



Abbey Veterinary Services

DIAGNOSTIC HISTOPATHOLOGY AND CYTOLOGY

Clinicopathological Newsletter

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CASE OF INTEREST

A Case of Chronic Hypertrophic Pyloric Gastropathy (Antral Pyloric Hypertrophy Syndrome) in a Dog.

By Richard Fox, Veterinary Pathologist

Case donated by Judith Hargreaves, Veterinary Pathologist.

A ten year old male shihtzu presented with a long history of chronic vomiting and moderate weight loss to a charitable veterinary hospital. An exploratory laparotomy was performed and the whole stomach was found to be dilated and the antrum and pylorus distended. On surgical exploration the mucosa was found to be markedly thickened and the pyloric lumen stenotic. Large mucosal folds were evident. A representative full thickness biopsy of the area was taken and submitted for histopathology.

Histological examination revealed a portion of gastric wall from the pyloric antrum. The mucosa was markedly thickened due to marked mucosal foveolar and glandular hyperplasia and cystic glandular dilatation within which there was marked mucin deposition. There was also a mild increase in the cellularity of the lamina propria. Cells include lymphocytes, plasma cells, neutrophils and eosinophils accompanied in some areas by fibrosis. The muscular tunic was unaltered.

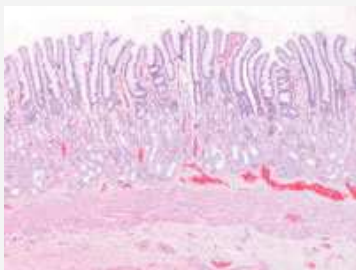


Figure 1. Histological section of normal canine pyloric mucosa (x5 obj.). HE Stain.

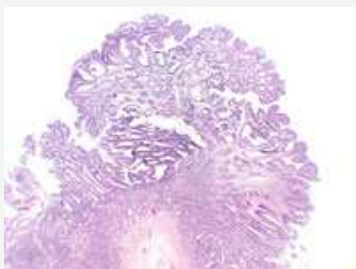


Figure 2. Histological section of part of the gastric biopsy specimen identifying mucosal architectural disruption due to tortuous foveae and glands. (x2.5 obj.). HE Stain.

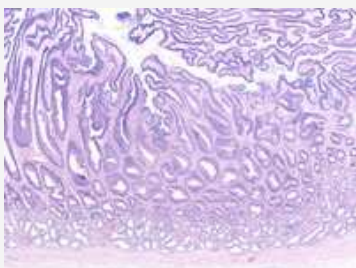


Figure 3. Histological section of part of the gastric biopsy specimen to show the hypertrophied glandular epithelium which are dark blue in colour due to large quantities of intracellular mucus (goblet cells). (x5 obj.). HE Stain.

This is a syndrome in dogs which is characterised by pyloric obstruction associated with mucosal hypertrophy, hypertrophy of the circular smooth muscle, or a combination of the two. Mucosal hypertrophy is the most common lesion and muscular hypertrophy is the least common although some degree of muscular hypertrophy is seen in approximately 50% of cases where mucosal hypertrophy is present.

The pathogenesis/cause is unknown and it is unclear as to whether the muscular hypertrophy is primary or secondary (i.e. in response to obstruction related to stenosis). Since mucosal muscular lesions can be present separately they may have independent causes. The mucosal hypertrophy has features similar to that in hypertrophic gastritis and therefore requires a distinction to be made when examining the tissue.

The cardinal presenting signs are chronic intermittent vomiting, with or without weight loss and gastric distension. Gross examination of the mucosa reveals large mucosal folds which tend to obstruct the pyloric canal. Marked hypertrophy of the glandular tissue is present and this may

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JOURNAL Articles(with e-links)

1. Antimicrobial associated diarrhoea in the horse. Part 1: Overview, pathogenesis and risk factors. B. C. McGorum¹ and R. S. Pirie. Equine Veterinary Education. Volume 21 Issue 11, Pages 610 - 616. [Link](#)

Antimicrobial associated diarrhoea (AAD) is the most commonly recognised adverse effect of antimicrobial treatment in horses, although its incidence is probably low given the frequency of antimicrobial administration. Clinical signs vary from transient self-limiting diarrhoea to rapidly fatal toxic enterocolitis. AAD prolongs the duration of hospitalisation, increases diagnostic and therapeutic costs, and was associated with a lower case survival rate than other types of acute diarrhoea in one study. Virtually all antimicrobials have been implicated in AAD, but some pose a greater risk than others.

2. Feline conjunctival melanoma: histopathological characteristics and clinical outcomes. Vet Ophthalmol. 2010 Vol 13, No 1, p43-46. [Link](#)

A report on the histopathology and clinical features of 21 cases of feline conjunctival melanoma. A total of 18 cases are from the COPLOW collection and three cases from Antech Diagnostics. Tabulation of the location of the tumor, pigmentation, cell shape, mitotic index and presence of multinucleated tumor cells was made. Surveys were sent to referring ophthalmologists to obtain further information about each case. The mean age of the cats was 12.4 years. A total of 11 cases were neutered males, six spayed females, and one each of intact female and male. Thirteen of the 21 cases were located on the bulbar conjunctiva, three on third eyelid only, three on palpebral conjunctiva. Sixteen tumors were pigmented while five were amelanotic. Seventeen of the cases consisted of round cells only while four cases were mixed populations of round and spindle cells. Fourteen of the cases contained multinucleated cells. The mitotic index ranged from 0 to 45 mitotic figures/10 HPF. Of the 13 cases with adequate follow-up information, four showed local recurrence while three reported metastasis. Eight cats had died at the time of the survey. Survival time post-diagnosis ranged from 0.5 to 36 months. Two cases had metastasized to the submandibular lymph nodes and in a third case, an abdominal mass was detected. Feline conjunctival melanoma is most frequently found on the bulbar conjunctiva, are mostly round cells and suggest that conjunctival melanoma in cats has a poorer long term prognosis than the same neoplasm in dogs.

