



What Is Your Diagnosis?

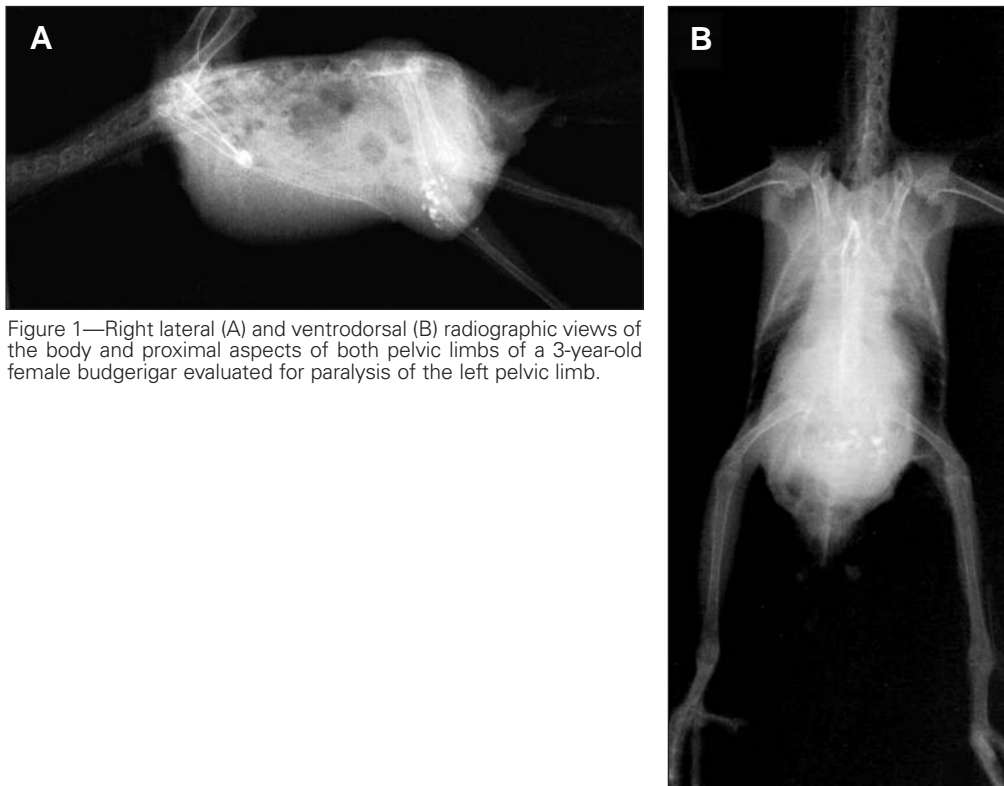


Figure 1—Right lateral (A) and ventrodorsal (B) radiographic views of the body and proximal aspects of both pelvic limbs of a 3-year-old female budgerigar evaluated for paralysis of the left pelvic limb.

History

A 3-year-old female budgerigar (*Melopsittacus undulatus*) was evaluated for paralysis of the left pelvic limb after the owner noticed that the bird was holding its left leg straight out behind it and was lying in its food dish at the bottom of the cage. On physical examination, a firm mass was palpable caudal to the keel on the left side of the coelomic cavity. Increased respiratory sounds were detected during auscultation of the lungs and abdominal air sacs. No fractures were palpated, and there was no voluntary flexion, grip, or withdrawal reflex in the affected limb. Radiographs of the bird's body and proximal aspects of both pelvic limbs were obtained during anesthesia (Figure 1).

Determine whether additional imaging studies are required, or make your diagnosis from Figure 1—then turn the page ▶

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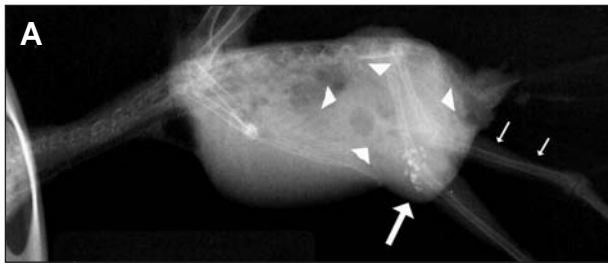


Figure 2—Same radiographic views as in Figure 1. On the lateral (A) radiographic view, the ventriculus is ventrally displaced (large arrow) by a soft tissue mass in the midcoelomic cavity (arrowheads). On both radiographic views, severe muscle atrophy (small arrows) of the left pelvic limb can also be seen.



Radiographic Findings and Interpretation

On the lateral radiographic view, the grit-filled ventriculus is displaced ventrally and slightly caudally by an ill-defined soft tissue mass in the middle to caudal portion of the coelomic cavity. Gas-filled intestinal loops are superimposed over the soft tissue mass. On the ventrodorsal view, the intestines are displaced laterally by the mass. Severe muscle atrophy of the left pelvic limb is evident on both radiographic views. Differential diagnoses for a dorsocaudal coelomic mass displacing abdominal structures ventrally and laterally include renomegaly and ovarian enlargement secondary to hypertrophy or neoplasia. The concurrent radiographic finding of severe muscle atrophy of the left pelvic limb in the absence of skeletal changes is compatible with neurogenic atrophy. Neurogenic atrophy, in combination with a dorsocaudal coelomic mass, is suggestive of sciatic nerve compression or entrapment because of a renal or ovarian mass (Figure 2).

Comments

The bird was euthanized via potassium chloride (13.3 mEq/kg [6.05 mEq/lb], IV) because of the poor

prognosis, and necropsy was performed. A soft tissue mass (1.5 × 1.5 × 1 cm) was located left of midline, occupying a space dorsal to the intestines and extending from the last rib to the cloaca. The mass was yellow and firmly attached to the dorsal body wall and left kidney and was compressing the left sciatic nerve. On histologic examination, the mass was identified as an ovarian adenocarcinoma, with metastases to the liver, lung, left kidney, abdominal air sac, and multiple lumbar vertebral bodies.

The location of the sciatic nerve in birds is such that the nerve passes through the renal parenchyma. Therefore, enlargement of the kidney can cause compression of the nerve, leading to neurogenic paralysis. The most common clinical sign seen in birds with renal or gonadal tumors is unilateral pelvic limb paresis that progresses to paralysis in the early stages of tumor growth.¹ These clinical signs may be accompanied by abdominal distension, attributable to the mass itself, or displacement of coelomic organs, such as the ventriculus.

Common differential diagnoses for unilateral renomegaly include renal adenocarcinoma, lymphoma, and polycystic kidney disease. Renal tumors have been reported in many avian species but are particularly common in budgerigars. Renal carcinoma is the most common tumor of the kidney, but adenomas, nephroblastomas, cystadenomas, fibrosarcomas, and lymphosarcomas have also been reported.² Birds with renal tumors have a poor prognosis, and surgical resection may not be possible given the location and extent of abnormal tissue present.¹

Gonadal diseases that cause organomegaly can also cause compression of the sciatic nerve and unilateral paralysis because of their location immediately cranial to the kidneys. Common causes of ovarian enlargement include ovarian adenocarcinoma and granulosa cell tumors, which can invade the kidneys and subsequently cause compression of the sciatic nerve.¹ Budgerigars with unilateral pelvic limb paralysis often have ovarian or oviductal neoplasia, whereas ovarian neoplasia has been reported less frequently in other Psittaciformes.³ Although not identified in the bird of this report, functional ovarian tumors can also cause polyostotic hyperostosis (increased medullary bone density).⁴ Another cause of ovarian enlargement is cystic ovarian disease, although this is less frequently associated with paralysis.¹

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