

# Latin Comparative Pathology Group

## The Latin Subdivision of the CL Davis Foundation

### Diagnostic Exercise

#### Answer sheet

Case #: 29 Month: February Year: 2013

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**History:** A 3-year-old female domestic shorthaired cat was presented for necropsy.

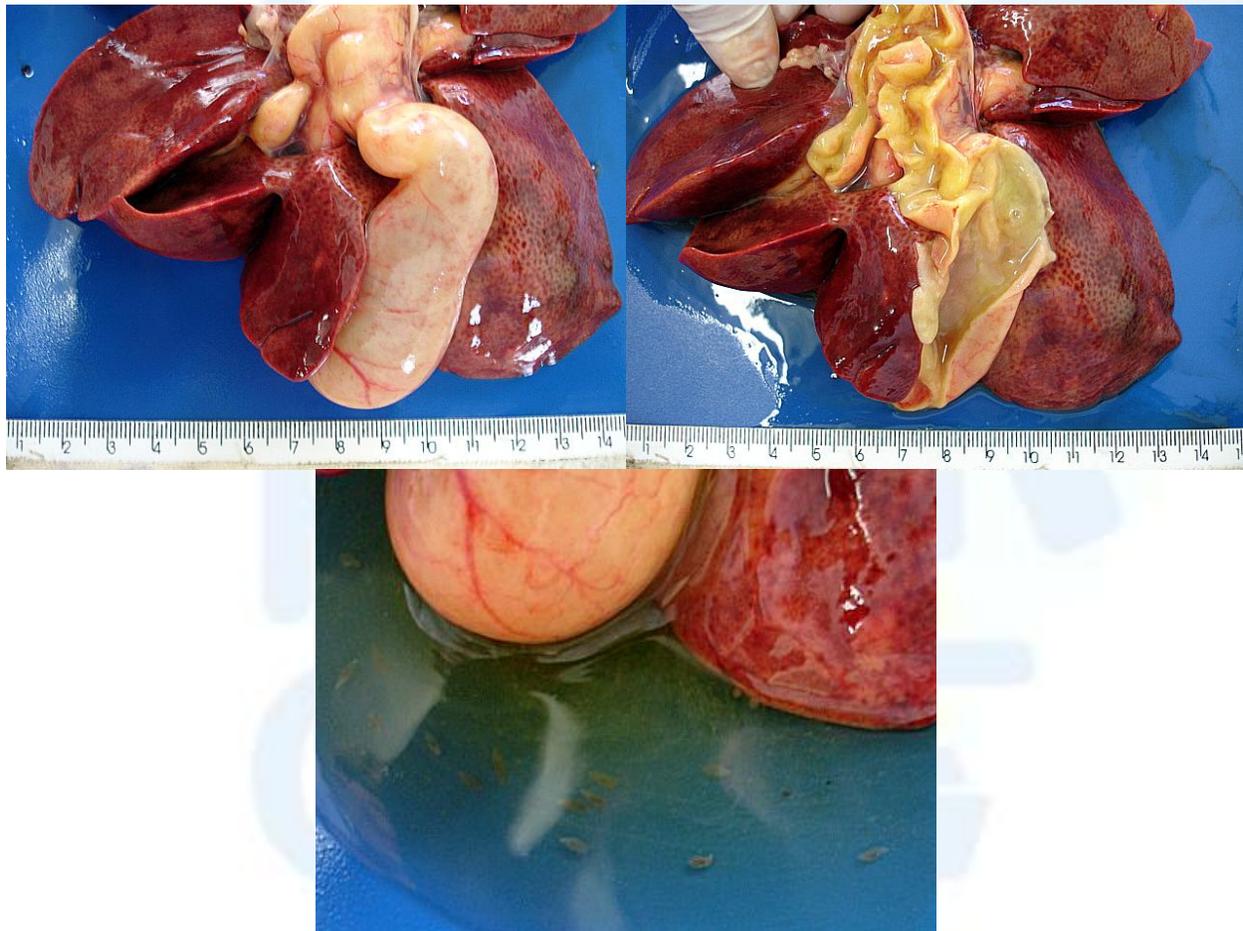
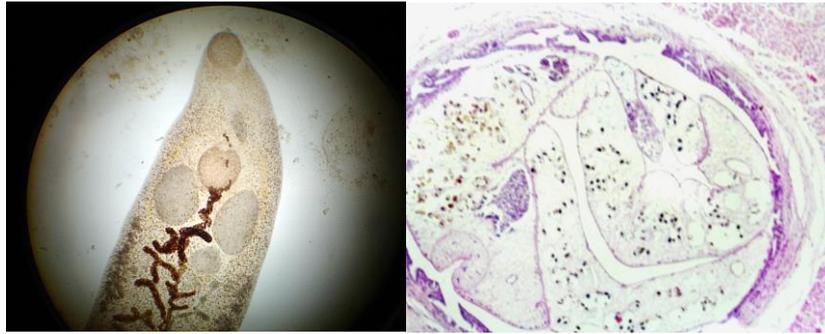


