Malignant Lymphoma in Pregnancy Presenting with Severe Dyspnea — A Case Report

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While dyspnea is commonly observed during pregnancy, the presence of a disproportionately severe symptom may imply a serious complication, such as status asthmaticus, foreign body impaction, tumor obstruction, pulmonary embolism, infection, or heart dysfunction. We report a rare case of a 26-year-old primigravida at 34 weeks' gestation complicated with malignant lymphoma presenting as severe dyspnea and orthopnea. The initial investigation included chest X-ray and chest ultrasound. The management was a cesarean section followed by chemotherapy. We stress the importance of a differential diagnosis with any unexplained dyspnea in pregnancy. We also show the usefulness and versatility of chest ultrasound when dealing with unfavorable patient conditions. ***(Thorac Med 2004; 19: 284-288)***

Key words: pregnancy, lymphoma, Hodgkin's disease

Introduction

Cancer is the second most common cause of death during the reproductive years [1]. Cancer diagnosed during pregnancy poses a challenge to the patient, her family, and the medical staff. The most common malignant tumors associated with pregnancy are cervical and breast carcinomas, malignant melanoma, and lymphoma [1]. While dyspnea is commonly observed during pregnancy, the presence of a disproportionately severe symptom merits meticulous evaluation and a differential diagnosis. Herein, we report a rare case of a 26-year-old primigravida at 34 weeks' gestation, presenting with increasing dyspnea and orthopnea of two months' duration. Malignant lymphoma was diagnosed by neck lymph node (LN) biopsy. The patient was managed with a cesarean section, followed by chemotherapy, which she has continued to receive on a monthly basis as of this writing five months after discharge. Her condition was stable, with a continuing shrinkage of the tumor and an alleviation of the respiratory symptoms.

Case Report

A 26-year-old primigravida at 34 weeks' gestation presented to our outpatient department with cough, evident wheezes, and increasing dyspnea of two months' duration. The patient's past medical history was unremarkable, and a family history of bronchial asthma was denied. The patient stated that the symptoms had started about two months earlier, initially with a dry cough which pro-

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gressed gradually into dyspnea, and later orthopnea. She had sought medical help at another hospital, however, the symptoms were thought to be insignificant and only symptomatic treatment was given. About one month prior to admission, the patient experienced a sudden onset of neck and face swelling, with visible vessel engorgement in her upper chest wall. At about the same time, she noticed several enlarged LNs in her lower neck region. Again, the symptoms were ignored. The orthopnea got so severe that she was no longer able to lie on her back for the month prior to admission.

On physical examination, the patient was in acute and severe cardiopulmonary embarrassment, with evident dyspnea and orthopnea, and the use of accessory respiratory muscles. She was clear and alert. There were multiple rubbery LNs in her lower neck and bilateral supraclavicular regions. The jugular vein was visibly engorged. On auscultation, there was grossly audible stridor originating from the large airway. The stridor involved inspiration more than expiration, which allowed her speech to be relatively preserved. There were visible engorged veins in her upper chest and on both shoulders. The legs were markedly swollen. Otolaryngologic consultation revealed a patent upper airway. The chest X-ray revealed a right upper lobe (RUL) collapse and widened mediastinum (Figure 1). Ultrasound study confirmed the presence of multiple LNs in her lower neck, and a huge mediastinal tumor with RUL involvement and associated lobar collapse (Figure 2). An echocardiography revealed a small amount of pericardial effusion with some fibrin formation. An obstetric ultrasound study revealed a normal fetus without apparent anomaly.

On the second hospital day, we were faced with the dilemma of keeping the baby or arranging an early delivery. Because of the severe dyspnea and orthopnea, a chest computed tomography (CT) study was deferred, as were bronchoscopy and LN biopsy. After a multidisciplinary evaluation, a cesarean section under general anesthesia followed by neck LN biopsy was considered most beneficial and most practical for this particular patient. On the third hospital day, the patient underwent a cesarean section,

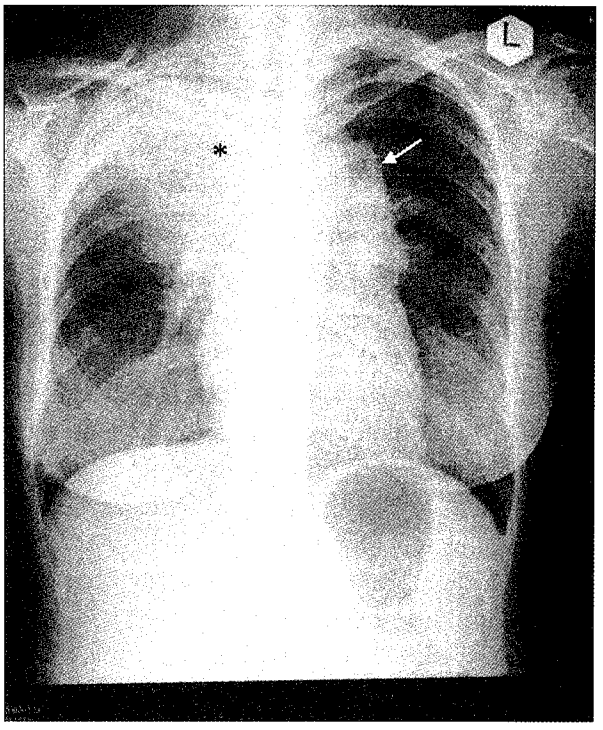

Fig. 1. Chest posteroanterior view on admission shows widened mediastinum (arrow) and right upper lobe collapse (*).

