

Respiratory Diseases in Parrots

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INTRODUCTION

A bird should be examined in its cage for the presence of dried or fresh discharge around the eyes and nostrils, the respiratory rate, laboured breathing and tail movements. This is followed by auscultation to determine an increase or decrease in respiratory and abnormal respiratory sounds. Laparoscopy is a useful tool in the examination of the abdominal air sacs (Fig. 1). Radiography (x-ray) is also helpful in determining lung lesions, air sacculitis, and space-occupying lesions. When a respiratory condition exists samples for further examination should be taken. Swabs for viral, bacterial and fungal cultures can be taken from conjunctival sacs, nares, choana, and trachea. Fluid can be aspirated from the infra-orbital sinuses and thorax. Biopsy material can be taken from the mouth, esophagus, trachea and abdominal air sacs. Blood samples are often taken for blood chemistry, bacterial or fungal culture and for serological tests.

GENERAL PRINCIPLES OF THERAPY

Supportive Treatment: Supportive treatment consists of adequate nutrition, and the provision of a suitable environment. Weakened birds may have to be force fed at regular intervals in order to supply their energy needs

Softbill Society Being Formed

In order to enhance communication among aviculturists with an interest in housing/propagating softbilled birds, a Softbill Society is being formed. Aviculturists with an interest in such birds are encouraged to contact one of the individuals listed below for further information. Jack Clinton-Eitniar, 612 North Main, Suite 239, McAllen, Texas 78501 or Steve Amos c/o National Aquarium in Baltimore, Pier 3, 501 East Pratt Street, Baltimore, Maryland 21202.

and the environment should be warm and free from outside disturbance.

Medical and Surgical Treatment: Medical treatment can be administered locally in the form of eye drops, nasal drops, sinovial injections, ointments, aerosol spray, powder or systemically by oral and parenteral routes. Oral administration to single patients is best done by individual dosing. For group treatment, drugs can be given in soft food, as treated grain or in the drinking water. The success of water treatment is variable depending upon the species, debilitation of the bird and environmental conditions. Intramuscular injection into the caudal part of the pectoral muscles is the generally preferred parenteral treatment. Anti-fungal treatment can be administered locally, generally, orally, or by I.M. injection. Anti-parasitic treatment is usually given orally for anthelmintics (individually or in the food or water) and insecticides are given by aerosol or dust inhalation, powder, spray, injection or spot-on treatment. Surgical treatment consists mainly of repair of injuries and the removal of obstructions. Obstructions include fibrinous exudate in the air sacs and sinuses, blocked gastrointestinal tract, foreign bodies and neoplasms.

RESPIRATORY DISEASES CAUSED BY INFECTIOUS AGENTS

Contagious diseases frequently occur in pet shops and aviaries and are rarely encountered in individually kept pet birds. Infectious respiratory diseases can be divided into infections of the respiratory tract and general infections accompanied by respiratory symptoms. It is not always possible to distinguish the two.

Viral Infections: Pox — in psittacines, pox virus has been isolated from many species including Amazon parrots, cockatiels, grass parakeets (esp. budgerigars), lovebirds and other species. Avian pox is spread by contact, aerosol droplets, and insect or mechanical transmission. Severe diphtheritic oral, oesophageal and crop lesions may

be seen in pox infections. The skin lesions are small, yellow or wart-like proliferations around the eyes and beak as well as on the skin of the head and neck. The degree of respiratory involvement depends upon the severity of the lesions. Pneumonia and congestion of the upper respiratory tract often make cases difficult to treat. Vaccination of unaffected birds with pigeon pox or canary pox vaccine helps to control outbreaks in an aviary. Symptomatic treatment of clinical symptoms may help to reduce the severity of an outbreak.

