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Case Report

Ovarian Burkitt lymphoma: one case report

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Summary

A 12-year-old female patient was admitted to this hospital on March 19, 2015, because of lower abdominal pain lasting longer than one month. She had an appendectomy in a local hospital two months before admission. Two weeks after this operation, she began experiencing intermittent idiopathic pain in the lower abdomen, which progressively worsened. After admission, the physical examination, B-ultrasound, and enhanced CT revealed several lumpy shadows of mixed density in the pelvic and celiac areas, with a maximum lesion of 14.7×10.5 cm and unclear borders. The concentration of carbohydrate antigen 125 (CA-125) was significantly elevated. Surgery and rapid pathology confirmed the diagnosis of a left ovarian malignant tumor, and routine pathology further indicated ovarian Burkitt lymphoma.

Key words: Ovarian Burkitt lymphoma; Diagnosis; Treatment.

Introduction

Lymphoma is one of the most common malignant diseases in children [1]. Burkitt lymphoma, a type of B-cell non-Hodgkin lymphoma (NHL), accounts for 1-2% of NHL cases in the United States and Western Europe [2]. Although the ovary is small, the components of ovarian tissue are complicated, and this organ is regarded as producing the most types of primary tumors [3]. According to the literature [4, 5], human ovarian malignant lymphoma is divided into primary ovarian extralymphatic lymphoma and diffuse secondary ovarian lymphoma. Primary ovarian lymphoma has the lowest incidence, accounting for 0.2-0.3% of all female lymphoma cases, while the incidence of secondary ovarian lymphoma is 7-30%.

Case Report

A 12-year-old female patient was admitted to this hospital on March 19, 2015, because of lower abdominal pain lasting longer than one month. She had an appendectomy in a local hospital two months before admission. Two weeks after this operation, she developed a fever with a maximum temperature of 39°C, but no causative factors were identified, and no other discomfort was reported. The fever was relieved after the administration of antipyretics (the specific drugs used are unknown). More than one month ago, she began experiencing intermittent idiopathic abdominal pain, which progressively worsened. However, she did not pay much attention to this pain or return to the hospital for an evaluation. No case history or family history was reported.

Menstrual history included menarche at 11 years of age, with duration flow of 4-6 days, and a cycle length of 20-30 days. The last menstrual period was on March 10, 2015, with a normal amount of flow and no dysmenorrhea.

At admission, the body temperature was 36.7°C, pulse, 98 beats/minute, respiratory rate 20 breaths/minute, blood pressure 106/74 mmHg, height 160 cm, and weight 46 kg. She was poorly developed, but her general condition was acceptable. The abdomen was slightly bulging, with a 6-cm-long well-healed incision on the right lower quadrant. The abdomen was soft, and the palpable mass was located two fingerbreadths below the umbilicus. Anal examination revealed a 15-cm-diameter solid mass in the pelvic cavity, with a clear border, poor mobility, and no obvious tenderness.

Auxiliary examination by pelvic CT scanning on March 18, 2015, revealed the following: 1) several lumpy shadows of mixed density existed in the pelvic and celiac areas, with unclear borders and unknown features; the maximum lesion was 14.7×10.5 cm, and enhanced CT examination was recommended, and 2) pelvic fluid was noted, and suspicious lesions were scattered around the enlarged lymph node shadow. Color ultrasonography of uterine appendages showed a liquid dark area of 8.3×2.9×3.8 cm on the right part of the pelvic cavity with acceptable sound transmission and a slightly irregular solid weak echo mass of 12.0 ×9.2×14.0 cm in the front of the uterus, with multiple cystic dark areas of different sizes. Color Doppler flow imaging (CDFI) showed rich blood flow signals in the peripheral and internal regions, and the arterial spectrum was recorded (RI: 0.66). The blood concentration of carbohydrate antigen 125 was 606.60 U/mL.

