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Multifocal Hepatocellular Carcinoma in a Malayan Wreathed Hornbill (*Rhyticeros undulatus*)

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Abstract: A 30-year-old female intact Malayan wreathed hornbill (*Rhyticeros undulatus*) was presented for presumed nesting behavior, progressive anorexia, dropping food, and coelomic distension. A complete blood count and plasma biochemistry analysis revealed marked inflammation, severe electrolyte abnormalities, elevated liver enzyme activities and bile acids, and normal plasma iron concentrations. Radiographic images of the patient were consistent with hepatomegaly and loss of serosal detail in the coelomic cavity. A computed tomography study revealed multiple poorly contrast-enhancing hepatic nodules, hepatoperitoneal and intestinal peritoneal fluid and gas, and a contrast-enhancing mass in the ventral coelom. Cytologic samples of the liver were consistent with necrosis, and the coelomic effusion was characterized as an aseptic suppurative exudate. An exploratory coeliotomy was performed and biopsy samples of the liver and a mesenteric mass were histologically interpreted as a tubular carcinoma with metastasis to the liver and secondary portal hepatitis. Euthanasia was elected and multiple liver masses and a peripancreatic mass were identified on necropsy. Histopathological samples collected during the postmortem gross examination showed multiple well-demarcated hepatic masses consisting of neoplastic hepatocytes encapsulated by fibrous tissue and proliferation of dysplastic biliary ductules, as well as a peripancreatic heterophilic granuloma with adjacent pancreatic atrophy and ductular proliferation. Ultimately, the patient was diagnosed with multifocal hepatocellular carcinoma and chronic granulomatous and heterophilic pancreatitis, steatitis, and coelomitis with intralesional bacteria. Malignant hepatobiliary neoplasia has been poorly documented in hornbills despite high anecdotal incidence in this and other avian species predisposed to iron storage disease. This report illustrates clinical and pathological information, including advanced imaging, which could aid in the diagnosis of this condition in hornbills and other avian species.