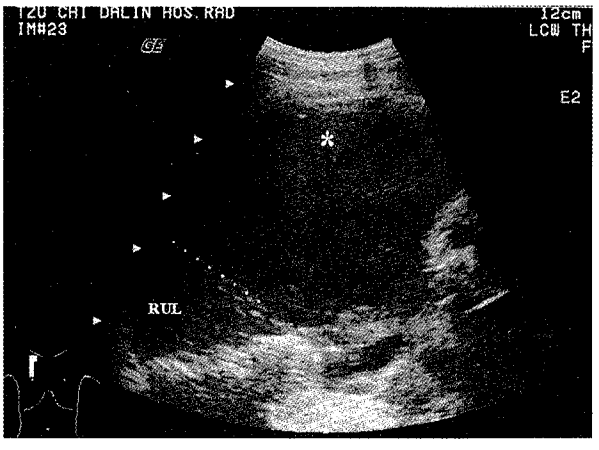

Fig. 2. Chest ultrasound shows a huge mediastinal tumor (*), with a tumor-invaded and collapsed RUL. The dotted line denotes the demarcation between the tumor and the collapsed lung.

and a 2,100g healthy baby boy was delivered. The procedure was followed immediately by neck LN biopsy. The intraoperative frozen section was suggestive of malignant lymphoma, which was further confirmed by a permanent section as a diffuse, mixed small and large cell, B-phenotype lymphoma.

The patient received the first dose of chemotherapy, with a Rituximab-EPOCH regimen (epirubicin, prednisolone, vincristine, cyclophosphamide, and etoposide), later that day.

A CT of the chest performed two weeks after the initiation of chemotherapy, while the patient was still on endotracheal intubation, revealed a huge mediastinal tumor with direct involvement and collapse of the RUL, marked narrowing of the lower trachea and bilateral main bronchi, and nearly total obliteration of the superior vena cava (SVC) (Figure 3). The patient remained ventilator-dependent for 17 days postoperatively. Twenty-four days after admission, the patient and her baby were discharged, both in stable condition. She then underwent chemotherapy as an outpatient on a monthly basis. The general condition subsequently improved, with continuing shrinkage of the tumor and an alleviation of the respiratory symptoms. A follow-up chest CT three months later revealed marked shrinkage of the mediastinal tumor, improved aeration of the RUL, and a nearly normal patency of the SVC and main airways (Figure 4).

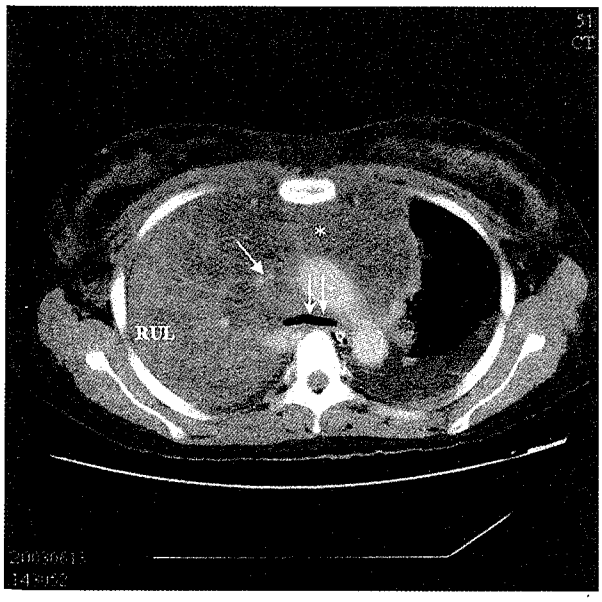

Fig. 3. Chest CT scan, performed two weeks after chemotherapy, reveals a mediastinal tumor (*), marked narrowing of the lower trachea and bilateral main bronchi (double arrow), a nearly totally obliterated SVC (arrow), and a tumor-invaded and collapsed RUL. The demarcation of the tumor and collapsed RUL cannot be identified clearly. There is a small amount of left-sided pleural effusion.