Newcastle Disease: Newcastle disease virus (NDV) is a highly contagious viral disease which attacks all avian species. There are several forms of the virus. Some forms produce death shortly after infection with the virus (peracute form) while other forms are sub-clinical and birds remain carriers. Velogenic Viscerotropic Newcastle Disease (VVND) is an extremely virulent form of NDV and is commonly the type found in imported psittacine birds. Several outbreaks of VVND in poultry have been traced back to imported birds. Birds exposed to the disease should be isolated from all other birds and in some countries mandatory slaughter is imposed. Killing of all exposed birds is the only method of eradication of the disease.

Herpes Viruses: A number of different herpes viruses have been found in many species of psittacine birds with a varying degree of respiratory involvement. Pacheco's parrot disease is the most frequently encountered. Pacheco's parrot disease causes severe respiratory symptoms characterized by conjunctivitis, rhinitis, pharyngitis, laryngitis, tracheitis, broncho-pneumonia and air sacculitis. Symptomatic antibiotic treatment and good management have no effect on the disease process. Treatment, therefore, is not warranted. Isolation and strict sanitization may help to prevent the spread of the disease.

Other Virus Isolates: Other viruses have been isolated from psittacines including adeno, corona, papova, and orbi viruses. Respiratory symptoms vary with the virus and the severity of infection. Viruses are difficult to treat and seldom respond to symptomatic treatment.

Bacterial Infections: Psittacosis — Psittacosis (Parrot Disease, Chlamydiosis, Ornithosis) causes systemic illness and as the disease progresses respiratory signs develop. Lethargy, diarrhea, sneezing, copious nasal dis-

charge and conjunctivitis are seen. Isolation of the organisms from blood, feces, or other tissues may take weeks to complete. For a quick diagnosis, a conjunctival impression smear can be stained with Stamp's Brucella stain, Giemsa's, Gimenez's, or Macchiavellos' stain (Fig. 2). *Chlamydia*, the organism causing psittacosis, becomes visible as very small intracytoplasmic inclusions under microscopic examination. A negative result does not necessarily mean a negative diagnosis. Several examinations may be necessary to determine the infection. The disease is transmissible to humans and care must be taken when handling birds suspected of having psittacosis. All newly introduced birds should be put on a treatment regime of tetracyclines for 45 days. Treatment of infected birds should be done with caution. Euthanasia is recommended for inexpensive birds diagnosed as having psittacosis.

Tuberculosis: Mycobacteriosis (tuberculosis) occurs in all species of birds. Few clinical symptoms are characteristic of T.B. infection in parrots. Some birds may harbor the infection for years without showing clinical symptoms until stress is placed upon them. Symptoms of T.B. infection include wasting of the breast muscles despite a good appetite, respiratory distress, lethargy, and feather disorders. The recommended control of the disease in T.B.-positive birds is disposal of the infected bird. Dirt floors and cage litter should be disinfected with a phenolic germicidal detergent where infection has occurred.

Mycoplasma: *Mycoplasma* spp. are known pathogens of the respiratory system of psittacine birds frequently causing air-sacculitis. Clinical symptoms of the disease are often not noticed because the signs may be obscure. Respiratory rales, dyspnoea, nasal discharge and sinusitis have been recorded from *Mycoplasma* spp. infections. Diagnosis of the condition is made by the growth of organisms on culture plates and by serological and biochemical tests. Some antibiotics favor the growth of *Mycoplasma* spp. therefore advice should be sought from a veterinarian regarding proper treatment.

Other Bacteria: *Salmonella* spp. is occasionally isolated from parrots suffering from respiratory disorders. *Escherichia coli*, however, is more commonly a secondary pathogen causing nasal discharge, moist rales, coughing and gasping. Other bacteria playing a role in respiratory infections

are *Streptococci* spp., *Staphylococci* spp., *Pneumococci* spp., *Pasteurella multocida*, *P. haemolytica* and *Haemophilus* spp. Many bacterial infections cause atypical respiratory symptoms because they are associated with a generalized condition. Diagnosis should be made by swab, culture, biopsy and other techniques and treatment determined by antibiotic sensitivity tests.

