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# A rare case Of gastric cancer: Isolated vaginal metastasis



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## A B S T R A C T

Gastric cancer is one of the most common cancers worldwide. The vast majority of gastric cancer is adenocarcinoma histologically. The majority of gastric cancer patients show distant metastasis at the time of diagnosis. Because they are diagnosed with metastatic disease, most often they are inoperable ovarian metastasis is a well-known metastasis of gastric cancer. Vaginal metastasis happens by the local spreading of ovarian or uterine metastasis. This study reports a gastric cancer case that presented with isolated vaginal metastasis in the absence of ovarian or uterine metastasis

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## A R T I C L E I N F O

**Keywords:** Gastric cancer; Vagina; Metastasis

## Introduction

Although the frequency of gastric cancer and gastric cancer-related deaths have decreased in recent years, due to the high number of malignant proximal gastric lesions, it is still one of the most leading causes of cancer-related deaths<sup>1</sup> and remains a major health problem worldwide. It is the fourth most common cancer in the world and second most common cause of cancer deaths after lung cancer<sup>2</sup>. Ovarian metastasis of gastric cancer is called a Krukenberg tu-

\* The authors declare that there is no conflict of interest regarding the publication of this paper.

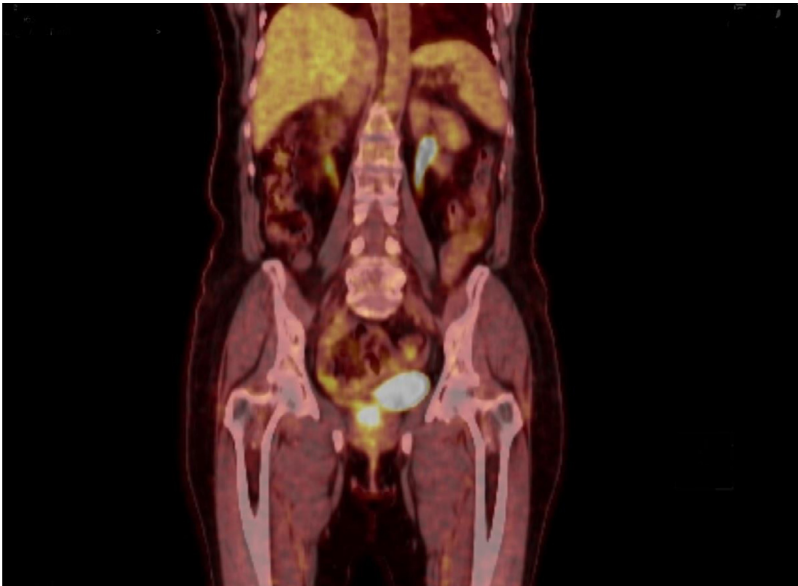
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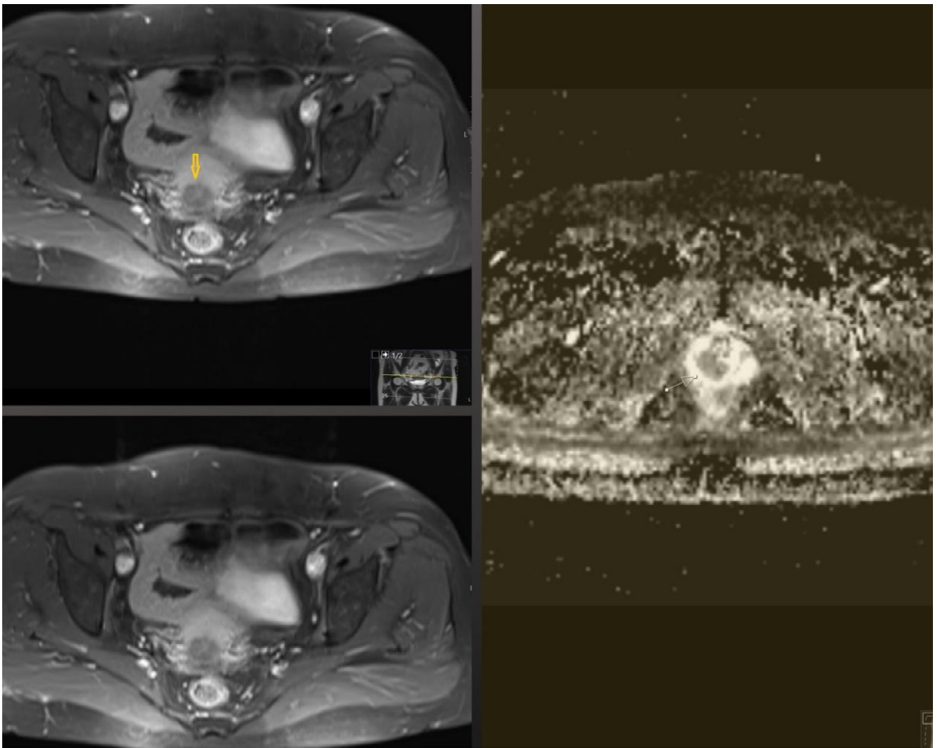
mor. Krukenberg tumors make up 1%-2% of all ovarian cancers<sup>3</sup>. The most common source of these tumors is gastric (70%). Following gastric cancer; colon, appendix, and breast cancer, respectively, are the most common causes. Gastric cancer occurs at all ages but most commonly it occurs at around about 45 years of age<sup>4</sup>. Distant metastasis of gastric cancer to the vagina has not been reported. Metastatic involvement of vagina is most likely an extension of ovarian or uterine metastasis. Isolated vaginal involvement of gastric cancer has not yet been reported<sup>5</sup>. In the present case report, the patient was operated on after neoadjuvant chemotherapy. The patient was followed up every 3 months for one-and-a-half year after the operation. The patient had a history of vaginal bleeding for several months. A mass lesion, 2-3 cm in diameter was detected on the side of the vaginal wall at gynecological examination. A punch biopsy was taken. Pathological examination of the vaginal mass was reported as adenocarcinoma and, it was interpreted as a metastatic lesion from the gastrointestinal tract. The present case is important because it is the first case in literature to report primary vaginal metastasis in the absence of ovarian or uterine metastasis.

