

## A Case of Gastric Tumor in a Dog\*\*

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**Abstract:** In this case, a 9-year-old male Setter dog, admitted to the clinic with complaints of anorexia, asthenia, weight loosening, vomiting, polyuria and malena, was presented with a diagnosis of gastric tumor discovered at the autopsy. The dog was died while applied several treatments, the clinical and biochemical examinations. In the cross-sectional view of the stomach, a cauliflower-like mucosa was observed. A gastric tumor, rarely seen on the animals and has a poor prognosis and high morbidity rate, were evaluated by clinical, biochemical, and autopsy examinations.

**Keywords:** Dog, gastric tumor

### Bir Köpekte Gastrik Tümör Olgusu

**Özet:** Bu olguda iştahsızlık, halsizlik, zayıflama, kusma, poliüri, melena şikâyetleriyle kliniğe getirilen 9 yaşlı erkek, Setter ırkı bir köpeğin yapılan otopsisinde teşhis edilen gastrik tümör olgusu değerlendirildi. Köpek farklı klinik ve biyokimyasal muayene ve tedavi denemeleri devam ederken öldü. Mide dışarı alınarak kesit uygulandığında mukozasının karnabahar görünümünde olduğu görüldü. Veteriner hekimlik alanında sık rastlanılmayan, kötü prognoz, yüksek morbidite ile seyreden gastrik tümör olgusu klinik, biyokimyasal parametreler ve otopsi bulguları ile değerlendirildi.

**Anahtar Kelimeler:** Köpek, gastrik tümör

### Introduction

Gastric cancers are associated with the patient's lifestyle and nutritional status, genetic tendency, and individual sensitivity. Adenocarcinomas comprise 90% of all gastric tumors (Crew and Neugut, 2006). Obesity, adenocarcinoma of esophagus, gastritis, unbalanced and insufficient diet is predisposing factors of cancers. Food without salt and nitrite, radiation, anemia and stomach surgery to remove a foreign body are among the causes of gastric tumors (Crew and Neugut, 2006; Swan and Miner, 2006). Pulmonary metastasis occurs following the gastric cancer, of which the incidence and mortality rate are greatly increased in the last 70 years (Gamblin et al., 1995). The prevalence of gastric cancer and related mortality rates are in the first places in worldwide. Gastric tumors are divided into two groups: cardia and noncardia (Yuan et al., 2004). Tumors are cauliflower-like in appearance and have brittle structure. In addition, they have a tendency to bleed (Salt et al., 2005).

Gastric cancer is a disease that has a bad prognosis and high mortality rate, and causes pulmonary metastasis (Yuan et al., 2004). Antioxidants such as C, E and  $\beta$ -carotene have protective effects against to the gastric cancer (Crew and Neugut, 2006; Yuan et al., 2004). Acetylsalicylic acid and nonsteroid anti-inflammatory drugs cease the development of cancers (Coogan et al., 2000; Ristimaki et al., 1997). The aim of this study was to share a gastric

tumor case; rarely seen on the animals, has a poor prognosis and caused death in a dog; with our colleagues.

### Diagnosis of the Case

In this case, a 9-year-old male Setter dog, admitted to the clinic, was presented. In the medical history, complaints of anorexia, asthenia, weight loosening, vomiting, polyuria and malena was presented. In addition, the medical history revealed that even though several treatments were applied, no healing was observed. In the clinical examination of the dog, body temperature was 35.7 °C; heart rate was 48 in per minute; respiration rate was 16 in a minute; jaundiced eye, advanced dehydration, difficulty in respiration and shock were observed. Blood serum biochemical parameters were analyzed. The dog died while the clinical and biochemical examinations were in progress, and serous fluid in abdomen, intestinal hyperemia, bladder thickness and fullness in stomach were determined at the autopsy. In the cross-sectional view of the stomach, a cauliflower-like mucosa was observed (Figure 2). Sparse bubbly fluid in lungs and fluid filled sac around heart were detected. No metastases were found in other organs. In the laboratory examination of the stomach, histopathological diagnosis were analyzed; however, no results were obtained.

## Discussion

There are no symptoms in the early stages of gastric cancers, therefore, most of the patients are diagnosed at later stages and the mortality rate is higher (Tesensuren et al., 2006; Vardar et al., 2000). Gamblin et al. (1995) have reported the

observation of pulmonary metastases in all osteosarcoma cases. Some researchers have mentioned that the gastric tumor prognosis is poor and peritoneal metastasis is unavoidable (Tesensuren et al., 2006).

**Table 1.** Levels of biochemical parameters of the dog.

| Parameters     | Case Value | Reference Values |
|----------------|------------|------------------|
| ALB (g/l)      | 2.0        | 31-40            |
| ALP(IU/L)      | 11         | 20-156           |
| ALT ( IU /L)   | 5          | 21-102           |
| AMY ( IU /L)   | 4          | 20-156           |
| TBiL(mg/dl)    | 0          | 0-6,84           |
| BUN (mg/dl)    | 6,5        | 42.8-59.9        |
| Ca (mg/dl)     | 7.3        | 9.0-11.3         |
| TP (g/dl)      | 5.5        | 53-73            |
| KREA (mg/dl)   | 0.3        | 0.5-1.5          |
| Glikoz (mg/dl) | 64         | 65-118           |
| Na (mmol/l)    | 125        | 139-154          |
| K (mmol/l)     | 3.6        | 4.37-5.65        |

