

Case Report

Gestational trophoblastic disease and false positive hCG value

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Introduction

Gestational trophoblastic neoplasia by definition develops with or follows some form of pregnancy. The diagnosis is made primarily by persistently elevated serum hCG level. Gestational trophoblastic neoplasia (GTN), whether in a low or high risk group, is highly sensitive to chemotherapy. hCG level is measured repeatedly during the course of chemotherapy to note the response to the drug, to detect any drug resistance and to note whether the patient is cured or not. However in some patients, in spite of complete cure, repeated hCG level measurement in serum may be falsely elevated due to the presence of heterophilic antibody in serum often leading to unnecessary surgery or chemotherapy¹. We report a case of choriocarcinoma who had repeated persistently elevated hCG levels in serum in spite of complete cure and normal urinary hCG level.

Case report

Mrs. KA, 35 year old P₂₊₂ was admitted on 13th August, 2005 with vaginal bleeding. She had her LMP on 25th May, 2005 with positive urine pregnancy test, for which she had undergone suction evacuation on 1st August, 2005. Curettage of the uterus was done on 8th August, 2005 for persistent vaginal bleeding which however continued. Her previous pregnancy was a full term normal delivery 7 years back.

On general examination, she had mild pallor. On speculum examination, cervix and vagina were healthy with blood coming out through the os. Vaginal examination revealed a bulky, soft, regular and mobile uterus with no palpable adnexal abnormality. After admission her serum b hCG level was 187500mIU/ml. Transvaginal sonography of pelvic organs revealed a bulky uterus having ill defined highly vascular lesion measuring 57x53 mm involving the endometrium with invasion into the myometrium. No abnormal ovarian mass was noted. Chest x-ray was normal. Provisional diagnosis was gestational trophoblastic neoplasia (GTN). Complete blood count, upper abdominal ultrasonography, liver and renal function studies were within normal limits.

As she was of low risk group, chemotherapy was started with methotrexate and folinic acid (methotrexate 50 mg intramuscularly on days 1, 3, 5

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& 7 and folic acid 15 mg intramuscularly 30 hours after each injection of methotrexate) from the next day. After one cycle of chemotherapy her serum b hCG level was 61642mIU/mL. However the patient and her husband insisted on operative removal of the tumor and she underwent total abdominal on 24th August, 2005. She was discharged on 1st September 2005. Cut section of the uterus showed a 5x6 cm hemorrhagic and necrotic growth invading the myometrium almost up to the peritoneal coat (Figure 1). Histopathological examination of the tumor mass showed a proliferative trophoblastic tissue with extensive area of hemorrhage and invasion of the superficial part of myometrium. Taking into account the very high serum b hCG level, the diagnosis of choriocarcinoma was done. Chemotherapy was restarted after 3 weeks of operation by methotrexate and leucovorin and her serum b hCG level was progressively decreased to 71.85 mIU/mL after 4 courses of chemotherapy. However after the 5th cycle her serum b hCG level increased to 91.72 and further to 115.95 mIU/ml after the 6th cycle. These tests were carried out either by Microparticle Enzyme Immunoassay using ABOTT AXSYM kit or by Enzyme Linked Fluorescent assay using Mini Vidas by BIOMERIEUX. Both showed persistently elevated serum b hCG levels. The ABOTT AXSYM b hCG is commonly used in most of the laboratories and

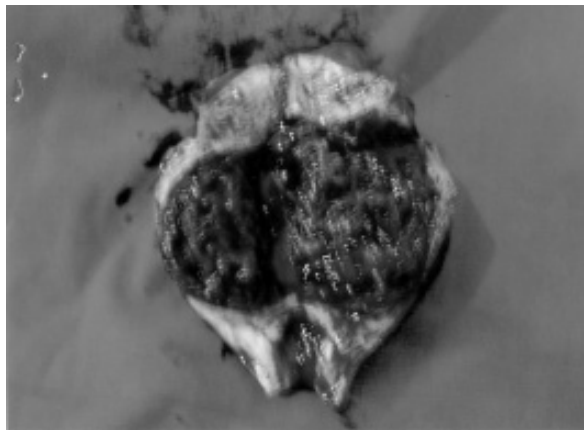


Figure 1. Sagittal section of uterus and cervix showing tumor mass invading the myometrium almost up to the peritoneal layer.

unfortunately ABOTT AXSYM b hCG has an exceptionally high false positive level problem². b hCG in urine was estimated at 2 weeks intervals and surprisingly the levels were within normal limits after six postoperative chemotherapy cycles. Chemotherapy was stopped, the patient is under follow up and is doing well 8 months after stopping chemotherapy. She is being regularly followed up and in January 2007 urinary b hCG was normal.

Discussion

The commonly employed technic for detection and quantification of hCG is the sandwich type immunoassay. These tests use a monoclonal antibody against the b subunit. In some women due to the presence of heterophilic antibodies in serum, the tests show elevated b hCG level. The American College of Obstetricians and Gynecologists (2002) has suggested alternative laboratory technic, if heterophilic antibodies are suspected³. False positive test should be suspected if hCG values plateau at relatively low levels and do not respond to chemotherapy. Evaluation should include urinary hCG estimation. Heterophilic antibodies are not excreted in the urine. Therefore urinary hCG will not be detectable if they are the cause of serum elevation. This false positive elevation of hCG leads to extirpative surgery or chemotherapy or both without significant diminution of hCG titre. So current protocol for the diagnosis or treatment of choriocarcinoma should be modified to include compulsory hCG estimation in urine¹.

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