Fungal Infections: Candidiasis — *Candida* spp. often infect birds as secondary pathogens to severe viral infections. Pseudomembranes may form in the mouth, pharynx, esophagus and crop. Treatment with copper sulfate in the water or Amphotericin B may prove effective. The eyelids and nares may be blocked with exudate, forcing birds to breathe through an open beak (Fig. 3).

Aspergillosis: This disease is commonly found in quarantined birds, associated with stress, and often concurrently with bacterial and viral infections. The trachea, lungs and air sacs may be affected. The symptoms vary with the location of the lesions, but usually includes short and heavy breathing through an open beak, inflammation of the infra-orbital sinuses and severe emaciation. Cultures of tracheal swabs from larger birds, x-ray examination of lungs and air sacs and laparoscopic examination are useful diagnostic aids. Intramuscular injections with Miconazol (Daktarin, Janssen) for 6 to 12 days has been found to be an effective treatment in many cases.

Mucormycosis: Mucormycosis is caused by *Mucor* spp., *Rhizopus* spp., and *Absidia* spp.; all fungi which cause similar clinical symptoms as aspergillosis. A hoarse respiratory noise, labored breathing and inappetence are commonly described clinical symptoms of the disease. The condition is commonly found in African grey parrots in poor condition during quarantine. Treatment with Miconazol, as recommended for aspergillosis, should be tried.

Parasitic Infestations: Air sac mites are more common in the smaller psittacine birds than the larger parrots. *Sternostoma tracheacolum* is the most common air sac mite found. Severe infestations produce a peculiar wheezing sound, labored breathing, and finally death. Malathion dust, orthosevin powder or Carbyl pest strips are used for treatment of the condition.

Continued on page 52

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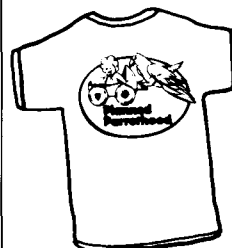
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Fig. 3 — *Candidiasis* can be found exhibiting several different clinical symptoms. This cockatoo that was affected had nares blocked with exudate forcing the bird to breathe through an open beak, with resultant oral discharge adhering to the commissures of the mouth.

MISCELLANEOUS CONDITIONS

External Pressure: External pressure on the respiratory organs can cause respiratory distress. In budgerigars the most common cause of labored, wheezing respiration is thyroid hyperplasia. Attacks often alternate with regurgitation of freshly eaten seeds, as pressure compresses the lower esophagus. The thyroid glands are inaccessible to palpation, being located inside the cranial aperture of the thorax. External pressure can also be exerted on the abdominal air sacs by large masses in the abdominal cavity, such as enlarged organs, neoplasms, ascitic fluid or accumulation of fibrin. The presence can usually be determined by careful examination of the patient or by x-ray.

Obstruction: Obstruction of the air passages may be caused by foreign bodies, parasites, neoplasms, exudates, swellings, and edema. In some cases surgical intervention may be indicated.

Injuries: Injuries can cause compression of the trachea. Flying into an obstacle may cause a rupture of one of the cranial air sacs and subsequent subcutaneous emphysema. It is difficult to find the place of rupture of the air sacs and usually surgical repair is not warranted.

Fractures: Fractures of the proximal 1/3 of the humerus in birds usually involves the cranial air sacs because of the communication with this bone.

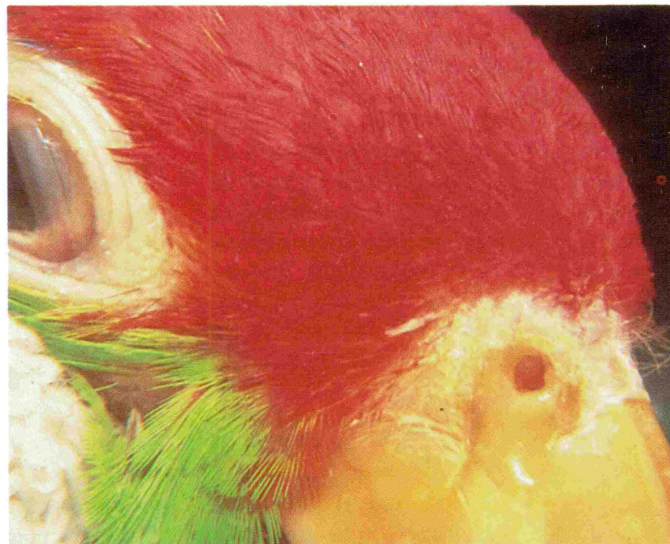


Fig. 5 — This Amazon parrot is exhibiting a very fluid, clear nasal discharge which may be one sign of respiratory disease seen in birds.

