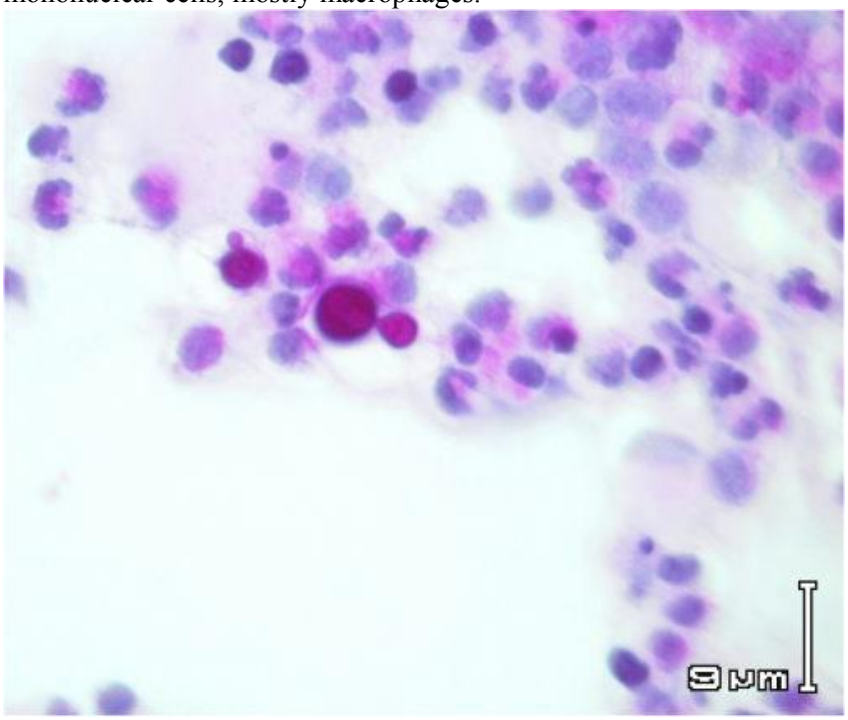
ASVP DIAGNOSTIC EXERCISE No. 23

Philippa McLaren Gribbles Group. 1868 Dandenong Rd, Clayton, Vic 3168, and
Emma Croser University of Melbourne, Princes Hwy, Werribee Vic 3030

History:
10 year old male neutered cat.
Abdominal effusion, jaundice and anaemia. Azotaemia with decreased urine specific gravity; increased liver enzymes. Kidneys slightly increased echogenicity on ultrasound.

Clinical Pathology:
Specimens presented: FNA from liver, kidney and peritoneal fluid.
Liver FNA: cholestasis, mild anisocytosis. Kidney FNA: non-diagnostic.
2mL of peritoneal fluid: yellow, cloudy; specific gravity 1.016; protein 16 g/L; RBC: 2400 $x10^6$/L
WBC: 3300 $x10^6$/L (the differential count was approximately 85% neutrophils, 8% lymphocytes and 7% large mononuclear cells, mostly macrophages.



Description of gross specimen
Abdomen: there is a large amount of peritoneal effusion present. The fluid is straw-coloured and clear. A thin film of fibrin is adherent to the diaphragmatic surface of the liver. Fibrin tags are also present on intestinal serosa. Multifocal to coalescing, bright yellow, slightly raised irregularly shaped plaques are present on serosal surfaces and are most marked on the surface of adipose tissue (interpreted as foci of saponification). The liver is pale brown and friable. The common bile duct is patent but appears dilated and tortuous. The kidneys are irregular in outline and pale.

Possible basic disease processes
A film of cells/and or fibrin appears to have been added to serosal surfaces, along with aa slight excess of pale yellow peritoneal fluid. So inflammation – low-grade and chronic – seems more likely than disseminated neoplasia.

Pathological diagnosis
Chronic low-grade peritonitis; possible disseminated neoplasia, or combination of both

Possible causes
of this change (in order of preference)?

Differentials for this modified transudate included feline infectious peritonitis (FIPV, FcoV), cholangiohepatopathy, lymphatic or vascular obstruction, neoplasia, bacterial peritonitis, toxoplasmosis.
The finding of low numbers of encapsulated round organisms on Diff Quik stain was confirmed by the highlighting of numerous occasionally budding yeasts with PAS stain.
A diagnosis of abdominal cryptococcosis was made.

Emma Croser's PM report:

There is a mild-moderate diffuse lymphoplasmacytic infiltrate within the lamina propria, which extends in areas into the submucosa. Scattered aggregations of yeast-like organisms with amphophilic round to crescent shaped, deeply PAS staining centres (diameter 5-10um) surrounded by a clear round space (up to a total diameter of approx 25um) are present in moderate numbers throughout the lamina propria and very occasionally in small numbers within the submucosa and serosa of the duodenum. Numerous yeast-like organisms are seen within the lamina propria and submucosa of the colon. Some are associated with a moderate diffuse mononuclear inflammatory infiltrates. There is diffuse dilation of duodenal crypts by proteinaceous material, which is often mixed with cells and cellular debris.

Mesenteric lymph nodes are severely oedematous; multifocal aggregations of yeast-like organisms are present within the subcapsular and paracortical sinuses.

Emma's Comments:

Intestinal cryptococcosis is unusual and I have found no other examples of peritoneal effusion with organisms evident on cytology in the literature. Other disease processes evident in this animal included a thyroid adenoma, severe multifocal chronic myocardial fibrosis and myofibre hypertrophy (hypertrophic cardiomyopathy, likely thyrotoxicosis), with pulmonary accumulation of haemosiderophages indicating chronic pulmonary congestion. There was also severe multifocal to coalescing interstitial nephritis with intramedullary amyloidosis, the cause of which was not identified.

Mild focal asymmetrical mononuclear myelencephalitis and meningitis with wallerian degeneration without evidence of cryptococcosis was also identified.

Any or all of these may have predisposed to secondary infection; much of the effusion may relate to cardiac disease rather than directly to the infectious process, although this is a subjective interpretation.