THE PSITTACINE BEAK—CONDITIONS, DISEASES, AND CARE OF THE BEAK

The Psittace Beak: Conditions, Diseases, and Care of the Beak
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Obviously, the form, size, shape and structure of the beak correlate with the feeding practices of the bird, but there is another factor involved: the gender of the bird. Gender seems to play a significant part in the appearance of the beak and leads to formations that have yet to be understood by researchers.

Under the keratin covering, the beak is filled with an extensive blood supply and many nerves. These are located in the grooves and pits of the beak’s bones. These highly vascularized and innervated bones provide birds in the parrot family with amazing tactile sensory ability. Of all the areas on the beak, the tip is the most sensitive. The bones of the beak are not solid, but contain air spaces, called concha (pl: conchae). In addition, nasal and sinus cavities in the head extend into the beak, and the upper beak, the maxilla, contains part of the infraorbital sinus.

Developmental Conditions

- Sometimes birds will hatch with congenital deformities due to genetic problems or

[Image: Alexandrine Parakeet chick - an injury to the upper beak is causing the beak to curve to the left. Used by permission.]
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improper incubation methods.
- Chicks may present with incorrect beak curvature and/or size.
- Hand-fed macaws and cockatoos tend to display these issues as they grow; these are due to poor hand-feeding techniques. Even parent-reared birds will sometimes show these beak deformities.
- Hand-fed macaws often display scissors beak, in which the maxilla deviates laterally from the mandible.
- In cockatoos, the curvature of the upper beak is increased, and the affect bird seems to have an overly long mandible (Mandibular prognathism.)
- If attended to early, some of these deformities can be corrected by gentle pressure on the beak at feeding time; more severe cases may require corrective orthodontic hardware.

**Mandibular Prognathism in a Cockatoo**

**Other Difficulties of the Beak and Nares Include:**

- **Overgrown beak**, sometimes with bruising in the keratin of the beak. This is usually due to liver disease, mites or lack of occlusal wear.
- **Inability of the bird to close its beak properly.** This is often found in macaws and may be due to poor bone development leading to hyperextension of the maxilla, hyperextension of the mandible, or fractured jaw.
- **Flaking of keratin on the beak.** This is caused by malnutrition or the lack of abrasive surfaces in the cage that the bird can use to groom its beak on.
- **Unequal size of the nares.** This is often due to chronic respiratory disease or trauma imposed by other birds.
- **Hypertrophy of the cere.** This is a brown plaque-like substance on the cere of hens, although males can develop it as well. This may be partly removed by gently rubbing it off with a warm cloth. It is associated with increased estrogen as the bird ages.
- **Blocked or stained/matted feathers** above the nares, and blocking of the nares. This is caused by chronic respiratory disease or choanal atresia (absence of a choanal opening in the roof of the mouth.)

**Trauma**

Clinicians see evidence of trauma quite frequently in their practices. Males become quite aggressive during breeding season, and the female is often the target of his aggressive behavior. Their interaction time should be limited. Mate aggression causes crushed beaks and injury to the face and head. If the larger bird removes a portion of the underlying bone,
the beak will still heal, but it will only grow over the shortened bone, and the beak will grow out in unusual shapes. Larger birds inflict serious injuries upon smaller birds; therefore, the owner should house the various species in the flock separately.

**Nutritional concerns**

Malnutrition is a common cause of beak softening and flaking. Vitamin A deficiency is seen most often, especially in birds on an all-seed or otherwise nutritionally deficient diet; this causes the beak to grow at an abnormal rate. Beta carotene is the precursor to Vitamin A, and is important in the formation of keratin and the normal development of epithelial structures, like the skin, feathers, nails and beak. It is found in orange and green fruits and vegetables, such as carrots, sweet potatoes, squash, beet greens, cantaloupe, etc. and pellets.

**Metabolic diseases**

Liver disease is one of the more common causes of an overgrown beak. Overweight birds are likely to develop hepatic lipidosis (fatty liver disease), which often interferes with the metabolism of amino acids necessary for normal beak growth. Without these, the liver cannot detoxify or make bile acids.

Birds with overgrown beaks due to liver disease often appear healthy early in the disease process, yet their liver function is significantly reduced. At the same time, abnormalities in the feather color and quality may be seen. Affected birds need to be supplemented with glycine, which is found in some meats, seeds, legumes, and egg white, and with other medicinal therapeutics.
Infections, Viruses, and Parasites

The psittacine beak is one of the targets for the circovirus, the cause of Psittacine Beak and Feather Disease (PBFD). The virus causes beak thickening, elongation, ulceration and fractures, and is most often seen in cockatoos. Feather loss on both the head and body is another symptom of PBFD.

Other viruses the affect the beak include the poxviruses and polyomavirus. Trauma and sinus infections cause secondary bacterial and fungal infections. Knemidokoptes mites cause scaly-face mainly in budgies; these mites attack the unfeathered areas of the face and feet first then turn to the skin and feathers around the eyes and beak.

Cancer

Cancer of the beak is possible, but rare. It is seen mostly in older birds; they may develop squamous cell carcinoma, melanoma and fibrosarcoma.

Care of the Beak

The Psittacine beak should be observed and cared for by the avian veterinarian at the annual checkup. This is important to ensure optimal health, weight and beak structure.

The bird should receive:

A well-balanced diet, including vitamin-A nutrients, as in fruits and vegetables, and supplementation if needed.

A proper feather trim to allow for safe landing and turning so as not to damage the beak.

Environmental safety precautions, including flock-interaction management

Appropriate chewing and beak-rubbing outlets (wood toys and perches, cuttlebones, mineral blocks)
Periodic blood sampling to assess internal health and liver function.