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LETTER TO THE EDITOR

Isolated Spleen Recurrence of Early Stage Low-grade Endometrial Cancer Detected by Exaggerated CA 125 Elevation on Follow-up

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Dear Editor,

Recurrence of early-stage endometrial cancer is very rare. Five-year survival rate for patients with no adverse risk factors is 92.7%.[1] Since the proapoptotic environment of spleen, metastases are uncommon. Mechanical, vascular, anti-angiogenic factors, and immunological protection are the hypothesis explaining the rarity of splenic metastases. The prevalence of metastases to spleen is reported to be 2.3% and 7.1%. According to an autopsy series of 7165 cancer patients, half of those with spleen metastases had also metastases in at least five other regions. Isolated spleen metastasis is less frequent than multiple metastases and gynecological cancers tend to metastase solitary.[2–4] Hereby, we present a case of Stage IA Grade 2 endometrial cancer diagnosed incidentally with isolated exaggerated Ca125 (cancer antigen 125) elevation on follow-up.

A 77-year-old woman with a diagnosis of Stage IA Grade 2 endometrial cancer presented to outpatient clinic for regular follow-up. On her history, she underwent TAH+BSO+BPLND (total abdominal hysterectomy+bilateral salpingo-oophorectomy+bilateral pelvic lymph node dissection) on October 2019. She had no adjuvant therapy. Her serum Ca125 (cancer antigen 125) value was 36 U/mL (reference: 0–35) at initial diagnosis. The patient was well without evidence of disease recurrence for nearly three and a half years. There were no signs of recurrence in her physical and pelvic examination. Requested serum Ca125 value was 855 U/mL. Her tumor marker evaluation was repeated to eliminate the possibility of laboratory error. Her Ca125, Ca19.9, and Ca 15.3 values were 812 U/mL, 567 U/mL (reference:0–27), and 44 U/mL (reference: 0–27), respectively. An abdominopelvic computed tomography (CT) scan was performed to reveal a recurrence or another reason that could increase Ca125. CT scan showed a 77×60 mm lobulated, central necrotic splenic mass. The detected mass was suspicious in terms of metastasis (Fig. 1). Positron emission tomography/CT (PET/CT) scan demonstrated an isolated splenic mass with elevated FDG activity (SUV_{max}, 14) (Fig. 2). Splenectomy was performed and the abdominal cavity was free of disease. Her recovery was uneventful and her Ca 125 returned to reference value 1 month after the operation. On pathological report, endometrial carcinoma metastasis of spleen was confirmed (Figs. 3, 4). The patient was referred for chemotherapy.

To the best of our knowledge, our report is the first isolated spleen recurrence of endometrial cancer presented with exaggerated Ca 125 and Ca 19.9 elevation on regular follow-up.

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Fig. 1. A 77×60 mm in size lobulated, central necrotic splenic mass on CT scan.
CT: Computed tomography.

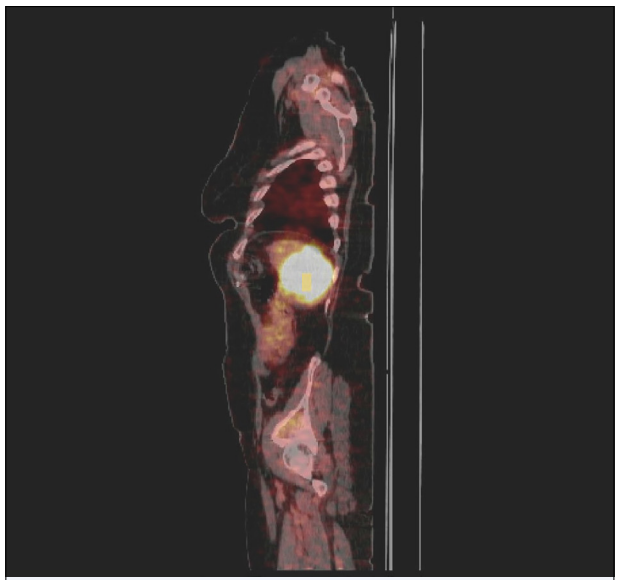

Fig. 2. A PET/CT scan demonstrating a mass with elevated FDG uptake.
PET/CT: Positron emission tomography computed tomography; FDG: Fluoro 2 deoxy dglucose.

A search on PUBMED Central and Google Scholar with MeSH (Medical Subject Headings) terms of "endometrial cancer" "spleen metastasis" and "recurrence" was performed. High-grade (Grade 3) or advanced-stage (Stage III–IV) cases, cases without initial staging, with multiple metastatic sites, and with non-solitary spleen metastasis were excluded from the study. We found only ten cases of spleen recurrence/metastasis of early stage low-grade endometrial cancer (Table 1).[5–14]

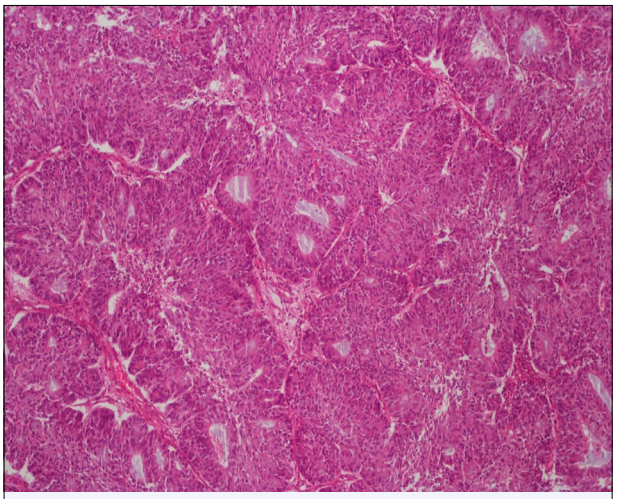

Fig. 3. Microscopic appearence of endometrial carcinoma in spleen stained with hematoxylin and eosin.

