

Case Report



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Intramucosal Early Gastric Cancer With Krukenberg Tumor : A Case Report

Selman ÇELEBİ¹, Aziz KARAOĞLU^{a2}, Hüsnu ÇELİK³, Emin Tamer ELKIRAN², Serdar YAZICI⁴,
Metin ÖZGEN⁵, İbrahim Hanifi ÖZERCAN⁶

¹Fırat Üniversitesi Tıp Fakültesi, İç Hastalıkları Anabilim Dalı-Gastroenteroloji Bilim Dalı,

²Fırat Üniversitesi Tıp Fakültesi, İç Hastalıkları Anabilim Dalı-Tıbbi Onkoloji Bilim Dalı,

³Fırat Üniversitesi Tıp Fakültesi, Kadın Hastalıkları ve Doğum Anabilim Dalı,

⁴SSK Bölge Hastanesi, Genel Cerrahi Bölümü,

⁵Fırat Üniversitesi Tıp Fakültesi, İç Hastalıkları Anabilim Dalı,

⁶Fırat Üniversitesi Tıp Fakültesi, Patoloji Anabilim Dalı, ELAZIĞ

ABSTRACT

Krukenberg tumor is classically defined as metastatic ovarian neoplasms from the gastrointestinal tract. The primary tumor is frequently from stomach but may also be from colon or biliary tract. Intramucosal early gastric cancer with Krukenberg tumor have been very rarely reported. We herein present a case of Krukenberg tumor that derivated intramucosal early gastric cancer. Endoscopic examination of the stomach should be carefully done at the Krukenberg cases. In addition there should be removed a lot of endoscopic biopsies ©2005, Fırat University, Medical School

Key words: Intramucosal early gastric cancer, Krukenberg tumor

ÖZET

İntramukozal Erken Mide Kanseri ile Birlikte Krukenberg Tümör: Olgu Sunumu

Krukenberg tümörleri, klasik olarak gastrointestinal kanaldan kaynaklanan metastatik over neoplazmları olarak tanımlanır. Primer tümör sıklıkla midededir ama kolon ve biliyer kanaldan da kaynaklanabilir. İntramukozal erken mide kanserinden kaynaklanan Krukenberg tümörleri oldukça nadir bildirilmiştir. Biz burada intramukozal erken mide kanserinden kaynaklanan bir Krukenberg olgusunu sunuyoruz. Krukenberg tümörlü olgularda endoskopik inceleme dikkatle yapılmalı ve çok sayıda endoskopik biyopsiler alınmalıdır. ©2005, Fırat Üniversitesi, Tıp Fakültesi

Anahtar kelimeler: İntramukozal erken mide kanseri, Krukenberg tümör

Ovaries are common metastatic sites of mucin producing carcinoma, originating especially from primary gastrointestinal tract and breast carcinoma. Krukenberg tumor is classically defined as metastatic ovarian neoplasms from primary lesions in the gastrointestinal tract, in particular from carcinomas of the stomach. Histopathologic features of Krukenberg tumors appears a prominent stroma and a mucus-producing carcinoma is present with numerous signet-ring cells (1-5). The primary tumor is frequently from stomach but may also be from colon or biliary tract. But primary tumor couldn't find at least 10 % of cases (6).

Early gastric cancer (EGC) was defined as a lesion confined to the mucosa or submucosa of the stomach regardless of lymph node involvement (7). The diagnosis of EGC is the commonest gastric malignancy in Japan but a relatively rare diagnosis in Europe and USA. The incidence of

EGC has increased due to the improvement of diagnostic technics such as endoscopic methods. Everett et al. (8)

reported that the clinicopathologic features of the EGC are remarkably similar between Japan and the western countries. We herein present a case of Krukenberg tumor with intramucosal gastric cancer.

CASE

A 50 year-old, post-menopausal female patient was presented to our hospital with abdominal pain and swelling in October 2003. She had 12 gravida, and given birth to 12 alive babies.

She had no history of abortus and no history of endometrial curettage. She had also no family history of malignancy. Laboratory studies were revealed only mild elevation erythrocyte sedimentation rate (66 mm/h) and carbohydrate antigen (CA) 125 levels (273 U/mL, cut off values 35 U/ml). The carcinoembryonic antigen (CEA), CA 19-9, alpha-fetoprotein (AFP), CA 15-3 were all within normal limits. And there are no anemia and abnormal hepatic enzyme levels.