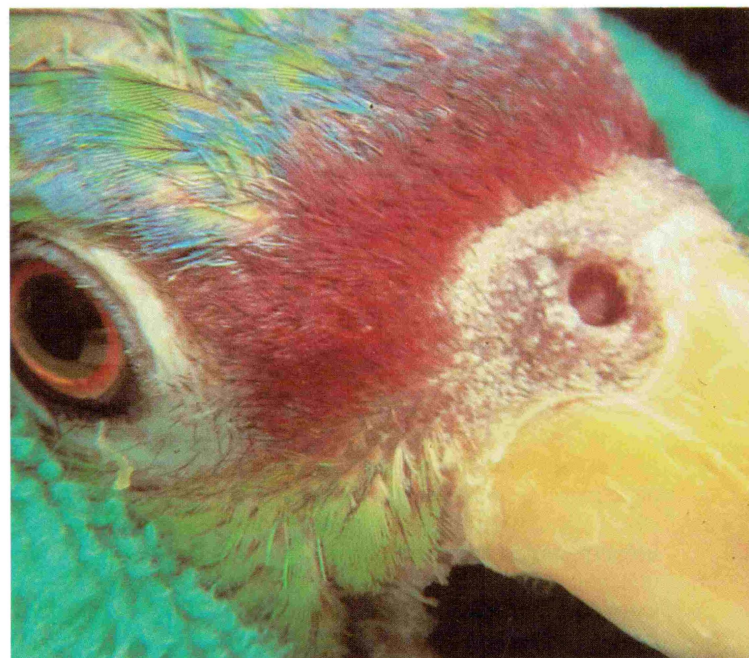


Fig. 4 — Knowing the difference between normal and abnormal respiratory symptoms aids in the diagnosis and treatment of a condition. This Amazon parrot has a normal cere and nostril.

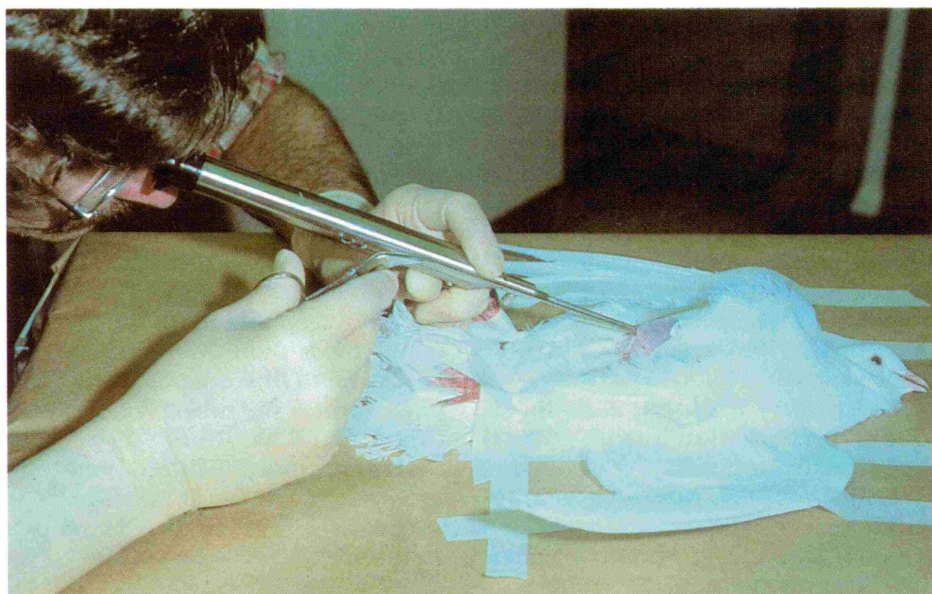


Fig. 1 — Laparoscopy is a useful tool in the examination of the abdominal air sacs.