Figure 1 – Feline liver. Icterus, hepatomegaly, and cholestasis. Note marked gross dilatation and thickening of biliary tree. Numerous ellipsoid-shaped adult trematodes (*P. fastosum*) can be grossly appreciated within inspissated bile fluid.



**Figure 2** – Direct examination of parasite and histopathology of liver. Markedly dilated biliary duct, lined by arborizing hyperplastic epithelium, and supported/surrounded by abundant fibrous tissue (peribiliary fibrosis) and inflammatory cells.

### Follow up answers

1. Gross morphologic diagnoses:
  - a. Body as a whole: Icterus
  - b. Liver:
    - i. Hepatomegaly
    - ii. Gall bladder: Severe distension, cholestasis
2. Cause: *Platynosomum fastosum* (“liver fluke”)
3. Liver:
  - a. Lymphoplasmacytic cholangitis/pericholangitis and fibrosis with intraductal trematode parasites
  - b. Biliary epithelium hyperplasia and duct proliferation
  - c. Intrahepatic cholestasis
  - d. Periportal hepatocellular degeneration, atrophy, and loss

Biliary duct infection by *Platynosomum fastosum* in cats is one of the causes of biliary obstruction and nonsuppurative cholangiohepatitis as well as cystic hepatic disease. Infection usually causes mild or no clinical signs, depending on the severity of infestation, number of adult parasites, time of infection, and host reaction to the parasite. Notwithstanding, rare cases of severe disease have been reported following chronic heavy infection.

*Platynosomum fastosum* eggs are eliminated with the feces of infected cats (definitive host). In the environment they are ingested by the a snail (primary intermediate host), releasing miracidia inside the eggs. Approximately 28 days after ingestion, miracidia migrate to the ground through the mollusks' respiratory pore. In the environment, 30 days later, maturation into cercaria occurs, and cercaria will be ingested by arthropods (intermediate host II) such as beetles and turn into metacercariae. Infected beetles are then ingested by lizards and frogs (intermediate host III) and metacercarial cysts are formed in the bladder and biliary ducts of these animals. When an infected intermediate host III is ingested by cats, metacercariae migrate to biliary ducts and bladder of these animals, reaching the maturity between eight to 12 days and are then eliminated in feces as fertilized eggs, closing the cycle.

Pre-mortem diagnosis of platynosomiasis is based on history and clinical findings while confirmation can be achieved by the presence of typical trematode eggs in the feces. In clinical and diagnostic practices, cats with platynosomiasis are frequently suspect to have hemoparasite infection (e.g. *Mycoplasma haemofelis*), hepatic lipidosis, or hepatic neoplasia. Data on the prevalence of platynosomiasis in around the globe is scarce. The parasite cycle is complex and includes three intermediate hosts, but the disease must be considered as a differential diagnosis for feline jaundice.

## Reference

Carreira VS, Vieira RF, Machado GF, Luvizotto MC. 2008. Feline cholangitis/ cholangiohepatitis complex secondary to *Platynosomum fastosum* infection in a cat. *Rev Bras Parasitol Vet. Sep;17 Suppl 1:184-7.*

Please send your comments/questions to the whole LCPG list by hitting "reply to all".

A final document containing this material with answers and a brief discussion will be posted on the C. L. Davis website by the end of the current month ([http://www.cldavis.org/lcpg\\_english.html](http://www.cldavis.org/lcpg_english.html)).