CASE REPORT: NASOPHARYNGEAL CARCINOMA IN PREGNANCY

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Abstract

Introduction: Nasopharyngeal carcinoma in pregnancy is a rare case, a dilemma in its management. This condition has a significant negative effect on pregnancy, given risk of premature birth, fetal defects and abortion.

Case Report: 23-year-old woman with 13 weeks gestation age comes with swelling in both necks accompanied by nosebleeds. On nasoendoscopic examination, there was a mass at nasopharynx. Histopathological examination results a nasopharyngeal squamous cell carcinoma.

Conclusion: The management of nasopharyngeal carcinoma in pregnancy is very complex, need for extensive multidisciplinary approach with experienced doctors in their respective fields.

Article Info

Keywords:

Nasopharyngeal carcinoma, pregnancy, radiotherapy, chemotherapy, fetal risk

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1. CASE REPORT

Nasopharyngeal carcinoma is a tumor that is often on the head and neck, but in pregnant women, will be a challenge in the management of antepartum patients with nasopharyngeal carcinoma when faced with adverse risks to the fetus and the mother. Cases of nasopharyngeal carcinoma in pregnancy are very rare in most countries (<1 per 100,000 per year), most obstetricians in developing countries are not accustomed to sufferers of nasopharyngeal carcinoma, both recognizing the clinical symptoms to their management during pregnancy. In addition, the diagnosis of these malignancies is generally very low and in particular in developing countries due to several factors such as lack of public awareness of these malignancies, poor health system, socio-cultural status, low socio-economic status, lack of access to health facilities and scarcity of facilities in terms of the treatment of this malignancy itself [1]. Until now, several studies have shown that patients with nasopharyngeal carcinoma in pregnancy can be managed well by using a multidisciplinary approach to improve the condition of mothers and babies [2].

23-year-old woman with 13 weeks gestational age came with complaints of a lump in both necks since 3 months. Patients complain of frequent nosebleeds in the past month, nasal congestion, headaches and full ears. His psychosocial history is a newly married young couple and this is the first pregnancy, there are family history (uncle) with lymph node malignancy (the patient does not understand the type of malignancy). Educational background; the patient graduated from Senior High School with support and good family interaction. Psychiatric history and mental status is no problem.

On physical examination, it appears moderate pain and afebrile, blood pressure 110/60 mmHg. Bilateral neck mass, right level II-III size 4x4x3 cm and left level II-IV size 6x5x3 cm. Nasoendoscopy examination; macroscopically, the mass fills the nasopharynx to both choana. The eustachian tube ostium is covered by masses on both sides. Obstetrics and Gynecology examination results; uterine fundus height measuring 18 cm from the symphysis, no palpable contractions, bleeding or vaginal discharge, on examination of the palpable cervical pelvis and ultrasound seen a single intrauterine fetus alive. On laboratory tests of hemoglobin 11.3 g/dl, hematocrit 34%, platelets 197,000/uL, leukocytes 8500/uL, BT coagulation profile 3.8 minutes, CT 8 minutes, ureum 19 mg/dl, creatinine 0.7 micro mol/L, SGOT 20 u/L, SGPT 17 u/L.

On November 20, 2019 a nasopharyngeal biopsy was performed with local anesthesia with histopathological results of a tumor consisting of inflammation cells of lymphocyte cells and tumor cell groups in the form of

round, fine chromatin, small nuclei, and found cell mitosis according to differentiated non-keratin squamous cell carcinoma. A diagnosis of nasopharyngeal carcinoma was made, and the patient was classified as TxN3M0. The use of computer tomography is still considered due to patients with early trimester gestational age, an examination will be planned during the second trimester gestational age. Magnetic resonance imaging (MRI) examinations are expensive and not available. For further management, the patient is planned for radiotherapy to waiting for the results of a nasopharyngeal CT scan and gestational age until the second trimester of pregnancy.

