

# Small Animal Veterinary Ultrasound

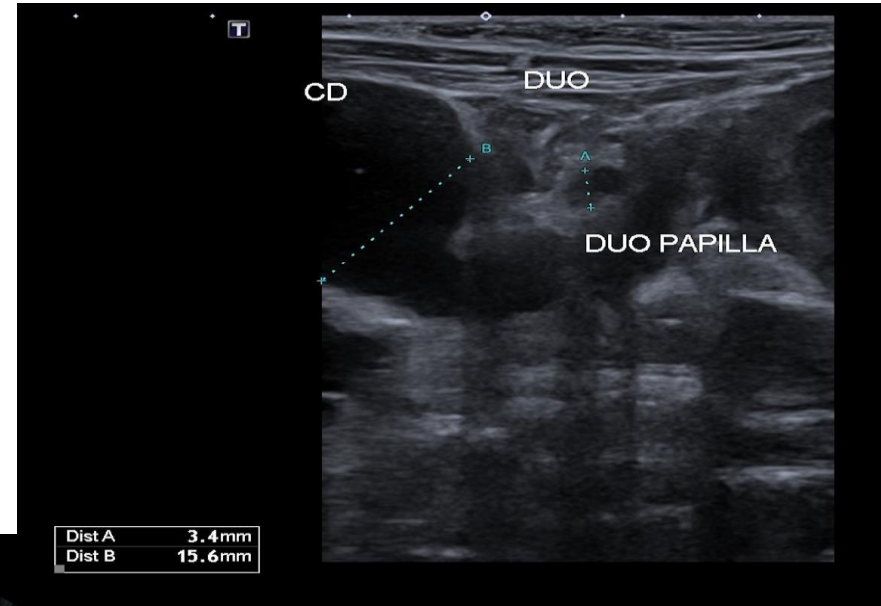
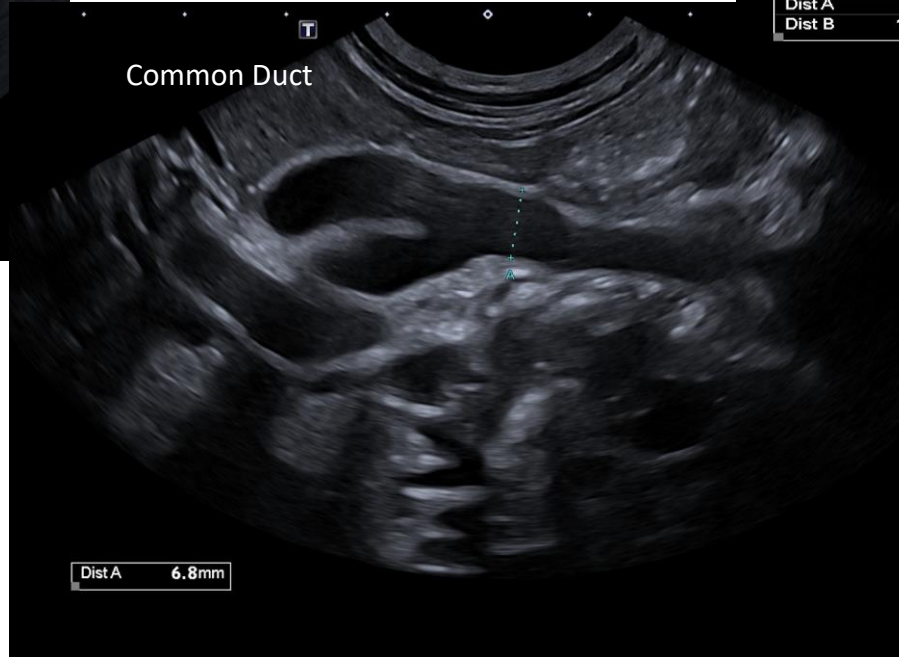
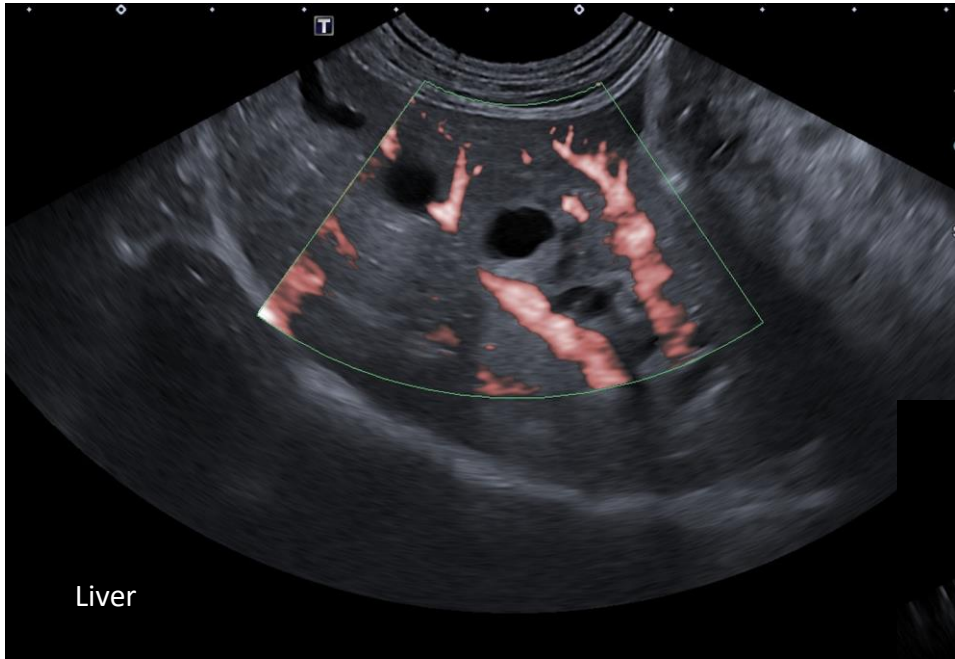
## Case No. 3 February 2023