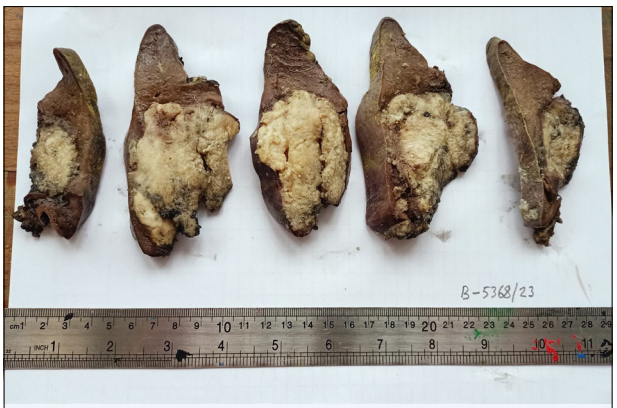

Fig. 4. Macroscopic view of tumor in spleen.

Average age of the patients was 60.5 (median, 52–72) years. Even though the metastases are macroscopic, they do not usually have clinical manifestations. In rare cases, discomfort, abdominal pain, abdominal bloating, or fever may occur.[6,11] About 70% of the cases and our case were also complaint free. Since the spleen has no afferent lymphatic vessels, metastases are confirmed to be hematogenous. The blood flow of spleen is as high as 100–1200 mL/min.[15,16] The differences in the frequency of splenic metastases of carcinomas generally coincide with the overall frequency of their hematogenous spilling. Since the hematogenous spread of tumor cells, splenic metastases are generally together with other organ/tissue metastases.[17]

Ultrasonography (US), CT scan, magnetic resonance imaging, and PET/CT scan are effective to figure out splenic metastases.[5,6,10] Splenic metas-

Table 1 Demographic, clinical and follow up information of the cases

Cases	Age (years)	Complaint	Prior diagnosis, surgery, adjuvant treatment	Interval	Clinical demonstration	Isolated	Follow-up time, recurrence, death
Teng et al. 2022 (5)	58	Abdominal distension, nauseal	IAG2, TAH+BSO, chemotheraphy	144m	US 10 cm splenic mass, Ca125 180.9U/ml Ca19.9 636.45 U/ml	Yes	5m, NR, NED
Klein et al. 1987 (6)	66	No	IAG2, TAH+BSO, PRT+BRT	20m	US 8cm splenic necrotic mass, CBC in normal range	Yes	43m, recurrence at 31m, death
Gilks et al. 1989 (7)	72	Hypochondrial pain	IBG2, TAH+BSO, no	33m	10 cm splenic mass	Yes	NR, recurrence at 6m, DOD
Arend et.al. 1992 (8)	62	Hypochondrial pain	IB, TAH+BSO, PRT	12m	10 cm splenic mass	Yes	NR, recurrence at 6m, NED
Agha-Mohammadi et al.2011 (9)	62	Hypochondrial pain	IIG1, TAH+BSO+ BPLND	72m	Splenomegaly	Yes	NR, NR, NR
Gogas et al. 2004 (10)	52	Hypochondrial pain	IBG2, TAH+BSO+PRT	43m	CT 7.5 cm splenic mass, CBC in normal range	Yes	46m, NR, NED
Takahashi et al. 2004 (11)	62	No	II, TAH+BSO, RT	18m	6 cm splenic mass, CBC in normal range, CA19.9 860 IU/ml	Yes	18m, NR, NED
Arif et al. 2013 (12)	54	Hypochondrial pain	IAG2, TAH+BSO, none	50m	9 cm splenic mass	Yes	NR, NR, NED
Stojanovic et al. 2022 (13)	62	Abdominal symptoms,	I, TAH+BSO, no	32m	US 76×62,37×37 mm splenic mass Ca 125 22.6 U/ml Ca19.9 16.8U/ml	Yes	NR, NR, NED
Gallotta et al. 2018 (14)	55	NR	IBG2, TAH+BSO, no	37m	Second recurrence	Yes	NR, NR, NED

TAH: Total abdominal hysterectomy; BSO: Bilateral salpingooophorectomy; NED: No evidence of disease; PRT: Pelvic radiotheraphy; BRT: Brachytherapy; NR: Not reported; DOD: Date of death; BPLND: Bilateral pelvic lymph node dissection; RT: Radiotheraphy; G: Grade

tases were imaged by US in 30% of the cases, as the other 10% used CT scan. A CT and a PET/CT scan were performed in our patient and both of them detected the tumor.

It is recommended to test Ca 125 during follow-up for patients with high Ca 125 levels at initial diagnosis.[1] Only two reports presented Ca 125 test results while others did not. While Ca125 (22.6 U/mL) and Ca19.9 (16.8 U/mL) values were normal in one case, a slightly (5 times) increased Ca125 (180 U/mL) and 9 times elevated Ca19.9 (636.4 U/mL) was detected in the other.[5,13] In our case, there was a 24-fold increase in Ca125 and 21-fold increase in Ca 19.9 which can be called exaggerated. There is no follow-up information in many cases, including ours. The longest reported follow-up period is 46 months.

In conclusion, early stage low-grade endometrial cancer rarely recurs and spleen is an extremely rare site for recurrence/metastasis. Like serum Ca 125 testing, Ca 19.9 testing can also be performed espe-

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cially to detect recurrences and secondary malignancies of gastrointestinal system. Although there are no complaints in the patient, an exaggerated increase in tumor markers may refer to unusual metastatic sides.

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