2. DISCUSSION

Nasopharyngeal carcinoma is a rare malignancy, only 2% of all head and neck malignancies. There is a complex relationship between the role of genetics, environment, viruses and food factors as the etiology of this malignancy [3]. Historically, the first case of nasopharyngeal carcinoma was reported in 1901 with several clinical symptoms of cancer described in 1922 [4]. In the research of Mu-Sheng Zeng et al. it is reported that the highest incidence of nasopharyngeal carcinoma is in endemic areas of the Epstein-Barr virus (EBV), especially in South China, Southeast Asia, Japan and the Middle East/North Africa with an incidence of up to 50 cases per 100,000; whereas in western countries, the incidence is around 1/100,000. This malignancy is the third most common malignancy in men than women [5]. Research shows that nasopharyngeal carcinoma affects all age groups, but often occurs at the age of 50-60 years, and less often at an early age. In addition, it is widely believed that Epstein Barr Virus infection is not enough to induce nasopharyngeal carcinoma and that there are other factors such as genetic factors playing an important role in the pathogenesis of nasopharyngeal carcinoma [6]. In this case, the patient is relatively young at the age of 23 years, with a history of a family member with another positive malignancy even though it is not a nasopharyngeal carcinoma, this supports the genetic factor hypothesis.

Nasopharyngeal carcinoma is difficult to diagnose at an early stage because of the lack of symptoms and clinical signs. At presentation, nasopharyngeal carcinoma associated with hearing problems, serous otitis media, tinnitus, nasal obstruction, anosmia, bleeding, difficulty in swallowing and dysphonia, and even eye symptoms with diplopia and pain. The initial diagnosis is difficult to make because early signs and symptoms of this disease are not specific. Most of patients (60.6%) had recognized they already had a unilateral ear problem, the earliest sign of NPC, several months before diagnosis. Second and third most prevalent symptoms at

presentation were persistent nasal congestion and nasal blood secretion [7]. Painless lump or neck mass caused by cancer metastasis to the neck lymph nodes [8]. In case reports of patients with bilateral neck enlargement complaints, nosebleeds, ear fullness and headaches. In some studies, hearing loss is caused by the tumor itself [8]. The literature explains that hearing loss is affected because this cancer is located in the Rosenmuller fossa near the eustachian tube ostium [9].

Diagnosis and management of nasopharyngeal carcinoma in pregnancy is a challenge for ENT doctors, starting from the diagnosis through biopsy, radiological investigation and subsequent management after diagnosis of nasopharyngeal carcinoma is established. Biopsy, this procedure is very important as a definitive diagnosis of a nasopharyngeal malignancy, can be associated with the possibility of bleeding and anesthetic effects associated with fetal risk. Several authors reported that general anesthesia for non-obstetric operations during pregnancy is a challenge. Research shows that anesthesia in the early trimester is at risk for fetal abortion, whereas in the second trimester it is relatively safe from the risk of spontaneous abortion and premature birth, then the risk in the third trimester is relatively reduced compared to the second trimester. [10, 11] Thus, biopsy using general anesthesia should be done at the end of the trimester second to minimize the incidence of premature fetuses or abortion. In addition, complications related to biopsy are bleeding. Risk of bleeding in pregnant women will increase with increasing gestational age, this is due to hormonal factors. Progesterone, a vasoactive hormone that is known to inhibit vasoconstriction, resulting uncontrolled bleeding or thromboembolic events during biopsy [12, 13]. In this case reports the patient is biopsy using local anesthetics which is conducted at the relatively early gestational age (13 weeks). Biopsy is an initial procedure in making the diagnosis in each process of malignancy. The risks and benefits of this procedure should always be considered in pregnant women or in some circumstances, and this procedure should not be delayed because of the pregnancy status because it is very important to start further treatment.

Radiological examination, both CT-scan and MRI can provide good information about the expansion of the tumor to other organs. The American Society of Clinical Oncology (2017) reports that CT scans of the head and thorax are safe during pregnancy because they do not directly expose the fetus to radiation. Although some literature states that radioactive exposure in pregnancy can have a negative effect during pregnancy in the form of fetal defects and the incidence of abortion, the incidence of fetal defects and abortion increases inversely with gestational age, the greater the gestational age, the smaller the incidence of fetal or abortion defects. The use of magnetic resonance imaging is preferable in terms of diagnostics during pregnancy. In this case reports, nasopharyngeal CT scans are not performed with consideration of the relatively young gestational age. The use of MRI is good but there are no facilities in our hospital. Anatomic pathology is mentioned as an appropriate diagnostic procedure. Other laboratory tests including a complete blood count, kidney and liver function tests, and coagulation profile are important. The results of abnormal liver function tests indicate the possibility of liver metastasis [8].