Hemorrhage through this air sac into the lungs can lead to internal drowning and therefore recumbent birds with broken wings should be made to lie on the injured wing.

Aspiration Pneumonia: Bacterial infection of the lungs due to aspiration of foreign material during tube-feeding is widely reported. Aspiration pneumonia should be considered in any bird that develops respiratory signs 1 to 3 days after intubation. A normal cere and nostril is illustrated in Fig 4. This should be compared with Fig. 5, a bird exhibiting respiratory signs (nasal discharge) after intubation. This may be the first sign of aspiration pneumonia. Culture and cytology of exudate can be performed to help determine aetiology and treatment. The prognosis is usually poor when foreign material has entered the lungs. ●

Photo courtesy of Walter J. Rosskopf, Jr., D.V.M., Lawndale Animal Medical Centre, Hawthorne, California.

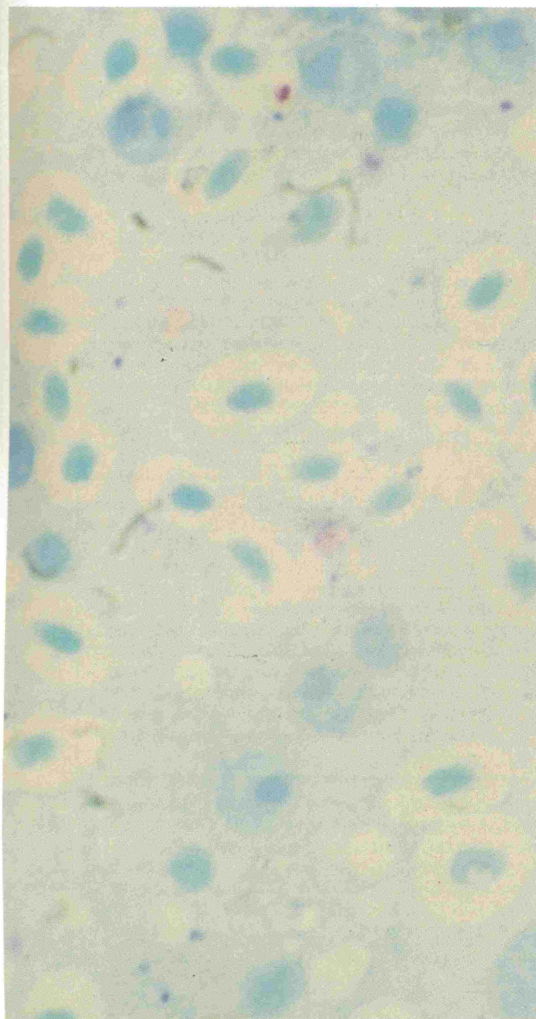


Fig. 2 — An impression smear stained with Gimenez's stain as a method of quick diagnosis of psittacosis. The causitive organism (*Chlamydia spp.*) are visible here as very small, red-stained intracytoplasmic inclusion bodies.

CLASSIFIED ADS

CLASSIFIED RATES — \$6.00 minimum charge for 4 lines of type (average 7 words per line). Additional charge of 12¢ per word for ad running over 28 words. (28 words to include name, address and phone.) All copy to be **RECEIVED BY 15th day 6 weeks** preceding publication. One inch boxed ad — 58 word maximum — \$15.00.

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SCARLET AND GREENWINGED MACAWS—Lovingly hatched and hand-fed at our breeding farm. Wanted: red fronted macaw males and scarlet macaw males, can trade for females. RAINTREE MACAWS, JOANNE ABRAMSON (707) 964-4380, California.

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