ALB: Albumin, ALP: Alkaline phosphatase, ALT: Alanine aminotransferase, AMY: Amiyase, TBiL: Total bilirubine BUN: Üre, Ca: Calsium, TP: Total pretein, KREA: Kreatinin, Na: Sodium, K: Potasium



**Figure 1.** View of the dog's stomach at the autopsy.



**Figure 2.** Cross-sectional view of the case's stomach.

In some studies, granular cell tumors (GCT), rarely neoplasm, have been observed in the internal organs. GCT occurs generally in the internal organs; however, it can occur in any place of the body. The prevalence of GCT is higher in women. Most of GCTs are benign and generally hard nodules with no clear boundaries (Chang and Chen, 1995; Çaylaklı et al., 2015). In contrary to the literature, the prognosis was poor and no metastases were observed in the case. Besides, autopsy findings, such as remodelling of tumor in stomach, tumor surrounding the stomach with no clear boundaries, are concordant with the literatures. In some studies, tumors have been observed in tongue, gum, pharynx, larynx, urinary tract, bladder, omentum, myocardium, articular muscle, and trachea of dogs (Gine et al., 2002; Vural et al., 2015). In the case, a cauliflower-like tumor was detected only in the stomach of the dog. In literature, for the biochemical examinations: increased enzyme activity, prominent increasing of creatine level, increasing of serum arginase activity parallel to creatine level, decreasing of total protein and albumin level have been detected (Meram and Tarakçioğlu, 2000). In the case, similar to the literature, decreasing of the levels of albumin, alkaline phosphatase, amiyase and urea were determined in the blood serum analyses.

In conclusion, if there are the anorexia, asthenia, weight loosening, vomiting, polyuria and malena, it is probably gastric cancer, for this reason the veterinary medicine may be use all clinical examinations and labarotuary technics. Because of the risc factor of the cancer is too raised both etiyoloji and incidence. This case will be aware in gastric cancer for veterinary medicine.

## References

- Chang SC, Chen SD, 1995: Case Report, Canine Primary Extragenital Transmissble Veneral Tumour and The Cytological Changes Before and After Vincristine Treatment, *Taiwan Journal of Vet. Med. and Aim. Husbandry*, 65, 3, 283-295.
- Coogan PF, Rosebberg L, Palmer JR, Strom BL, Zauber AG, Stolley PD, Shapiro S, 2000: Nonsteroidal Anti-inflammatory Drugs and Risk of Digestive Cancers at Sites Other Than The Large Bowel. *Cancer Epidemiol Biomarkers Prev*, 9, 119-123.
- Crew KD, Neugut AI, 2006: Epidemiology of Gastric Cancer. *World Gastroenterol*, 12, 3, 354-362.
- Çaylaklı F, Çakmak Ö, Büyüklü F, Bilezikçi B, Özlüoğlu LN, 2015: Dilde Granüler Hücreli Tümör: Bir Olgu Sunumu, [www.kbb-forum.net](http://www.kbb-forum.net). Erişim tarihi; 04.02.2015
- Gamblin RM, Strow RC, Powers BE, Park RD, Bunge MM, Withrow SJ, 1995: Primary Osteosarcoma Distal to the Antebrachio-carpal and Tarsocrural Joint in Nine Dogs. *Journal of the American Animal Hospital Association*, 31, 1, 86-91.
- Gine PJ, De Las MMJ, Lucena R, Millan Y, Novales M, 2002: Sketal Muscle Rhabdomyosarcomas in a Dog. *Vet Rec*, 151, 736-738.
- Meram İ, Ah S, Tarakçioğlu M, 2000: Kanserde Serum Arginaz Aktivitesi. *Van Tıp Dergisi*, 7, 1, 20-23.
- Ristimaki A, Honkanen N, Jankala H, Sipponen P, Harkonen M, 1997: Expression of Cyclooxygenase-2 in Human Gastric Carcinoma. *Cancer Res*, 57, 1276-1280.
- Salt S, Yanık K, Seyrek-İntaş D, Alper E, Mısırlıoğlu D, Özmen Ö, Seyrek-İntaş K, 2005: İki Köpekte Rastlanan Transmissble Veneral Tümör(TVT) Olgusunun Klinik, Radyografik, Ultrasonografik, Sintigrafik ve Histopatolojik Bulguları. *Veteriner Cerrahi Dergisi*, 11, 48-55.
- Swan R, Miner T, 2006: Current role of surgical Therapy in Gastric Cancer. *World Gastroenterol*, 12, 3, 372-379.
- Tesensuren T, Jun SM, Mian XH, 2006: Usefulness of Endoscopic Ultrasonomography in Preoperative TNM Staging of Gastric Cancer. *World Journal of Gastroenterology*, 12, 1, 43-47.
- Vardar E, Taşlı F, Karakoyunler Ö, Postacı H, Şahin T, Zengel B, Deneçli AG, 2000: Triple Tümör (Sigmoid Kolon, Böbrek ve Retroperiton): Olgu Sunumu. *Ege Tıp Dergisi*, 39, 1, 73-75.
- Vural SA, Sağlam M, Halgur M, Keleş H, 2015: Rhabdomyosarcoma in a Dog: Clinical and Pathological Findings. [www.priory.com/vet/rhabdomyosarcoma.htm](http://www.priory.com/vet/rhabdomyosarcoma.htm), Date; 21.02.2015
- Yuan JM, Ross RK, Gao YT, Qu YH, Chu XD, Yu MC, 2004: Prediagnostic Elves of Serum Micronutrients in Relation to Risk of Gastric Cancer in Shanghai . China, *Cancer Epidemiol Biomarkers Prev*, 13, 1772-1780.

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