^a Corresponding Address: Dr. Aziz Karaoğlu, Fırat Üniversitesi Tıp Fakültesi Tıbbi Onkoloji Bilim Dalı, 23119 ELAZIĞ
Tel: 0 424 2333555/2466 e-mail: azizk6@yahoo.com

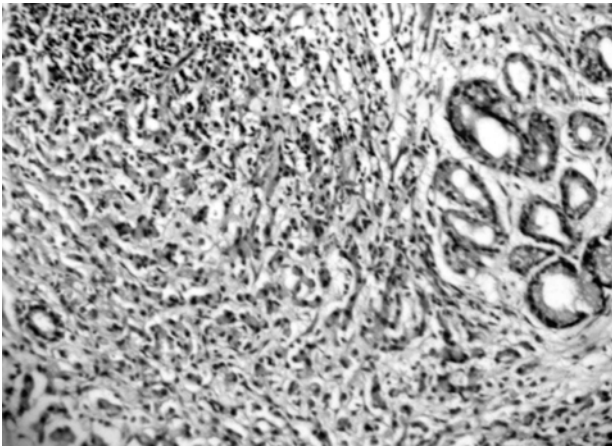


Figure 1. Photomicrography shows signet ring cells in the ovary (Hematoxylen-Eosin stain; magnification x 400)

Transvaginal ultrasonography revealed a cystic-solid mass in the right ovary, measuring in 94x50 mm diameter and widely ascites. Suspected ovarian cancer, optimal debulking with bilateral salpingo-oophorectomy, omentectomy, appendectomy, and pelvic-paraaortic lymphadenectomy were performed on 3 December, 2003. At the post-surgical histopathologic examination the right ovary measured 10x8x4 cm in size and there was desmoplastic stroma with patchy mixoid degeneration and signet-ring cancer cells (Figure 1,2).

Metastasis was found in 45 lymph nodes from 75 lymph nodes. There was a 3000 cc ascites but cytology was not negative. In order to find out the primary site, further laboratory tests were performed after the operation. Esofagogastroduodenoscopy revealed one erosion (1x1 cm), on lesser curvatura in distal corpus and a few erosion (3-4 mm) in the antrum. In the endoscopic biopsy specimens, signet-ring cell carcinoma was demonstrated in the mucosa (Figure 2).

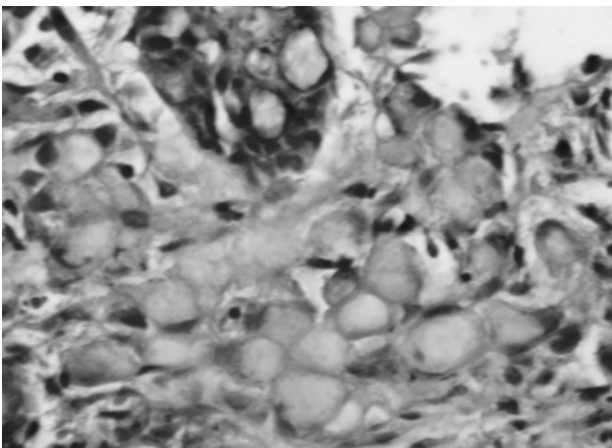


Figure 2. Signet ring cells with mucus stain in the ovary (Periodic Acid Schiff (PAS) and Alcian Blue stain ;magnification x 400)

Total colonoscopy showed no abnormal findings. There was no evidence of hepatic metastasis or lymph node metastasis from findings of abdominal ultrasonography and computed tomography. And total gastrectomy and regional lymph node dissection was performed on February 19, 2004. Post-operative pathologic examination has revealed no tumor in serial sections of the total stomach specimen. Metastasis was

found one lymph node of 10 lymph node (Figure 3). Thus, the patient was diagnosed as intramucosal early gastric carcinoma, signet-ring cell type, T0N1H0P0M1, stage IV. Post-operative chemotherapy with platinum and infusional 5-Fluorouracil for 5 day, every 28 day course was initiated in March 2004. The patient was died on May, 2004.

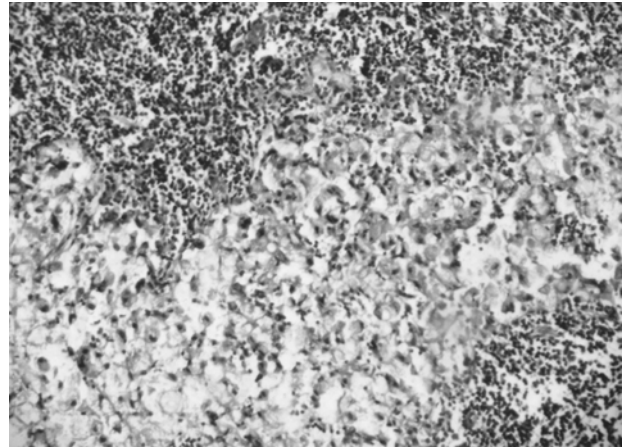


Figure 3. Photomicrography shows signet-ring cell in the mucosa of the lesser curvatura from endoscopic biopsy specimen (Hematoxylen-Eosin stain, magnification x 400)