Macroscopically, nasopharyngeal carcinoma have varies features from smooth mucosal protrusions, nodular lumps with or without surface ulceration and the presence of infiltrative lesions [14]. Histologically, according to WHO cited by MU-Sheng Zeng and friends, nasopharyngeal carcinomas are classified in three types based on the degree of differentiation. Type 1. Keratinizing squamous cell carcinoma (SCC), this type mostly arises from ostium of the Eustachian tube in lateral wall of the nasopharynx. Umar and colleagues found that the incidence of keratinizing SCC around 5-10% of the total cases of nasopharyngeal carcinoma. In electron microscopy, differentiated keratin-producing cells are seen by intracellular bridges between cells. Nasopharyngeal carcinomas types 2 and 3 are non-keratin squamous cell carcinomas with variations in cell differentiation from mature cells to anaplastic cells. Type 2 and 3 NPC are non-keratin producers. Nasopharyngeal carcinoma type 3 has very different cell types (clear cells, spindles, anaplastic). In addition, Mu-Sheng Zeng and colleagues reported that type 3 nasopharyngeal carcinoma was the most common type in endemic areas because it was related to environmental factors, EBV infection and the role of genetically susceptible individuals. In this case, histopathology results was a network of inflammatory lymphocyte cells and tumor cell groups in the form of round, fine chromatin, small nuclei partly, found mitosis of cells according to WHO type 2 classification.

Managing head and neck cancers during pregnancy requires understanding about pregnancy-related knowledge, encompassing a triad of effects, (i) the etiological effect of pregnancy on cancer, (ii) the direct and indirect effects of cancer on pregnancy, and (iii) the effect of diagnostic and treatment modalities on pregnancy. Consideration must also be given to the ethical dilemmas of decision making [15]. The American Society of Clinical Oncology recommends several management options for nasopharyngeal carcinoma without affecting pregnancy. In general, there are several factors that must be considered before starting this cancer treatment during pregnancy including gestational age, tumor stage and a woman's desire to maintain her pregnancy. The main risk associated with cancer during pregnancy is premature birth/abortion. Horgan et al in his study mentioned that there was a relationship between preterm birth and the chemo-radiation in women with malignant head and neck tumors including nasopharyngeal carcinoma. According to the current protocol, nasopharyngeal carcinoma can be treated with chemotherapy, radiotherapy or with a combination of both, depending on the stage of the tumor. However, several studies have reported that concurrent chemo-radiotherapy is better than radiotherapy alone for patients at low risk. Thus, administration of neoadjuvant and/or adjuvant chemotherapy is a therapy that is still acceptable for patients at high risk. In pregnant women, chemotherapy or radiation is still a challenge. Several studies have shown that chemotherapy in the second and third trimesters is risky because it can inhibit intrauterine growth and increase the incidence of preterm birth and the presence of cardiotoxic effects on the mother and fetus. To date, there have been several studies examining the increase in complications of nasopharyngeal carcinoma with increasing gestational age, in that study the patient's condition worsened during pregnancy, but improved after delivery without chemotherapy or radiation. Further research is needed to evaluate the results of the study. The nasopharyngeal carcinoma management protocol recommends that stages I and II can be treated with radiotherapy alone because the prognosis is generally good, but for stages III and IV that have a poor prognosis should be given a combination of radio-chemotherapy. In this case, the patient is clinically at stage IV (TxN3M0).

3. CONCLUSION

Nasopharyngeal carcinoma in pregnancy is rare. Management of nasopharyngeal carcinoma in pregnancy is a dilemma for doctors. Regardless of the gestational age, the deteriorating patient's condition becomes the choice to continue the treatment of the cancer with the risk of premature birth, fetal defects or abortion. The use of diagnostic and therapeutic modalities such as radiology, histopathology, radiotherapy and chemotherapy is still a dilemma so multidisciplinary consideration is needed from several experienced experts. In areas or health facilities that are limited in resources, patients often present with tumors at an advanced stage. Nonetheless, doctors must diagnose early clinical symptoms of nasopharyngeal malignancies so that they can refer patients for proper management at a complete facility home in the management of this cancer. Increasing gestational age can worsen symptoms of nasopharyngeal carcinoma, but further research is needed on this finding.

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