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Case Report

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Isolated seminal vesicle metastasis from gastric adenocarcinoma: First case report

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ABSTRACT

A 49-year-old Turkish man underwent subtotal gastrectomy for gastric cancer in February 2010. The cancer was staged as pT4aN0M0R0. The patient received adjuvant chemoradiotherapy per the Intergroup study 0116. Regular follow-up abdominopelvic computed tomography revealed a contrast-enhancing right seminal vesicle lesion 35 months after gastric surgery. Staging evaluation using (18) F-fluorodeoxyglucose positron emission tomography/computed tomography revealed isolated seminal vesicle fluorodeoxyglucose uptake. A right seminal vesiculectomy was then performed. Histologic examination of the seminal vesicle specimen revealed that the sample was similar to the original gastric adenocarcinoma. The tumor board recommended external beam radiotherapy due to the close surgical margin, but the patient refused treatment. Five months after right seminal vesiculectomy, tumor recurrence was found. Tumor excision and left seminal vesiculectomy were performed, and 45 Gy external beam radiotherapy was delivered to the region of recurrence in February 2014. As of January 2016, the patient has had no complaints since the last radiation treatment. In conclusion, we report the first case of isolated seminal vesicle metastasis from gastric adenocarcinoma. Therefore, seminal vesicles should be considered a potential recurrence site in primary gastric adenocarcinoma. The combination of surgery and radiation (45 Gy dose) without chemotherapy appeared to be successful in treating this gastric adenocarcinoma metastasis.

1. Introduction

Gastric cancer (GC) is the fifth most common malignancy and the third leading cause of cancer mortality in both sexes worldwide (Ferlay et al., 2015). Moreover, GC is the second most common gastrointestinal malignancy and is responsible for most gastrointestinal cancer-related deaths worldwide (Morganti et al., 2013). GC usually metastasizes to the liver, lungs, abdominal lymph nodes, bones, and the peritoneum (András et al., 2013). Herein, we report the first case of isolated seminal vesicle (SV) metastasis in a patient with GC after a curative subtotal gastrectomy.

2. Case report

A 49-year-old Turkish man presented to his doctor with gastric complaints in January 2010. Gastroscopy

revealed an ulcer with a diameter of 5 cm at the gastric angulus. A biopsy revealed adenocarcinoma of the stomach. The patient was referred to the Ondokuz Mayis University Medical Faculty Hospital. Staging work-ups, including a complete blood count, comprehensive biochemistry profile, chest computed tomography (CT), and abdomino-pelvic CT, indicated no evidence of metastasis. The patient underwent distal subtotal gastrectomy with lymph node dissection in February 2010. During surgical exploration, a 5×5 cm tumoral mass at the gastric angulus and a suspicious nodular structure in the left lobe of the liver, which was destroyed after palpation, were found. In addition, the tumor had invaded the serosa, and there were no peritoneal implants. Histopathologic examination revealed grade 2 gastric adenocarcinoma (Fig. 1), approximately 45×35 mm in size, and tumor penetration of the serosa (pT4a) with marked perineural and lymphovascular invasion. There were no metastases in any of the 12 removed lymph nodes (pN0). Proximal and distal surgical margins were not involved (R0).

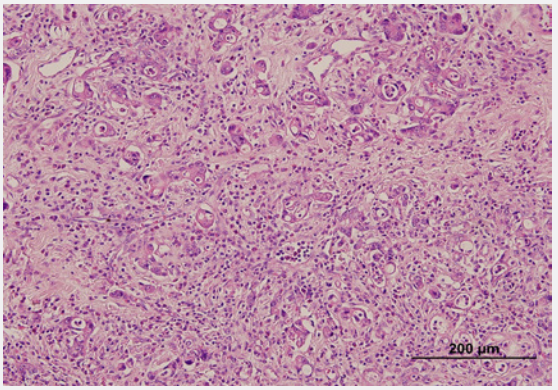

Fig. 1. Hematoxylin-eosin staining (×20) reveals atypical epithelial cells of gastric adenocarcinoma.