3. Newkirk KM, Rohrbach BW. A retrospective study of eyelid tumors from 43 cats. Vet Pathol. 2009 Sep;46(5):916-27. [Link](#)

Submissions to the University of Tennessee pathology service from June 1999 to June 2008 were searched for feline cases of tumors involving the eyelids or nictitans. Forty-three tumors were identified. The average age at diagnosis was 10.4 years. Significantly more males than females had eyelid tumors. There were 12 squamous cell carcinomas (SCCs), 11 mast cell tumors (MCTs), 6 hemangiosarcomas (HSAs), 4 adenocarcinomas (ACAs), 3 peripheral nerve sheath tumors (PNSTs), 3

involve the foveolar or deeper glandular elements alone or in combination with cystic dilatation of deeper portions of the glands due to excess mucus. There is often a concomitant chronic inflammatory infiltrate in the mucosa (usually mixed inflammation) and occasionally submucosal erosions occur.

Clinically, dogs with severe vomiting can present with metabolic alkalosis and are frequently hyperkalaemia. Documented treatments include pyloromyotomy, surgical excision of the affected site followed by pyloroplasty or gastroduodenal anastomosis. Patients without immediate post-operative complications are reported to respond favourably to surgical intervention.

References:

1. Guilford WG. Antral Pyloric Hypertrophy Syndrome. In: Guilford WG, Center SA, Strombeck DR, Williams DA, Meyer DJ, eds. Strombeck's Small Animal Gastroenterology. 3rd ed. Philadelphia: WB Saunders, 1996:296-298.
2. Bellenger CR, Maddison JE, MacPherson GC, Ilkiw JE. Chronic hypertrophic pyloric gastropathy in 14 dogs. Aust Vet J. 1990 Sep;67(9):317-20.
3. C. C. Brown, D. C. Baker & I. K. Barker, Alimentary System. (Fifth ed.) In: K.V.F. Jubb, P.C. Kennedy and N. Palmer, Editors, Pathology of Domestic Animals, vol. 2, Academic Press, San Diego (1985), pp. 55.

lymphomas, 3 apocrine hidrocystomas (AHCs), and 2 hemangiomas. Cats with MCTs were significantly younger than cats with all other tumor types combined. In contrast, cats with SCCs were significantly older than cats with other tumor types. The HSAs and SCCs were significantly more likely than other tumors to occur in nonpigmented areas. The MCTs, HSAs, AHCs, and hemangiomas did not recur after surgical excision. In contrast, the lymphomas, ACAs, SCCs, and PNSTs frequently recurred and/or resulted in death or euthanasia of the cat. The SCCs were significantly more likely to recur than the MCTs. The average survival time for cats with SCCs was 7.4 months. Although eyelid MCTs have been reported in cats, the prevalence in this study is much higher than previously described.

LATEST NEWS

Horse Genome Published in Science

A Cornell veterinary immunologist and a mare from his research herd are at the center of what may turn out to be the most important breakthrough for horses since the advent of the horseshoe some 2,000 years ago. The completed map of the horse genome has already enabled advances in equine medicine, from the study of simple genetic traits to complex multi-gene conditions and the genetic regulation of development and healing. In addition, the horse genome holds the potential to shed light on human genetics and disease.

[External Link](#)

[Science Article](#)

SIDE STORY

H1N1 Infection confirmed in Dogs, Cats and Ferrets

"A 13-year old dog became ill after its owner was ill with confirmed 2009 H1N1 influenza. The dog was lethargic, coughing, not eating, and had a fever. X-rays showed evidence of pneumonia. The dog was treated with intravenous fluids, antibiotics, nebulization and other supportive care, and was discharged from the hospital after 48 hours of care. It is currently recovering."

"On November 24, the owner brought an 8 year old female cat to a veterinary clinic on the Oregon coast. The cat showed signs of severe weakness and pain. According to the owner, the cat had a history of allergies and sneezing with nasal discharge and chronic sinusitis. The cat was hypothermic, dehydrated, weak, and had nasal discharge and blue-tinged mucous membranes. X-rays showed severe pneumonia and fluid accumulation in the cat's chest."

"The first documented case of natural transmission of the H1N1 virus to a ferret was in a Portland, Oregon ferret. On October 5, 2009, a client brought a ferret to a Portland, Oregon veterinary hospital. The ferret had been exhibiting weakness followed by sneezing, coughing, and an elevated temperature. On October 9, 2009, the result was confirmed at the National Veterinary Services Laboratories."

Excerpt from the OVMA website - [Read more](#)

CYTOLOGY TIPS

Mammary Neoplasia

- Primary goal is to distinguish inflammatory lesions from neoplastic ones.
- Accuracy in distinguishing benign from malignant neoplasms is generally low.
- Samples yielding equivocal results, such as cyst fluid, non-septic inflammatory changes and those cytologically positive for neoplasia, but without sufficient criteria to establish malignancy, should be evaluated histologically.

OUR DETAILS

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