Primary ovarian non-Hodgkin’s lymphoma

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DESCRIPTION

A 53-year-old woman visited the department of obstetrics and gynaecology in our hospital in March 2012 with a 1-month history of left lower quadrant pain. Contrast-enhanced CT showed a heterogeneous mass, measuring 6×11 cm in diameter, in the area of the left uterine adnexa and multiple lymph nodes along the left ureter. Fluorodeoxyglucose-positron emission tomography (FDG-PET)/CT showed very high metabolic activity in the ovarian mass and enlarged lymph nodes along the ovarian vein and left ureter (figure 1). Laboratory examination revealed elevated serum levels of lactate dehydrogenase (LDH; 346 U/mL) and slightly elevated levels of carbohydrate antigen 125 (68.0 U/mL). Preoperative diagnosis was cancer of the left ovary accompanied by lymph node metastases. Retrospectively, the high metabolic activity of FDG-PET, high LDH and marginally high CA125 value were strong clues that the tumour could be lymphoma. However, the patient underwent abdominal total hysterectomy, bilateral salpingo-oophorectomy, lymphadenectomy and omentectomy. Histological features of the operative specimen in the left ovary and lymph nodes along the left ureter indicated large, diffusely proliferating, atypical lymphoid cells positive for CD20 and CD79a, but negative for CD3 and CD10. In...
addition, 70–80% of cells showed positive MIB-1 staining. Primary ovarian diffuse large B cell lymphoma (DLBCL) was therefore diagnosed. After a consultation, the patient was referred to our department. The patient was staged as IIE and treated with six cycles of chemotherapy using rituximab, cyclophosphamide, doxorubicin, vincristine and prednisolone. As of the last follow-up in June 2013, the postchemotherapy course had been satisfactory.

**Learning points**

- **Fluorodeoxyglucose-positron emission tomography (FDG-PET)/CT** appears to offer a powerful tool for diagnosis of primary ovarian non-Hodgkin's lymphoma. Maximum standardised uptake value (SUVmax) is generally >15 with diffuse large B-cell lymphoma, compared with usual values between 5 and 15 with ovarian cancer—>15 is very unusual. In addition, we would expect either local lymph node involvement or peritoneal carcinomatosis with more diffuse distribution patterns of metastatic involvement in ovarian cancer. A diagnosis of ovarian cancer is thus less likely in this case, therefore she would have avoided the extensive surgery.
- Primary ovarian non-Hodgkin’s lymphoma differs from ovarian cancer in terms of therapeutic strategy and prognosis. Diffuse large B cell lymphoma (DLBCL) is reported as the most common type of ovarian non-Hodgkin’s lymphoma and postoperative chemotherapy is performed in almost all cases. The prognosis for primary ovarian DLBCL appears good with postoperative chemotherapy.
- Laboratory examination of a preoperative serum sample revealed elevated serum levels of soluble interleukin-2 receptor (sIL-2R; 2210 U/mL) in this patient. Levels of sIL-2R may thus help in the differential diagnosis.

**Contributors** TT and MU contributed in writing the manuscript and were involved in the patient’s treatment and investigation of data. Both the authors have read and approved the final version of the manuscript.

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**REFERENCES**