Due to suspicious operative findings, positron emission tomography/computed tomography (PET/CT) imaging was performed, and no metastases were detected. The patient was staged as T4aN0M0R0 according to the American Joint Committee on Cancer (AJCC) TNM staging classification for carcinoma of the stomach 7th edition (2010). He was treated with concurrent chemoradiotherapy per the Intergroup study 0116 (Macdonald et al., 2001) until August 2010. After treatment completion, the patient's follow-up was planned at 3-month intervals for the first 2 years, biannually for 2-5 years, and then annually thereafter. Follow-up evaluation for this patient consisted of a physical examination, complete blood count, and comprehensive biochemistry profile at each control period. A chest radiograph was performed once every 6 months. Upper gastrointestinal endoscopy and radiologic imaging were performed as clinically indicated or annually.

A regular follow-up abdominopelvic CT in January 2013 revealed a contrast enhancing right SV nodular lesion without any specific patient complaints. Pelvic magnetic resonance imaging (MRI) also revealed similar findings (Fig. 2).

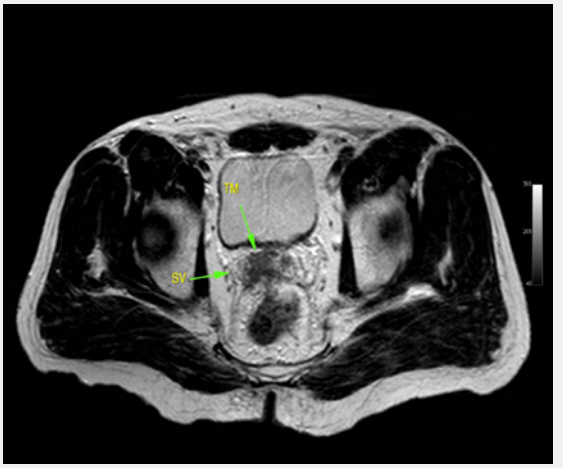

Fig. 2. MRI (T2-weighted) reveals a tumor in the right seminal vesicle with an irregular edge (shown with arrows: TM = tumor, SV = seminal vesicle).

Lastly, PET/CT was performed, and minimal FDG uptake (maximum standard uptake value: 4.05) was seen in the right SV (Fig. 3).

The patient's laboratory tests, including total PSA

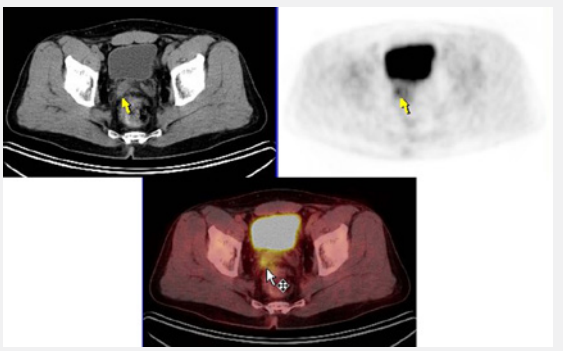

Fig. 3. PET/CT images of right seminal vesicle metastasis.

(0.6 ng/ml), were normal. A transrectal ultrasound-guided biopsy was performed, and histologic examination revealed adenocarcinoma infiltration. A right seminal vesiculectomy was then performed in June 2013. Histopathologic examination revealed that the maximum tumor diameter was 35 mm, and the tumor was less than 1 mm from the painted surgical margin. Immunohistochemical tests revealed that the tumor cells were cytokeratin 20 positive, CDX2 positive, cytokeratin 7 negative, and PSA negative. Intracytoplasmic and luminal muscin presence were revealed using PAS Alcian blue (Fig. 4).

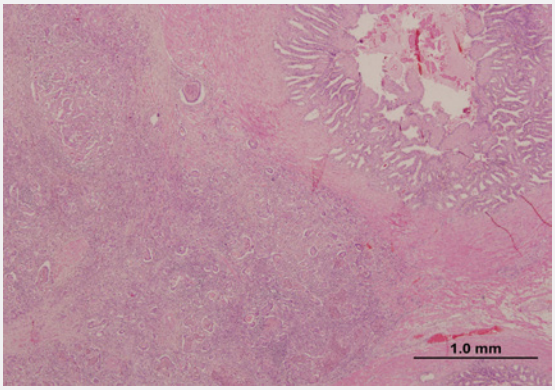

Fig. 4. Hematoxylin-eosin staining (×4) reveals adenocarcinoma infiltration of the seminal vesicle.

