Basic Avian Medicine

J Gill*

Examination Equipment

Lighting and magnification
Towels
Crop Needles
Tuberculin Syringes
25 to 30 gauge needles
Fluorescein drops
Gram scales - digital or beam

In-House Laboratory Equipment

Microscope
Faecal Flotation equipment
Diff Quik
Gram Stain
Machiavellos Stain
Microhaematocrit Centrifuge
Refractometer
Dry Chemistry Analyser; Boehringer, Kodak, Vet Test
Clear View Chlamydia Test Kit
Bacteriology Incubator
Culture Medium
Sensitivity Discs
Formol saline for Histopath

The average small animal clinic has most of the equipment necessary for an avian clinical examination. Because of the small average size of the avian patient, good lighting and some form of magnification is thorough clinical examination. The old adage, you will make more mistakes by not looking rather than not knowing applies.

Good lighting can be provided in most examination rooms. If lighting is marginal, the addition of a wall-mounted spotlight or a head mounted spotlight is essential. Voroscopes are a convenient and readily available head-mounted spotlight.

Magnification can be provided in many forms of binocular loupes and can be combined with head- mounted spotlights. I find that increasingly I need to use my reading glasses when examining cage birds yet this is still not necessary for dogs and cats. Likewise the use of fluorescein drops is essential for examining avian eyes where it is rarely required to detect ulcers in dogs and cats.

A set of gram scales is essential for weighing birds. Beam balances are accurate but slow. Digital scales are quick and easy to use (available Dick Smith Stores). Repeated weighing of birds is important in accessing progress of our patients.

Crop needles - a range from 12 gauge to 21 gauge, stainless steel needles are useful for crop washes, oral medication and force feeding of a wide range of birds.

* **Canley Heights Veterinary Clinic, Shop 6 Harden St. & Avoca Rd. Canley Heights NSW 2166**

I find stainless steel crop needles have many advantages over the alternatives, but drip set tubing or old intravenous catheters can be used in an emergency. Stainless steel crop needles are not chewed up by disagreeable patients, do not kink and are not as easily blocked as plastic tubing. I autoclave batches of crop needles in 50 mL syringe cases so as to have a constant supply of sterile needles.

A supply of tuberculin syringes and 26 to 30 gauge needles is essential for medicating birds and collecting blood samples.

Standard faecal flotation test kits are used for detecting intestinal helminths.

It is also wise to do direct wet preps of very fresh faeces looking for motile protozoa, especially in finches, cockatiels and king parrots. Always use a cover slip to reduce the thickness of the sample being examined. GENTLE warming of the slide is necessary to promote motility of these protozoa. There is probably a very narrow line between too little and too much heating of these samples. It is worthwhile experimenting a little with obviously positive trichomoniasis lesions to develop this technique of gentle warming.

These wet preps can then be heat fixed and gram stained to help assess the microbiological flora of the gut. The examination of the faecal gram stain is a very valuable aid. It is still very subjective but certainly "significant" numbers of gram negative bacteria are considered abnormal in granivorous birds. Gram staining is considered by many avian veterinarians to be an essential part of the avian clinical examination. I tend to reserve its use for cases that I am in doubt about a diagnosis, eg diarrhoea caused by gram negative bacterial enteritis or heavy metal poisoning. On initial examination the results of a gram stain will rarely alter the treatment protocol for a particular patient. The first choice antibiotic will remain the same and even if the primary problem is not bacterial I tend to treat all birds with antibiotics against secondary bacterial infections.

The ability to be able to measure PCV and TPP is essential and therefore a microhaematocrit centrifuge and refractometer are even more necessary than in a routine small animal clinic.

Microbiological satins and cytological stains are essential for in-house diagnostics. Rapid turn around times can be critical to the avian patient and the advantages of doing them in house far outweighs any lack of expertise on the part of the practitioner.

Our practice has in the past done in house microbiological culture and sensitivity testing without identifying the organism. With improved turn-around times from outside laboratories we are currently sending the vast majority of our culture work to outside labs.

The advent of dry chemistry technology and therefore the ability to perform biochemistry tests has revolutionised avian medicine in our practice. We use the Boehringer *Reflotron* and are very pleased with its ease of use and the correlation we get between results when we do send blood to an outside lab.

Some laboratories are now doing full biochem screens on small quantities of avian blood. This is more cost effective for complicated cases.

The *Clearview* Chlamydia Antigen Test is a useful adjunct to the diagnosis of chlamydiosis in our patients. However we should be careful that we do not market it to our clients as infallible. Chlamydiosis will largely remain a clinical diagnosis in the foreseeable future. No one diagnostic procedure will be 100% accurate. Large numbers of Gram-negative bacteria will give false positive results and therefore Clearview testing should be combined with Gram staining of the sample. False negatives will also occur, if we are suspicious of chlamydiosis after a negative *Clearview* we will then do a Machiavello's stain looking for elementary bodies.

Post mortem instruments are essential along with a suitable area for performing this all too common procedure in avian medicine. We use a variety of instruments from old ophthalmic instruments for finches to heavy duty forceps scissors and secateurs for cockatoos, macaws and ostriches. The risk of acquiring zoonoses must be minimised - gloves and wetting the feathers and carcase with water and disinfectant are essential. We also use an old biological hazard cabinet which, although it would not meet laboratory design standards, reduces our exposure to aerosols, particularly when first opening a carcase.

Common Avian Conditions

NB Heavy metal poisoning all species psittacine birds.

Budgerigar:	Trichomoniasis, *Cnemidocoptes*, coccidia, ascarids and *Capillaria*, PBFD, bacterial septicaemia, red mite in nest boxes, neoplasia, egg binding, goitre, gout, obesity, megabacteria.
African Lovebirds:	Ascarids and *Capillaria*, upper respiratory tract infections, PBFD, bacterial septicaemias, trauma from other African lovebirds, self trauma/polyfolliculosis.
Neophemas:	Conjunctivitis/chlamydiosis, ascarids, bacterial septicaemias, *Cnemidocoptes* in scarlet-chested parakeets.
Psephotus:	ascarids, trauma/fighting, chilling of nestlings.
Polytelis:	Ascarids especially princess parrots, *Cnemidocoptes*, especially princess parrots, bacterial septicaemias, conjunctivitis (*mycoplasma* in superbs), paralysis syndrome.
Lorikeets:	fungal crop infections, bacterial septicaemias, nutritional diseases, PBFD, paralysis syndrome.
Cockatoos:	PBFD, self-mutilation, bacterial septicaemias, nephritis, fungal crop infections (black cockatoos), metabolic bone disease in nestlings, obesity, tapeworms.
Conures:	egg binding, *Capillaria*
Asiatic Parrots:	Nestling viral diseases (papovavirus?), metabolic bone disease in juveniles.
African Grey parrot:	Hypocalcaemia (flaccid paralysis)
Quarrion/Cockatiel:	Ascarids, conjunctivitis/chlamydiosis, upper respiratory tract infections.
Pigeons:	Upper respiratory tract infections/*Mycoplasma*/*Chlamydia*, trichomoniasis, *Salmonella*, ascarids and *Capillaria*, tapeworms, lice, red mite, pigeon pox, coccidia.
Canaries and finches:	Air sac mite, canary pox, feather cysts, egg peritonitis, coccidia, *Atoxoplasma*, tapeworms, gizzard worms, megabacteria.