Avian Neonatology & Pediatrics

Lorenzo Crosta, med vet, PhD, DECZM,
EBVS European Veterinary Specialist in Zoological Medicine,
FNOVI acknowledged veterinarian in avian and zoo medicine

I. Breeding techniques
   A. Parrot breeding has changed a great deal in the past 30 years
   B. From almost 100% hand rearing to almost total denial of this technique
   C. Pros and cons
      1. It is right to hand rear birds?
      2. Is it better to have parent-raised chicks?
   D. Regardless of how chicks are raised, some young birds will become sick but the breeding technique will affect the problems observed
   E. Recognition that there is a problem is also affected
      1. The main obstacle to veterinary care of young birds
      2. Most parrot owners do not have the needed experience to "perceive" if something is wrong with a young chick

II. Normal development
   A. It is important for anyone involved in aviculture to understand normal development of the chick
   B. Simplest way to monitor a chick's condition is to monitor growth and weight gain
      1. Common mistake is to believe a chick is not doing well because it is under the "normal published" growing rate for a species
      2. Growth curve
         a. Study the complete growth rate of a chick and compare its share with published growth curves
         b. Do not give too much importance to the body weight (BW) itself
         c. As a general rule, healthy psittacine and Falconiformes chicks double BW over 7 days
         d. Weight gain is not the only indicator of well being
      3. Other parameters that should be considered:
         a. Body proportions

b. Posture (species-specific)
c. Hydration status
d. Skin color, texture
e. Fat deposits
f. Tone and thickness of the crop
g. Regular feather development
h. Feeding response (species-specific)

III. How to identify a sick chick
A. Sick chicks are generally easier to ID than adult birds
B. Perform a complete physical examination
C. Ancillary testing
1. Crop and cloacal sampling, microbiology
2. Hematology is extremely useful
3. Blood chemistry is not considered very useful for birds of this age
4. Radiology
D. Species-specific differences in clinical signs and behaviors

IV. Selected neonatal and pediatric cases
A. Infectious
1. Omphalitis
a. Problems during incubation lead to an imperfectly sealed umbilicus at hatch that is easily colonized by bacteria
b. Regional invasion of the yolk sac can result in serious infection
c. Clinical signs
a. Weak
b. Distended abdomen
c. Slow crop emptying
d. Often evidence of a soft, “rotten” umbilical scar
2. Pneumonia
a. Common in young psittacine birds
b. Causes can be environmental, toxic or accidental (aspiration) but often an infectious agent plays a role
c. Chick presents with some degree of respiratory distress
d. Normal Pionus parrots can appear to be in distress when frightened

e. Diagnosis is based on radiographs, culture, blood tests, endoscopy (if chick size allows)
f. Treatment
    a. Supportive care (oxygen, fluids, etc.) are needed in the first hours or days
    b. Systemic and aerosolized antibiotics
g. Prognosis is extremely variable

B. Orthopedics
1. Angular limb deformity (curved limbs)
    a. Affects one or more limbs, mostly the legs
    b. Not uncommon, seems to be more common in grey parrots
    c. Even a small imbalance in calcium metabolism seems to play a key role
    d. Poor prognosis if more than one limb is affected
    e. Survey radiograph
    f. Derotational and dome osteotomy followed by mixed internal-external fixation
    g. ARUS technique
        a. Named after Dr. Alberto Arus
        b. Aluminum can
2. Scissors beak
    a. Fairly common problem in hand-reared chicks
    b. Seems to be related tube feeding and particularly always tube feeding on one side
    c. If diagnosed very early, can be adjusted using physical therapy/manual pressure several times per day
    d. Plastic splint made with moldable rigid bandage material (i.e. Excelite®)
3. Turned feet
    a. Less commonly seen
    b. One (or both feet) rotate medially or laterally

C. Crop foreign bodies
1. Common problem (avoid having dangerous objects within reach of chicks)
2. Feeding tubes and other large objects can be retrieved manually or with the help of an endoscope
3. It is generally safer, quicker, and less stressful to remove small particles, like pieces of litter, via ingluviotomy