Histopathologic characteristics suggested that the tumor had resulted from metastasis of the initial gastrointestinal system adenocarcinoma. Ultimately, the patient was diagnosed with SV metastasis from gastric adenocarcinoma based on medical history and immunohistochemical staining results. The multidisciplinary tumor board recommended adjuvant radiotherapy due to the close surgical margin, but the patient refused and was followed over 3-month intervals. An abdominopelvic MRI was performed in November 2013, and it revealed tumor recurrence between the prostate, bladder posterior wall, rectum anterior wall, and left SV in the right seminal vesiculectomy region. PET/CT was performed in December 2013 and only one hypermetabolic focus in the right seminal vesiculectomy region invading the rectum anterior wall was seen (Fig. 5).

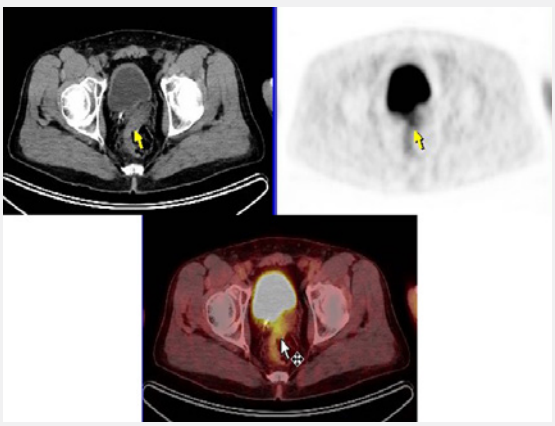

Fig. 5. PET/CT images reveals tumor recurrence at the right seminal vesiculectomy region.

The multidisciplinary tumor board recommended radical surgery involving the rectum, prostate, and SV, but the patient refused due to infertility and impotence risk. In February 2014, the patient consented to a less risky surgery that involved tumor excision and left seminal vesiculectomy. After this decision, an abdominopelvic MRI was performed that revealed local progression to the right seminal vesiculectomy region. Left seminal vesiculectomy and tumor excision were performed in February 2014. Histopathologic examination revealed adenocarcinoma infiltration of the left SV and a positive surgical margin. External beam radiation therapy (EBRT) to the recurrence region was recommended due to disease recurrence and a positive surgical margin. Finally, the patient was treated with 45 Gy EBRT. Chemotherapy was not implemented due to lack of additional metastasis. Regular follow-ups were performed. The patient was alive without further complaints when this report was written in January 2016.

3. Discussion

The mechanism of spread from GC to the SVs is uncertain. The SV is often invaded by locally advanced prostate cancer (Egevad et al., 2007). Secondary involvement of the SV is more common than primary SV cancer (Lee et al., 2007). Secondary malignancy of the SV from non-adjacent sites is extremely rare. In 1956, Dalgaard and Giertson established the following criteria for the diagnosis of primary SV adenocarcinoma: 1) the tumor should be a microscopically verified carcinoma, localized exclusively or mainly to the SV; 2) the presence of other simultaneous primary carcinoma should be excluded; and 3) the tumor should preferably resemble the architecture of the non-neoplastic SV (Gong et al., 2011).

In the case presented here, 1) staging evaluations did not show any lymphatic, peritoneal, or distant metastasis other than SV in 2013; 2) histopathologically, the removed SV tumor (2013) was similar to the original gastric adenocarcinoma (2010). Therefore, hematogenous metastasis appears to be the most likely pathway for SV tumor occurrence.

In conclusion, the SV should be considered a recurrence site in primary gastric adenocarcinoma patients. The differential diagnosis between metastasis and primary SV carcinoma is important for oncologic treatment. The combination of surgery and radiation (45 Gy dose) without chemotherapy seemed to be successful in treating this case of gastric adenocarcinoma SV metastasis.

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