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Case Report

Diffuse Large B-cell Lymphoma during Pregnancy

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Abstract

Introduction:Non-Hodgkin Lymphoma (NHL) during pregnancy are very uncommon, and primary symptoms of NHL are similar to pregnancy physiologic changes.

Case presentation:We report a case of NHL during pregnancy that didn't have any peripheral lymphadenopathy, with mediastinal involvement. Chemotherapy began during pregnancy and after delivery treatment continued with chemotherapy and radiotherapy, and mother and baby were both healthy.

Conclusion: Early diagnosis of NHL cause to better prognosis of disease and making a chance for mother to make a decision about continue pregnancy or not and about her treatments.

Keywords: large B-cell; lymphoma; pregnancy

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Consent: Consent was taken from the patient for publication of this case report.

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Introduction

Neoplastic states specially Non-Hodgkin Lymphoma throughout pregnancy are comparatively uncommon (incidence of neoplastic diseases: 1/1000 pregnancies)[1,2].

Early symptoms of NHL such as weakness, fatigue, sweating and shortness of breath mimic physiological changes during pregnancy. Additionally avoiding from imaging because of the risk of damage to the fetus cause to delaying of diagnosis [3].

Prognosis of advanced NHL is bad with 1.5 years of average life durations but prognosis is better in a low level NHL and average life period is 7.5 years. Lymphomas have a tendency to organs involvement for example breast, ovary, uterus and etc because of their hormonally stimulation during pregnancy [4].

Due to these notes and reports of NHL during pregnancy, early diagnosis and intervention in NHL in pregnant women is so important and one of the important differential diagnosis of lymphadenopathy (peripheral or central) should be NHL.

Case presentation

A 25-year-old women with gravid two, para one, death one (because of heart failure), 16 weeks, pregnant presented with neck pain, face swelling, fatigue, and back pain with sweating ; without fever or recent weight loss.

In general appearance of patient swelling of face and neck was seen and physical examination revealed non-pitting edema of face and neck and chest wall with involvement of two breasts, prominent jugular vein, crackle of lungs and decreased heart sounds.

Large sized pericardial effusion with long mass attached to pericardial wall without right ventricle collapse or right atrium inversion, reported in echocardiography. ChestX-ray showed mass like area in right paramediastinum (Figure 1). Spiral chest computed tomography (CT) showed large infiltrative soft tissue mass (sized 113*85 mm) in anterior mediastinal area, and prominency of mass to superior lobe of left lung that cause to brachiocephalic veins and superior vena cava (SVC) encasement and compression and showed pleural and pericardial effusion(Figure 2).

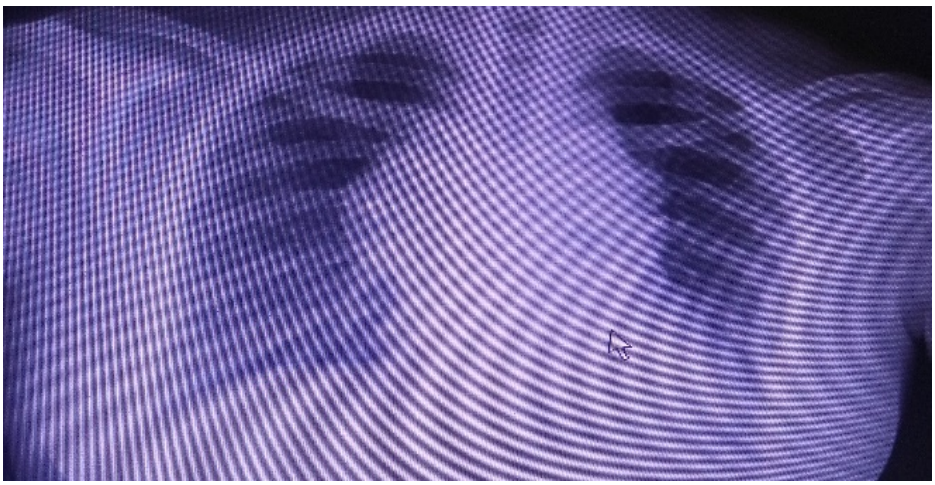

Figure 1 Chest X-ray showed mass like area in right paramediastinum. Imam Reza Hospital of Tabriz University of medical science.