### Clinical details:

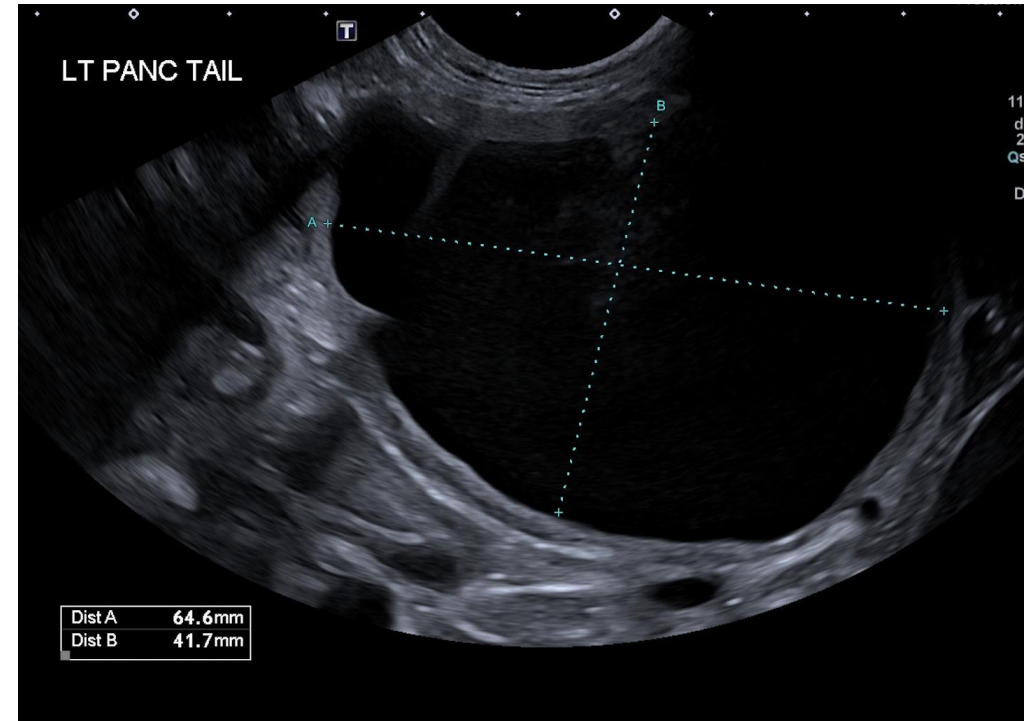
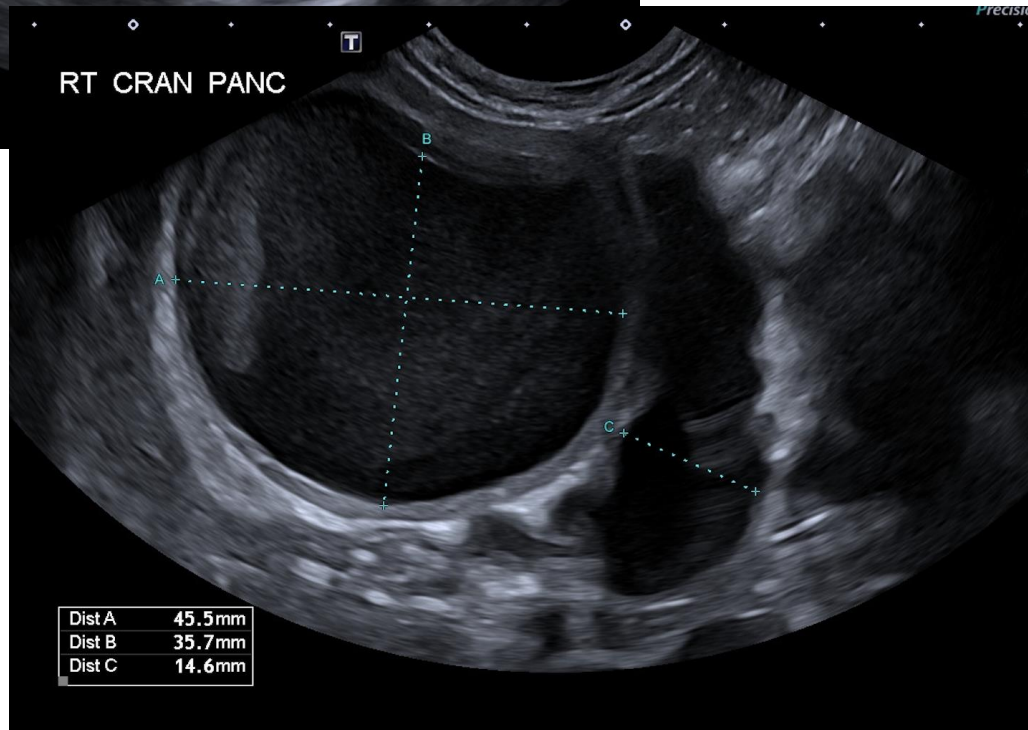
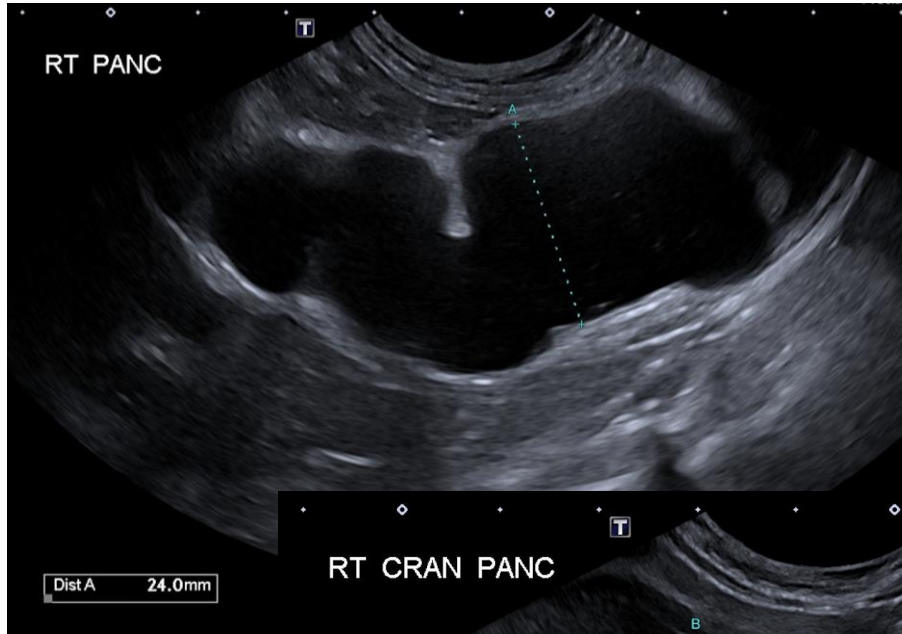
- 9yr female Maine Coon cat
- Vomited overnight, eating normally up until then but became more vocal than usual (very loud)
- Lethargic and hiding away
- Raw fed, intolerant to chicken
- Raised liver enzymes (AST, ALT, Alk Phos, Total Bilirubin, Bile Acids, Cholesterol)
- Working diagnosis: suspected cholangiohepatitis