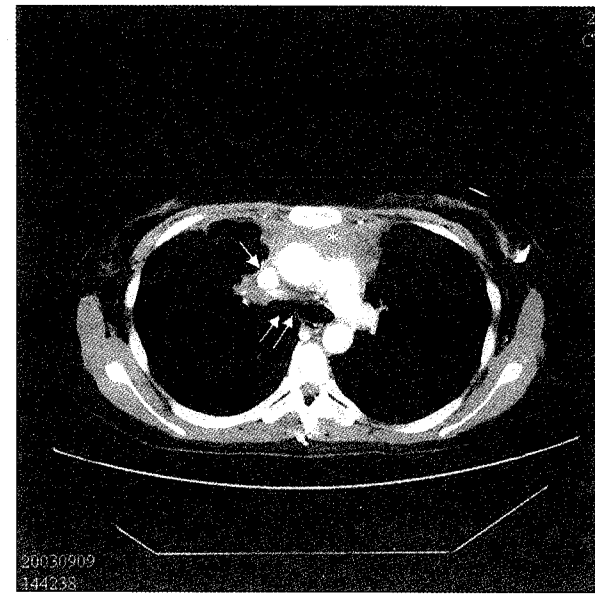

Fig. 4. Chest CT scan three months after chemotherapy shows improved aeration of the RUL, marked tumor size shrinkage (*), and nearly normal patency of the SVC (arrow) and bilateral main bronchi (double arrow).

Discussion

Cancer is estimated to affect one in 1,000 pregnant women, and is the second most common cause of death during the reproductive years [1-3]. The incidence is expected to rise with the concomitantly increasing length of childbearing years. The most common malignant tumors associated with pregnancy are cervical and breast carcinomas, malignant melanoma, and lymphoma [1]. Lymphoma, including Hodgkin's disease (HD) and non-Hodgkin's lymphoma (NHL), is the fourth most frequent cancer diagnosis among pregnant women [4]. The mean age of diagnosis for NHL is 42 years, and that for HD is 32 years [1,5]. The incidence rates for HD and NHL are surprisingly similar among women of childbearing age [4]. HD associated with pregnancy is relatively not uncommon, occurring in from 1 in 1,000 to 1 in 6,000 deliveries. In contrast, the association of NHL with pregnancy is rare, with only 110 cases reported in the literature as of November 1998 [6-7].

Most women with NHL associated with pregnancy have an aggressive histologic subtype and advanced-stage disease, an observation reflecting the biology of lymphoma in young women of childbearing age. Alternatively, the advanced disease stage may be due to a delay in diagnosis, as represented by the present case [4]. An unexpected high incidence of breast, uterine, cervical, and ovarian involvement among pregnant women has been noted. Many observers have reported bilateral breast involvement, especially in Burkitt's lymphoma [8]. The phenomenon has been attributed to hormonal influences and/or to increased blood flow to these organs during pregnancy. Placental involvement with NHL is uncommon, and only a few case reports can be found in the literature [4].

As for management, patients with HD diagnosed in the first trimester may be observed until the second trimester, then standard chemotherapy should follow. Those with HD present in the second or third trimester should be closely observed, or chemotherapy instituted if necessary, followed by radiotherapy after delivery. For NHL, women diagnosed during the first trimester and those unwilling to accept any potential therapy-related side effects should have a therapeutic abortion. All other women should be treated immediately with standard therapy [4].

There is no evidence suggesting that pregnancy affects the course of HD or NHL, as demonstrated in several large reviews [1,7]. Patients with HD have a more favorable outcome, with more than 80% chance of a 10-year disease-free survival, which is a virtual cure. In contrast, the prognosis for NHL is worse, explained in part by the more aggressive cell type and dissemination of disease at presentation [7].

SVC obstruction, or SVC syndrome, is caused most commonly by tumors that arise in or spread to the mediastinum. The compressed SVC leads to swelling of the face or trunk, chest pain, cough, or shortness of breath. Therapy is directed at the underlying disease, with chemotherapy administered via an unobstructed vein, or radiotherapy if the tumor is unresponsive to chemotherapy [9]. In recent years, a technique using percutaneous stenting for malignant SVC syndrome has been introduced and has been successfully employed here in Taiwan [10]. Our case illustrates the importance of the differential diagnosis in any unexplained causes of dyspnea in pregnancy. It also shows the usefulness and versatility of chest ultrasound under unfavorable patient conditions.

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以嚴重呼吸困難表現的懷孕合併惡性淋巴瘤—病例報告

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懷孕特別是後期會有呼吸困難現象，但如果症狀過於嚴重異於尋常，則可能是併發其他嚴重合併症，如氣喘重積狀態、異物或腫瘤阻塞、肺栓塞、感染、心臟功能異常等。我們報告一個罕見病例，26歲初產婦於懷孕34週併發惡性淋巴瘤以嚴重呼吸困難及端坐呼吸為表現。剛開始的檢查包括胸部X光及超音波檢查。病人於住院第三天接受剖腹生產及頸淋巴結生檢並於當日開始接受化學治療。我們在此強調懷孕合併不明原因氣喘時鑑別診斷的重要性。我們也顯示胸腔超音波檢查在病人情況不佳時的實用性與靈活性。***(胸腔醫學 2004; 19: 284-288)***

關鍵詞：懷孕，淋巴瘤， Hodgkin's disease

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