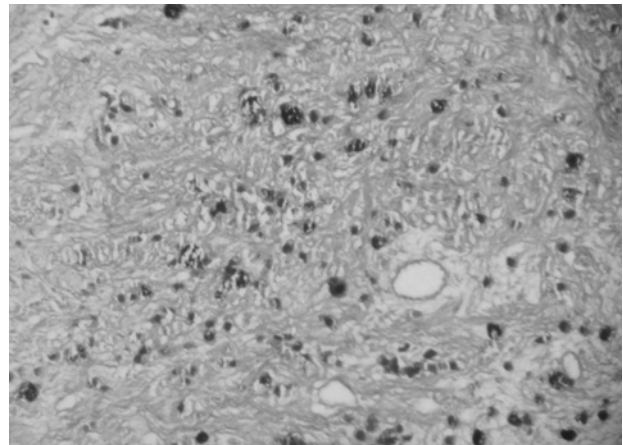


Figure 4. Signet ring cells in the gastric lymph node (Hematoxylen-Eosin stain, magnification x 100).

DISCUSSION

Krukenberg tumor was described as a fibromatous mucin producing tumor in 1896 from F. Krukenberg. Later, it was well established that an neoplasm composed of signet-ring cell carcinoma and diffuse stromal proliferation. Krukenberg tumors generally rare tumors in western countries and accounts for 3-4 % metastatic ovarian tumors (2). However, the incidence of Krukenberg tumor in Japan rather high because of the high incidence of gastric cancer and accounts for 29 % of metastatic ovarian cancers (3,4). The primary tumor is frequently stomach in Krukenberg tumors. The rate of stomach as the primary site of Krukenberg tumor range from 70 % and 94 % (3-5). Tulunay et al (9) reported that the rate of stomach as the primary site of Krukenberg was % 63 in Turkey. Although, in some cases, a primary tumor couldn't find for all imaging techniques and endoscopic tests.

In our case, the primary site of Krukenberg tumor was detected intramucosal EGC with endoscopic biopsies before gastric surgery. Tumor was shown intramucosal signet-ring cell carcinoma. Lymphatic invasion and vacular invasion was detected the endoscopic biopsy specimens. But we didn't find any tumoral area at the serial examinations from total gastrectomy material. The cause of this situation could have removed intramucosal primary tumor during two endoscopic examination with biopsies. It is another probability that we couldn't have find to the primary tumor area because the primary tumor to very smaller size after endoscopic biopsy working. Young ve Scully (6) emphasized, it can be the existence of very small primary gastric tumors with Krukenberg tumor and they reported that one case needed the examination of 200 blocks to detect the primary gastric tumor. We didn't further pathologic examination because we detected the metastasis in the prepyloric one lymph node.

Krukenberg tumors are more common in premenopausal women than in postmenopausal women and the average age at diagnosis is to be 40 to 50 years (4,5,10). Krukenberg tumors are usually bilateral and unilateral tumors are very rare. In our case, Krukenberg tumor was unilateral localization in the left ovary. In the Krukenberg tumors, the metastasis from stomach to the ovaries can be three possible route: peritoneal spread,

lymphatic metastasis, and hematogenous metastasis (11). For EGCs, peritoneal spread to the ovary with seeding is unlikely because the tumor is completely confined to the gastric wall. So, there can be the most possible spread route is via local lymphatic metastasis. The incidence and extent of lymph node metastasis from EGC is closely related to the depth of tumor invasion (12). The incidence of metastasis to regional gastric nodes from submucosal cancers are seen 20 % while only 3 % or less metastasize from mucosal cancers (13). In addition to, gastric mucosa is markedly decreased in the patients of severe atrophic gastritis. So, lymphatic capillaries may be found very near the surface epithelium. In our case we find diffuse atrophic gastritis and cancer cells may have enter the lymphatic capillaries from atrophic mucosal surface (14).

We experienced a rare case of unilateral Krukenberg tumor derived from gastric mucosal carcinoma. The intramucosal primary lesion was demonstrated with endoscopic examination but it was not find in operation specimens although two serial sciticon examination, and regional gastric lymph node metastasis was shown. In our case suggested that Krukenberg tumors may be derivated early gastric cancers and endoscopic investigation of the stomach should be carefully done. In addition there should be removed a lot of endoscopic biopsies.

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