Case of a patient with ovarian cancer exhibiting only right axillary lymph nodes metastasis immediately after adjuvant chemotherapy

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<Introduction>
The mechanism of development of ovarian cancer is complicated. The primary mode of progression is via the peritoneal cavity and retroperitoneum; however, direct remote metastasis is rare. Here, we describe the case of a patient with right axillary lymph nodes metastasis, developed immediately after adjuvant chemotherapy, with no recurrent metastasis or primary cancer at other sites.

<Clinical presentation>
A 73-year-old woman was admitted to our hospital with complaints of abdominal fullness. Computed tomography (CT) revealed a 20-cm sized tumor in her pelvis. Magnetic resonance imaging (MRI) revealed a large ovarian tumor.

Uterine cervical cytology : NILM
Uterine endometrial cytology : negative
Tumor Marker
- CA125 69.8 U/ml (normal value < 35 U/ml)
- CA19-9 26.6 U/ml (normal value < 37 U/ml)
D-dimer 2.2 μg/mL (normal value < 1.0 μg/mL)

<MRI>
- Sagittal T2-weighted image
- Coronal T2-weighted image
- Axial diffusion weighted image

<contrast CT>
Because of deep vein thrombosis in the popliteal vein, anticoagulant therapy was initiated. Emergency surgery was performed because the patient complained of abdominal fullness.

<Surgery>
Total abdominal hysterectomy (TAH) + Bilateral salpingo-oophorectomy (BSO) + Partial greater omentectomy (pOMT)

Right ovary : Clear cell carcinoma
No metastatic carcinoma of uterus and greater omentum

<Diagnosis> Ovarian cancer, Stage IC3
The pathological diagnosis was clear cell carcinoma, PT1cN0xM0

<Puncture aspiration cytological findings : the right axillary lymph nodes>
There are numerous atypical cells bound with small lymphocytes. The cells exhibited high nuclear-to-cyttoplasm ratio, and morphologically irregular nucleus and clear nucleoli. Metastasis of adenocarcinoma was suspected (Pap x100)

<Axillary lymph nodes histopathology>
There are atypical cells which were similar to that of ovarian cancer. (H&E staining, x 200) Immunohistochemical staining revealed ER(+), PgR(-), and Napsin A(+), which is consistent with the findings of metastasis of ovarian clear cell carcinoma.

<Discussion>
We experienced a rare case of metastasis in only the axillary lymph nodes immediately after adjuvant chemotherapy. The mode of development of metastasis in ovarian cancer is complex. Metastasis and permeation of ovarian cancer is thought to occur via I. Peritoneal cavity course II. Retroperitoneum course
a) Along the ovarian blood vessel ⇨ Para-aortic lymph nodes
b) Inside the broad ligament ⇨ Iliac lymph nodes
c) Uterus round ligament ⇨ External iliac and inguinal lymph nodes

Direct remote metastasis is very rare. Furthermore, there are few cases that report metastasis in only the right axillary lymph nodes. Recently, it is considered as the third course that metastasis through the superficial lymph nodes of the abdominal wall. In this case metastasis in the axillary lymph nodes might be through superficial lymph nodes of the abdominal wall, too.

<Post operative course>
After the surgery, six cycles of chemotherapy with paclitaxel and carboplatin were administered. Computed tomography following completion of adjuvant chemotherapy revealed swelling of the right axillary lymph nodes; however, no other tumor was detected. We examined the entire body, including the mammary glands; however, no other recurrence or metastasis was found. Dissection of the right axillary lymph nodes was performed.

<contrast CT> <FDG-PET>
FDG-PET : only right axillary lymph node was positive
Mammary MRI : no abnormality
Bone scintigraphy : there is no abnormal accumulation

<Conclusion>
Postoperative management, including close observation with cytology in a positive manner, is important for patients with ovarian cancer to detect recurrence earlier.

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First author : Shiho Hashimoto
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I have no COI with regard to our presentation