Avian pox in psittacine birds from Saudi Arabia

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SUMMARY

Retrospective analysis of 100 psittacine cases examined in Jeddah, Saudi Arabia, revealed that the disease most commonly diagnosed was avian pox (49%). Forty-eight affected birds were African grey parrots (Psittacus erithacus) indicating a high species-specificity. This is apparently the first report of avian pox in African grey parrots.


Material and methods

ANIMALS

One hundred diseased parrots were examined by the author in a veterinary clinic of Jeddah (Saudi Arabia) between January and September 2002. Number and species of parrots were the following: 2 Cockatiel (Nymphicus hollandicus), 4 Scarlet macaw (Ara macao), 9 Greater sulfur-crested cockatoo (Cacatua galerita), 12 Blue fronted Amazon (Amazona aestiva) and 73 African grey parrots (Psittacus erithacus).

DIAGNOSTIC METHODS

In all psittacine birds of this study avian pox was diagnosed on the basis of the nodular skin lesions (Fig. 1-3) and the presence of intracytoplasmatic inclusions bodies (Bollinger bodies) or elementary bodies (Borrel bodies) in epithelial cells (Fig. 4) obtained from lesion’s scrapings [4, 5] and stained with the modified Wright method.

Introduction

Large psittacine species such as African grey parrots, Amazons, Cockatoos and Macaws are common pet animals in many Arabian Countries. In the Middle East these birds are usually kept in cages and often referred to veterinary clinics because of concern for their diseases and for possible zoonotic transmission of pathogens to humans.

It is known that geographical and climatic conditions influence the presence and prevalence of animal’s diseases worldwide. During a period of veterinary practice in Saudi Arabia, an intensive bibliographic search for local parrot’s diseases was performed, but no mention whatever was found. In an attempt to fill this lack, a retrospective analysis of 100 consecutive clinic cases examined in Jeddah (Saudi Arabia) during 2002 was carried out. In this author’s knowledge, this is apparently the first study aimed at describing the epidemiology of pathological conditions affecting parrots in this area of the Middle East.
Results

Avian pox in the cutaneous form was observed in 48 African grey parrots and 1 Greater sulfur-crested cockatoo and confirmed through detection of Bollinger or Borrel (elementary bodies) inclusions in the cytoplasm of epithelial cells in all cases (Fig. 4). Wart-like growths in the form of nodular lesions were mostly single and of recent appearance (1 day - 1 week), localized around the eyes and beak and accompanied by mono-lateral eye closure, tearing and blepharitis (Fig. 1).

The initial macules (Fig 3) were observed to evolve into pustular lesions surrounded by erythematous edges, rarely followed by the formation of crusts on their surfaces. Collateral clinical signs included anorexia, lethargy, stop ‘speaking’ and respiratory distress. Yellowish caseous material contained in the nodules was removed surgically in 3 cases.

Discussion

This is the first attempt to realize a survey on the presence and prevalence of avian pox in psittacine birds from Saudi Arabia. The present report does not pretend to be exhaustive and should be considered as a preliminary study. Avian pox was the most common diagnosis (49%) made in 100 psittacine birds examined in Jeddah, based on detection of typical Bollinger and Borrel bodies (Fig. 4) in epithelial cells scraped from the pock lesions localized on featherless areas around eyes (Fig. 1-3). Forty-eight affected birds were African grey parrots. In the author’s knowledge this is the first report of avian pox in such species. The large number of cases observed may be due to climatic or environmental causes which, at present time, remain unknowns. In Kuwait, avian pox in the cutaneous form was diagnosed recently by this author in four African grey parrots out of 26 psittacine birds examined (unpublished data).
None of these parrots had been previously vaccinated against pox. The avipox prevalence reported here is particularly high if compared with other studies carried out in Europe [3], suggesting the existence of an endemic area in Jeddah and a specific susceptibility of African grey parrots versus others species. As a matter of fact, pox is reported to be endemic in poultry and domestic pigeons in Arabia [7]. Infection in these parrots could well be originated from these reservoirs, compatibly with the observation that an adequate mosquito vector population exists in the area [1].

The Arabic popular name for this condition, ‘jeddarih’, seems to indicate that the condition was known, and apparently common, in Jeddah since ancient times.

Pox viruses affect all avian species with specific strains showing possible cross-infections under certain circumstances [9]. However, there are scattered reports on clinical psittacine pox in literature [6, 8, 9]. It has been demonstrated that psittacine pox virus is a potential pathogen for poultry [2] and it is not excluded that fowlpox and pigeonpox viruses may be potential pathogens for cage parrots. Transmission is by mosquitoes or mechanic introduction through abraded skin, conjunctiva or mucous membranes [5]. Most cases develop as mild to severe, sub-acute to chronic forms showing single papules and nodules (dry lesions) on the skin of head, producing conjunctivitis, erythema, oedema, tearing, occasionally accompanied by dysphagia because of diphtheric lesions (wet lesions) appearing in the oropharynx [4].

Infections are generally thought to be self-limiting as long as the animal does not become debilitated [4]. However, death rate in psittacine birds was found to be high because of secondary bacterial and fungal infections [2, 6, 8].

Scarring of eyelids may result in chronic eye problems and prolonged virus shedding in those that recover, since a specific therapy is not available [4, 5]. The fundamental principle for controlling avian pox is to interrupt virus transmission, through the elimination of mosquito populations, the removal of heavily infected animals and the reduction of the opportunities for transmission between infected and non-infected birds [4]. It is therefore advisable that an appropriate pox vaccine should be routinely administered to psittacine birds living in endemic areas in order to prevent the spread of infection within the parrot population and the transmission to domestic fowls [9].

Main conclusion is that avian pox is endemic among psittacine birds in Jeddah (Saudi Arabia) with African Grey parrots being the most susceptible species.

References