

Diagnosis of Gastrointestinal Stromal Tumor by Immunohistochemistry in a Dog

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Gastrointestinal stromal tumor (GIST) is mesenchymal tumor originated from submucosa of gastrointestinal tract. Most nonlymphatic mesenchymal tumors have been diagnosed as true smooth muscle tumors such as leiomyosarcoma (LMS) or leiomyoma (LM) according to morphologic features with H & E stains under light microscope. Recently, GIST, derived from interstitial cells of Cajal, can be distinguished from LMS and LM on the basis of expression of CD117(KIT) immunohistochemically. GIST has a different biological behavior and clinical course compared with LMS and LM, therefore definite diagnosis for GIST using immunohistochemistry is clinically important to predict the precise prognosis of the patient.

A 10 year-old, male, mixed breed dog was referred to Haemaru Animal Referral Hospital because of persistent diarrhea, anorexia and lethargy. Abdominal distension was found with physical examination and blood test revealed anemia, hypoalbuminemia and the marked increase of band neutrophils and ALKP. On abdominal radiography and ultrasonography, large mass from the transverse colon and large amount of ascites and free gas were found. The ascites was septic transudate with mixed bacteria that consisted with intestinal perforation. There was no metastatic lesion in other organs. This mass was diagnosed as adenocarcinoma, LMS and lymphosarcoma tentatively and surgical resection and histological examination were planned. However, according to client request, the patient was euthanized and the necopsy was performed. About 10 cm mass originated from cecum, ascending colon and transverse colon was adhesive to surrounding mesentery and the perforation and large amount of ascites were observed. GIST was suspected on histopathologic examination and confirmed according to CD 117 expression immunohistochemically.

GIST has the similar morphologic features with the true smooth muscle tumors, but it shows positive-reactive expression of CD 117 in immunohistochemistry. GIST has the different clinical behavior, metastatic characteristics and prognosis, so definite diagnosis with immunohistochemistry is important in practice.

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