCING THE DISEASE IN SUSCEPTIBLE TURKEYS**

3.0ml concentrated turkey pox virus suspension containing  $10^{-3}$  EID<sub>50</sub> was inoculated subcutaneously at multiple points on the head region of 5 (4 months old) Local bred susceptible turkeys.

1.0ml  $10^{-3}$  EID<sub>50</sub> was inoculated subcutaneously on both wing web of 5 (5 weeks old) Local bred turkey poults.

## **RESULTS AND DISCUSSION**

### **Reproducing the Disease In Susceptible Turkeys**

5 days post infection, multiple nodular lesions were observed on the head and upper neck region of the 4 month old susceptible turkeys. In the five weeks old poults, lesion appeared 4 days post infection.

The cutaneous form only with 100% morbidity but no mortality existed in the outbreak. These confirm previous observation that cutaneous infection ordinarily causes low or moderate mortality and the affected birds generally returned to normal upon recovery(1).

The source of infection may be traced to mosquitoes or other biting arthropods because poults were

raised under semi-intensive care in the rainy season, which agrees with the findings that when mosquitoes are plentiful, transmission within a flock may be rapid (2).

The disease may be exacerbated by other pathogens such as viruses of NCD, Infectious bronchitis and fowl pox, and also *Haemophilus paragallinarum* and *Mycoplasma gallisepticum*. Deficiency of vitamin A and excess ammonia in the atmosphere may also predispose to severe disease (4). Interestingly however, is the fact that after observation of post vaccination 'take' poults still came down on the disease. There have been reports on atypical and variant fowl pox virus strains based on the appearance of fowl pox lesions in previously vaccinated chickens. Upon further investigations these viruses have not proven to be variant (4).

Studies have shown that there is antigenic relationship among the pox viruses of the avian species and that the virus of one type of avian pox can give rise to disease in another species as well as may stimulate protection against another (3). Nevertheless, it is equally proven that turkey pox virus is immunogenically distinct from fowl pox virus. Consequently, turkey pox vaccine was developed from turkey pox virus and is now widely used in advanced countries (2). The homologous vaccine has proven to be superior in its immunogenicity in turkey compared to fowl pox vaccine. Yet in Nigeria, live fowl pox vaccine is being used in all categories of poultry.

Our recommendation is that attempt should be made to develop turkey pox vaccine from turkey pox virus for the growing turkey industry in Nigeria.

## **REFERENCES**

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