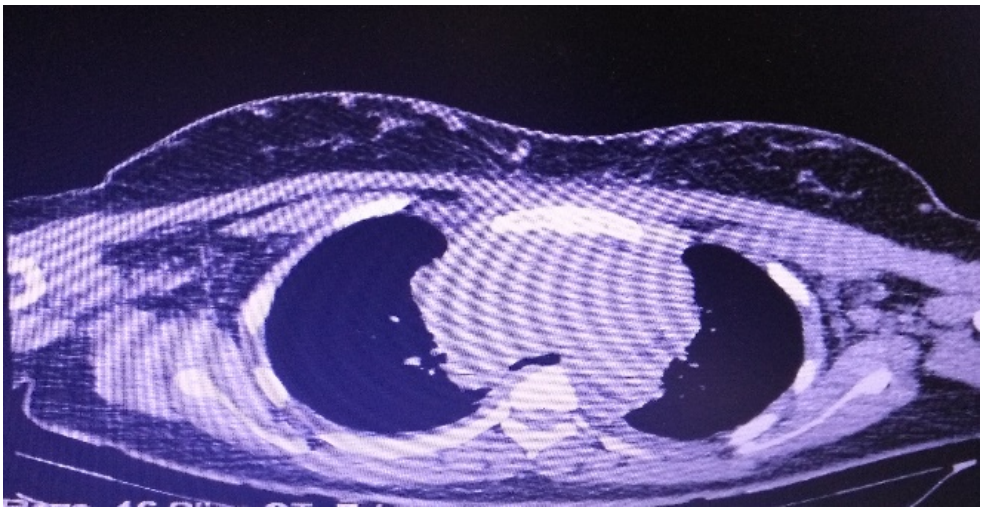

Figure 2 Spiral chest computed tomography (CT) showed infiltrative mass in anterior mediastinum. Imam Reza Hospital of Tabriz University of medical science.

CT-guided mediastinal mass, needle biopsy reported: malignant tumor, consistent with undifferentiated carcinoma and immunohistochemistry (IHC) study recommended. And according to IHC report, all malignant cells are reactive for CD20, they show weak reaction for CK and all of them are negative for CK7, CK20, TTF, CEA, CD10, calretinin, WT and CK5/6, so malignant lymphoma, diffuse large B-cell type diagnosed.

Laboratory evaluation revealed a normocytic anemia (10.4 g/dl) accompanied by an elevated level of serum lactate dehydrogenase (LDH:1508 u/l). Other studies were normal (WBC=11300/dl, NEUT=68%, LYMPH=32%, PLT=275000/dl) and Peripheral Blood Smear study showed normochromic normocytic anemia. So bone marrow aspiration and bone marrow biopsy was not necessary.

She received 8 cycle of chemotherapy with the CHOP regimen (cyclophosphamide 800mg, doxorubucine 70 mg, vincristine 2mg and prednisolone 80 mg). During chemotherapy hematological parameters were normal and LDH decreased. Fetal probably malformation studies were normal.

At 38 weeks gestation, her spontaneous contractures began and single alive, 2900gr female baby (with 1st minute APGAR scores of 8, and 5th minute APGAR scores of 9) was delivered by vaginal delivery. Both mother and baby were clinically and paraclinically healthy and chemotherapy for mother continued. Radiotherapy began for mother after delivery.

Discussion

NHL during pregnancy is comparatively uncommon, and early symptoms of NHL similar to physiological changes during pregnancy, also complications of imaging during pregnancy for fetus cause to delayed diagnosis of high risk disease such as NHL [1]. Importance of early diagnosis of NHL also are related to making a chance for mother to make a decision about continue pregnancy or not and beginning of chemotherapy or radiotherapy [5].

So because of physiological changes and avoiding from imaging during pregnancy diagnosis of this disease can be missed; we present this case as a differential diagnosis of disease during pregnancy for early diagnosis and beginning the treatment.

There is a hypothesis that pregnancy itself is a state of immunosuppression because of high level of

serum corticosteroids and may causes to neoplasm development[8].

According to Rappaport NHL classification prognosis of NHL are related to the histological variant and diffuse type have a poorer prognosis than nodular ones [5].

Mediastinal Large cell lymphoma, can make signs and symptoms like our case by infiltration in the thorax and making compression on main arteries and veins even on trachea without any peripheral lymphadenopathy. Also most important aspect of early diagnosis was invasive nature and poor prognosis of mass that is greater than 10cm [8].

Some of the differential diagnosis of mediastinal lymphadenopathy is: 1. Small cell mesothelioma, 2. Primitive neuroectodermal tumor (PNET), 3. Desmoplastic small round cell tumor (DSRCT), 4.Small cell carcinoma of lung (SCLC), 5. Tuberculosis, and 6. Sarcoidosis. Diagnosis could make by clinical features and histopathological studies [5].

Due to Asma Habib's et al study Some factors for decision about treatment is period of gestation, stage and localization of the disease and presence or absence of symptom like fever, night sweats, weight loss more than 10% of the original weight six months prior to first attendance, also raised serum LDH is a poor prognosis factor [5].

Regimen for chemotherapy in our patient was CHOP, other regimens that we can use are CHOP-II (cyclophosphamide, vincristin, adriamycine and prednisolone), VACOP-B, CHOP plusritoximab. Autologous stem cell transplantation with high-dose CT and ESHAP and radiotherapy is other treatment ways [5].

Only Chemotherapy for treatment can cure 30% to 40% of patient with highly developed diseases [5].

The effect of radiotherapy and chemotherapy on fetus was studied and most authorities agree that a fetal dose of less than 10rad is probably safe [6].

Most teratogenicity of chemotherapy and radiotherapy for baby is at 1st trimester of pregnancy [6]. Study about the best treatment (chemotherapy or radiotherapy or combination therapy) and the best regimen for chemotherapy and the safest dose for radiotherapy about NHL during pregnancy recommended.

Ethics

Tabriz, Imam Reza Hospital is a medical education center, so all of patient before admission sign the paper for satisfaction that we can use their data for our researching goals and we can publish the results without revealing their ID.

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