### Further details:

- Previous pyometra as ex-breeding cat
- Fully vaccinated and wormed
- Indoor cat



B



Do not progress on to the next slide until you have given your differential diagnosis(es)

## **Ultrasound Findings:**

- Diffuse, mildly coarse hepatic parenchyma
- Marked intra- and extrahepatic duct dilatation
- Thick-walled contracted gallbladder noted
- Common duct measures 6.8 mm at main portal branch, 15.4 mm in the mid-section and 3.4 mm at the level of the duodenal papilla
- Enlarged, irregular, hypoechoic left pancreatic limb, containing several anechoic cysts within, the largest being 8.4 mm diameter. The left pancreatic duct is dilated, measuring 10.1 mm VD diameter. Associated with the tail of the left pancreas is a 64.4 mm thick-walled cyst containing internal echoes / turbidity
- Enlarged hypoechoic right pancreatic limb containing a second large cyst in the cranial aspect with an internal fluid level. The cyst measures 45.5 mm diameter. The right pancreatic duct is also dilated, measuring 24.6 mm
- Increased volume of hyperechoic mesenteric fat and traces of free abdominal fluid noted
- Ultrasound-guided pancreatic cyst aspiration performed

## **Ultrasound differential diagnosis(es):**

- Diffuse, mildly coarse hepatic parenchyma has a DDx which includes cholangiohepatitis, diffuse (benign or malignant) primary or metastatic hepatopathy
- Intra- and extrahepatic duct dilatation has a DDx which is most likely to be secondary to pancreatic abnormality and distal obstruction. Other DDx include congenital abnormality
- Multicystic pancreatic parenchyma: pancreatic pseudocyst, retention cysts, distended pancreatic ducts secondary to cholangiohepatitis, blind-ending ducts forming cysts, cystic pancreatic neoplasia

**Specialist vet diagnosis:** pancreatic pseudocysts, cholangiohepatitis with biliary and pancreatic duct distension

**Cyst cytology result:** Mild to moderate neutrophilic inflammation and suspected bacteria and markedly elevated amylase and lipase activity compatible with pancreatitis

## **Treatment Plan:**

- Antibiotics for infection
- Anti-inflammatory steroid tablets to help with liver function
- Ursodeoxycholic acid for dissolving gallstones
- Nutritional support for the liver
- Appetite stimulant
- Repeat blood tests and ultrasound in three weeks, unless condition deteriorates

## **Patient Treatment:**

- 1 week later, patient anorexia, nausea and vomiting, diarrhoea, became jaundiced and liver values increased further
- Surgery – two large orange-sized cysts found associated with right and left pancreas, extensive cystic change to pancreatic tissue, impossible to remove cysts completely due to close proximity to other vital structures, but two large cysts drained and packed with omentum (serves as a natural drain)
- Surgical biopsies of liver, pancreas and cyst wall taken



## **Patient Outcome**

### **Surgical biopsy results:**

- Liver biopsy showed normal liver
- Pancreatic biopsy thickened with collagen and is fibrosed, no evidence of neoplasia. Appearances associated with necrotising pancreatitis and fibrosis
- Pancreatic cyst consisted of thick bands of fibroplasia and histological diagnosis is one of pancreatic duct cysts, no evidence of neoplasia

Patient is now doing well, eating normally and active. Recent liver enzymes have stabilised.

Patient booked for a follow-up consultation and rescan in three weeks.

### **Interesting fact:**

Pancreatic pseudocysts are fluid-filled lesions caused by pancreatitis; they are surrounded by a capsule of fibrous tissue. The fluid within is composed of pancreatic secretions originating from a ruptured duct. Pancreatic pseudocysts have been reported in dogs and cats and as in this case, large pseudocysts can cause biliary obstruction.