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FELINE CHOLANGITIS

Cholangitis has become the preferred term for what was formerly called cholangiohepatitis. The reason for nomenclature change is simply because the histologic lesions are associated with the biliary tract and the hepatic tissue typically has little involvement (or only secondary involvement). Currently, there are 3 forms of cholangitis in cats which appear to have different etiologies: neutrophilic cholangitis, lymphocytic cholangitis, and chronic cholangitis. This session will focus on the first two forms.

Neutrophilic cholangitis is often reported as the most common form. The primary etiology in these cases appears to be bacterial infection, which likely ascends from the gastrointestinal (GI) tract. There is no clear age, breed, or sex predilection for this form of cholangitis; however, one consistent component of the history is that illness has typically been relatively acute (i.e. <2 weeks). The clinical signs are often relatively vague with reports of decreased appetite, decreased energy, vomiting, and weight loss. Examination can range from unremarkable to findings such as dehydration, icterus, abdominal pain ± hepatomegaly. Consistent with the suspected bacterial etiology, affected cats are frequently pyrexia. Laboratory abnormalities are largely referable to both a bacterial infection and liver disease, with alanine aminotransferase (ALT) more elevated than alkaline phosphatase (ALP). The most common hematology changes are a neutrophilia ± left shift while the most common biochemistry abnormalities are hyperbilirubinemia, elevated ALT, and less frequently an elevated ALP and gamma-glutamyltransferase (GGT). Abdominal imaging can help support the suspicion of neutrophilic cholangitis; however, abdominal radiographs tend to be less useful with some cats having evidence of hepatomegaly. Abdominal ultrasound permits closer analysis of the hepatobiliary tree and can show a thickened and irregular gallbladder wall, dilated common bile duct, echogenic gallbladder contents, hepatomegaly, and hyperechoic hepatic parenchyma. Other concurrent disease, such as pancreatitis (hypoechoic pancreas) and thickened GI tract consistent with inflammation, may also be noted. As mentioned above, the most common source of the bacterial infection is the GI tract with ascension via the biliary tree. *E. coli* has been found to be the most common isolate in cases in which culture has been completed. Ideally, the diagnosis is supported via bacterial culture either from bile or hepatic tissue. Bile can be obtained percutaneously with ultrasound guidance and tends to more frequently yield positive growth than hepatic tissue. If bile is obtained, the sample should be submitted for cytology and culture (both aerobic and anaerobic). Liver aspirates/cytology may show neutrophilic inflammation but this can be a non-specific finding and cannot confirm the diagnosis. Hepatic biopsy and histology is required to properly confirm the diagnosis. The focus of treatment is antibiotics; initial treatment should include broad spectrum antibiotics with appropriate selections including a fluoroquinolone + potentiated penicillin or a fluoroquinolone + penicillin + metronidazole. If a positive culture is obtained, once available the sensitivity report can help narrow the antibiotic selection. In addition to antibiotics, supportive care is often necessary while cats begin to recover. Considerations include fluid support (intravenous or subcutaneous), analgesia (usually an opioid), anti-emetics, liver supplements (S-adenosylmethionine, silybin, ursodeoxycholic acid), potassium supplementation, vitamin K^1 supplementation, and appetite stimulation. The prognosis for cats diagnosed with neutrophilic cholangitis is generally good; however, concurrent/underlying disease does have to factored into a patient's overall prognosis.

Lymphocytic cholangitis, in contrast to neutrophilic disease, appears to be far less common. The etiology in this form appears most consistent with an immune-mediated process. Some have hypothesized that an initial bacterial infection may trigger an immune response and progression to lymphocytic cholangitis; however, this cause/effect relationship is unproven. There is no consistent age, breed, or sex predilection, although some studies have reported a male preponderance and an increased incidence in younger cats (although other studies have found older cats to be at risk). Norwegian Forest cats have been found to be overrepresented in the Netherlands. The history of illness tends to be more protracted in these cats – signs have generally been present for weeks to months. They generally appear to be less clinically ill and appear brighter. The list of clinical signs has significant overlap with neutrophilic cholangitis but is generally far less severe and although vomiting, poor appetite, and lethargy may be reported, the most common finding is often weight loss alone. Examination also tends to be very similar to neutrophilic cholangitis; however, pyrexia frequently is not present with lymphocytic cholangitis. Laboratory testing may show hyperglobulinemia and

usually shows an elevated ALT and ALP; however, the ALT elevation is not generally as severe as with neutrophilic cholangitis. The blood count is non-specific and frequently unremarkable. Abdominal imaging is largely similar to cats with neutrophilic cholangitis although abdominal lymphadenopathy is more frequent and gallbladder abnormalities are less frequent with lymphocytic cholangitis. Biopsy can confirm the diagnosis in this disease and polyclonal PCR testing on biopsy samples can help differentiate severe lymphocytic inflammation from small cell lymphoma. Treatment is focused on immune suppression (usually steroids ± additional modulators) and similar hepatic supplements as mentioned for neutrophilic cholangitis. The prognosis is a little more guarded (outside of the acute illness setting) for lymphocytic cholangitis – median survival times are 2-3 years, but it must be considered that many of these cats may be diagnosed later in life.

Chronic cholangitis is associated with liver fluke infestation, but many cats may remain asymptomatic. *Platynosomum fastosum* are found in tropical/subtropical regions of the world and have very high prevalence in free-roaming cats (up to 80%). Opisthorchiidae occur worldwide with estimated prevalence in free-roaming cats of 30-50%. Free-roaming cats >2 years old appear to be at greater risk, and many cats remain asymptomatic. Cats which are symptomatic have very similar clinical signs to other forms of cholangitis. Fecal analysis can assist in the diagnosis. Treatment with praziquantel is generally effective against liver flukes.

References

1. Boland L, Beatty J. Feline cholangitis. Vet Clin North Am Small Anim Pract 2017; 47: 703-24.