### Case report

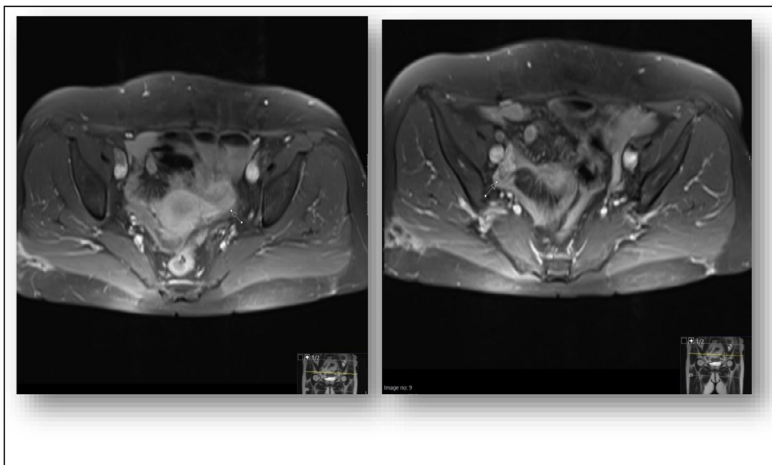
A 55-year-old female patient was admitted to the hospital with gastric bleeding. The result of a biopsy was performed following hematemesis demonstrated low differentiated adenocarcinoma. EOX (epirubusin + oxaliplatin + capecitabine) chemotherapy protocol was given to the patient as neoadjuvant chemotherapy. She was operated. Pathological evaluation of postoperative material demonstrated the presence of moderately differentiated adenocarcinoma following neoadjuvant chemotherapy. It was staged as pT3N0Mx. The patient was followed up every 3 months until the presentation of vaginal bleeding. The patient had a history of vaginal bleeding for several months. A mass lesion, 2-3 cm in diameter, was detected on the side of the vaginal wall at gynecological examination. Pathology of the vaginal mass was reported as adenocarcinoma, and it was interpreted as a metastasis from the gastrointestinal tract. Positron emission tomography (PET/CT) examination was then performed. PET/CT showed there was no



**Fig. 1.** PET/CT image of vaginal metastasis.



**Fig. 2.** Magnetic resonance imaging (MRI) of vaginal metastasis.



**Fig. 3.** Magnetic resonance imaging (MRI) of ovary.

intra-abdominal FDG uptake. The only detectable FDG uptake present was that of the vaginal mass. There were no reported abnormalities in regards to the ovaries and uterus in the PET/CT evaluation.

PET / CT and MR images of vaginal metastasis are shown in [Figs 1-3](#).

An operation was planned primarily because the patient only had a vaginal metastasis. The patient was operated on with negative surgical margins. She was closely followed up after the operation. At the 5th postoperative month, metastases were once again detected on the patient's vaginal and bladder wall. The FOLFOX (fluorouracil + oxaliplatin + leukoverin) regimen was initiated.

Ovarian metastasis is well-known clinical entity in gastric cancer patients. In previous publications, vaginal metastases were reported in gastric cancer patients with ovarian and uterine metastases. However, no case of vaginal metastasis was reported without ovarian and uterine metastasis.<sup>5</sup> This case is important because it is the first publication in the literature.

## Discussion

Ovarian metastasis is not common in gastric cancer. Although it is a well-known clinical entity, how gastric cancer metastasizes to the ovaries has not been well understood for a long time. That metastases are mostly caused by retrograde lymphatic spread has been found in more recent years.<sup>6</sup> Gastric cancer rarely metastasizes to the peritoneum by vascular spread.<sup>6,7</sup> The Krukenberg tumor has a poor prognosis. The average life expectancy of a patient with a Krukenberg tumor is 2 years.<sup>8</sup> Previously, a case of cervix uteri metastases of gastric adenocarcinoma had been reported.<sup>9</sup> The case report is an original study because vaginal metastasis without ovarian and uterine metastasis of gastric cancer previously has never been reported

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