A KRUKENBERG TUMOR CASE PRESENTING WITH HIRSUTISM

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ABSTRACT

Metastatic ovarian tumors which have gastric origin are called Krukenberg tumors. A twenty eight years old woman was admitted to our clinic with a history of abdominal pain, weight loss and signs of hirsutism. Abdominal and pelvic examinations revealed a solid mass above the umblicus and a mobile mass in the right adnexial region. Ultrasonographic findings confirmed a solid mass at the right adnexial area with fluid in the Douglas pouch, an enlarged liver and a thickened stomach wall suggesting metastatic ovarian cancer. The biopsy taken during endoscopy revealed a gastric carcinoma. The unexpected hirsutism symptoms of the patient did not have any correlation with her serum testesterone and DHEA-S levels. The persent article reports a Krukenberg case with endocrine activity.

Key Words: Krukenberg tumor, hirsutism

INTRODUCTION

The term Krukenberg tumor is usually applied to bilateral bulky tumor with involvement of both ovaries and retantion of their shapes characterized by diffuse infiltrates or mucin producing signet ring cells. It was first introduced to literature in 1886 and called as fibrosarcoma mucocellulare carcinomatoides (1). Several studies showed that these tumors are metastatic rather than primary growth. Endocrine behaviour of these tumors were rarely reported and most of them included estrogenic effects rather than androgenic. This case presents an endocrine active Krukenberg tumor.

CASE REPORT

A twenty-eight year old woman with four children who had her last delivery four months ago was admitted to the clinic with a history of abdominal pain localized at the umblical and suprapubic region which increased in the last three months. During this time she had lost 15 kilograms and had irregular menstrual periods, temporal bolding and excessive hair growth. She experienced no change in her bowel habits. Physical examination revealed a solid mass above the umblicus and a mobile mass at the right adnexial region was palpated during both abdominal and pelvic manual examination. Abdominal and pelvic ultrasonographic findings showed a thickened stomach wall suggesting a possible carcinoma or lymphoma.

Her left ovary was enlarged and at the right ovarian lodge, there was a solid mass with the dimensions of 145 x 100 x 95 mm. showing heterogenous echoes, with fluid in the Douglas pouch. The liver size was within the upper normal limits and the right kidney showed hydronephrosis with parenchymal thinning probably due to a compression of the mass to the ureter. The biopsy taken in another center prior to admission to our hospital revealed chronic superficial gastritis. However an endoscopy guided biopsy was repeated in our hospital which revealed gastric

carcinoma. Serum testesterone and DHEA-S levels and the other laboratory tests were completely within the normal ranges. The patient underwent an operation. During the operation a right ovarian mass about 15x10 cm and a left ovarian mass about 5x5 cm were observed, the stomach appeared as linitis plastica. There were nodular masses on the liver, parietal peritoneum, ovaries and bowel serosa. The adnexial masses were removed and the frozen results indicated signet ring cell carcinoma. The case was considered inoperable due to the widespread metastasis of the tumor. The patient was discharged on the 7th postoperative day without any complications.

DISCUSSION

Krukenberg tumors are composed of large, rounded, often vacuolated cells, many of which exhibit the classic apperance of signet ring cells. The ovary is a fairly frequent site of metastasis from certain primary carcinomas. Nearly 10% of ovarian tumors are not primary in origin. An acinous structure of primary origin may be preserved in some areas of the metastatic tumors, suggesting that ovarian environment may accentuate the characteristic signet ring structure. The mode of spread to the ovaries may be either by direct implantation, lymphatic, hematogeneous or a combination of these (2).

Hirsutism, an interesting feature of our case, had been rarely an observed symptom in Krukenberg tumor cases. Although germ cell tumors of the ovary like dysgerminoma and gonadoblastoma may show androgenic activities in rare instances, it is the characteristic feature of the sex cord stromal tumors to have endocrine manifestations. The sertoli Leydig cell tumors are the most common ones known with the effects of masculinization and androgen over production. There are only few cases reporting the androgen over production in Krukenberg tumors. All of these cases were presented with virilization during pregnancy which disappeared after postpartum period despite the fact that, ovarian tumor was still present. Spadoni et al (3) reported a Krukenberg tumor case in a pregnancy which showed virilism findings of the female infant. Tureneen discussed the estrogenic capabilities of Krukenberg tumors with a study of pre and post operative urinary estrogens. The preassumed feminizing agent is the ovarian stroma or the tumor matrix which is converted into theca like type of cells (4). More recently an androgenic role has been ascribed to same cells. The common ancestry of the stromal cell with thecal tissue may explain the potential for producing androgenic and estrogenic hormones which have similiar biochemical structures (5). The role of pregnancy in the etiology of virilization can depend on HCG that may cause ovarian stimulation. The high amounts of various plasental steroids become available for different kinds of hormone production during pregnancy (6). However in our case, the last delivery was about 4 months ago and indeed the hirsutism complaint had begun after pregnancy. The blood chemistry did not prove any overt hormone production but the bioactivity of hormones might have been increased, The excessive hair growth may be the result of decreased sex hormone binding globulin levels due to involvement of the liver. An altered response of the hair follicles to the normal ranges of testesterone and DHEA-S may be another mechanism explaining the hirsutism of the patient. As a conclusion when a Krukenberg tumor is confronted endocrine activities of the tumor has to be considered.

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