After the preoperative examination and preparation, the patient underwent an exploratory laparotomy on March 23, 2015. During the operation, no significant abdominal adhesions were observed; the uterus was of normal size with a smooth surface; the left ovary was significantly enlarged to 18×15×16 cm with fragile finger-like growths, rich blood flow signals, and multiple blood vessels visible on the surface, and there were no obvious abnormalities in the bilateral ovarian ducts or the right ovary. The mass was resected and sent for frozen-section pathological examination (pathological sample no. 2015-00348). The results indicated left ovarian cancer, so left adnexectomy was performed. Type B Rh+

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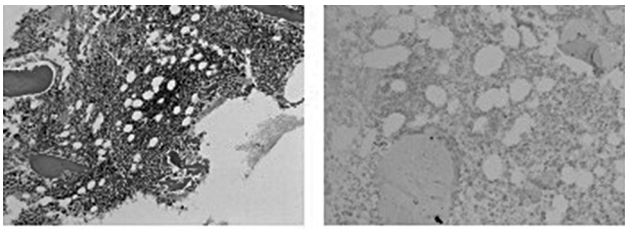

Figure 1. — Images of bone marrow obtained by puncture.

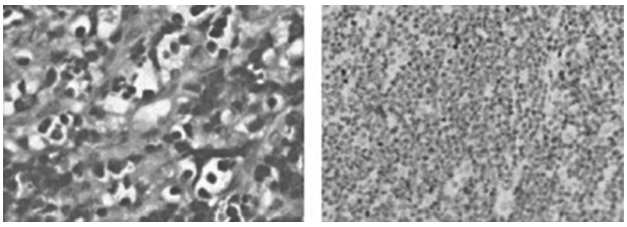

Figure 2. — Pathological findings of left ovarian mass.

red blood cell suspension (300 ml) was transfused intraoperatively.

On the 9th day after the operation, the patient complained of a sudden pricking pain in the left upper abdomen, especially upon inhaling. She was transferred to the Department of Hematology for further treatment. At the seven-month follow-up, the patient was experiencing a good recovery.

Postoperative pathological examination results are presented below. Pathological findings: 1) volume of nucleated cells: 41%-60%, 2) M/E ratio: 1.5-3.5: 1, 3) megakaryocytes: 1-2/HPF, 4) no significant changes in cell distribution, 5) no abnormal matrix reaction, and 6) no increase of reticular fibers (±). The pathological examination indicated bone marrow hyperplasia, with no other special changes (Figure 1). Immunolabeling of lymphocytes: CD20, PAX-5, CD10, Bcl-6, and TdT focal (+) expression.

Pathological diagnosis: immunohistochemistry results of the left appendage confirmed non-Hodgkin lymphoma, and specifically, Burkitt lymphoma. Immunohistochemistry results of tumor cells: Ki-67 (+, 80%), CD20 (+), PAX- 5 (+), CD10 (focal +), Bcl-2 (-), TdT (-), S-100 (-), CD3 (-), Vim (-), inhibin (-), PLAP (-), Bcl-6 (+), and CD10 (+) (Figure 2).

Discussion

In this case, a giant ovarian mass was found two months after appendectomy, and postoperative pathological findings confirmed the diagnosis of ovarian Burkitt lymphoma. After consultation with hematologists and bone marrow puncture, the patient was diagnosed with secondary ovarian lymphoma.

The following clinical experience in this case should be considered in the diagnosis and treatment of ovarian lymphoma: 1) Appendectomy was performed in a local county hospital. The patient had a fever and abdominal pain, so systemic blood disease was suspected. However, the doctor did not perform necessary examinations to rule out this possibility. 2) Since the patient was unmarried with no history of sexual intercourse, the local hospital did not conduct any gynecological examinations, not even a gynecological B-ultrasound, so whether the pelvic mass existed before the appendectomy is unknown. 3) In the present hospital, treatment for the pelvic mass was the top priority, and no systemic examinations were conducted before the operation. The diagnosis of lymphoma was made after the operation. Therefore, as a specialist, the doctor should perform a general physical examination of the whole body and a differential diagnosis of systemic diseases to reduce misdiagnosis and missed diagnosis.

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