Diagnostic Dilemma: Non-gestational or Gestational Choriocarcinoma of the Ovary

Sir,

Choriocarcinoma most commonly occurs in the uterine corpus in women of reproductive age group. The clinical diagnosis easy to confirm in the presence of history of antecedent pregnancy and elevated levels of the urinary or serum level of human chorionic gonadotropin (HCG). Cerebral metastases occur in 10-20% of the patients with choriocarcinoma and are a leading cause of death. Thus, choriocarcinoma is easily diagnosed in reproductive women owing to close association with pregnancy and high HCG level, but the clinical diagnosis is difficult in cases of ectopic origin, post menopausal patients and children.

Primary choriocarcinoma of the ovary is a rare neoplasm. According to its histologic origin, it is classified as gestational or non-gestational. Gestational ovarian choriocarcinoma may arise in an ovarian pregnancy or represent metastases from intrauterine or intra-tubal primary disease. The estimated incidence of primary ovarian gestational choriocarcinoma is reported as one in 369 million pregnancies. In infants, it is considered to be due to metastases from the placenta. Non-gestational ovarian choriocarcinoma is exceedingly rare and usually associated with other germ cell tumours such as immature teratoma, endodermal sinus tumour, embryonal carcinoma and dysgerminoma. A primary germ cell origin any be difficult to prove purely on the histological basis except in those developing in the premenarchal or virginal patients. Thus, non-gestational choriocarcinoma can be accurately diagnosed only in prepubertal period. Diagnosis is made with the help of surgical or autopsy specimen. Diagnosis of pure non-gestational choriocarcinoma is uncertain without the DNA analysis and genetic analysis must be a useful tool in determining the origin of the choriocarcinoma. Confirmation of the gestational origin usually relies on detectable products of conception. DNA polymorphism analysis can be utilized to distinguish pure non gestational choriocarcinoma of the ovary from gestational choriocarcinoma. Genetic analysis thus can be a useful modality in determining the origin of the choriocarcinoma. Human leukocyte antigen typing for paternal antigen in trophoblastic elements may have an application in determining the gestational etiology. Markedly elevated levels of serum human chorionic (hCG) levels are more frequently associated with gestational tumours but considered unreliable.

Differentiating the gestational from the non-gestational type has been considered clinically important, because the non-gestational type requires more aggressive therapy and has a worse prognosis than the gestational type. The advent of chemotherapy has resulted in marked improvement in patient survival and even in the high risk disease, two thirds of the patients can be successfully treated. Gestational choriocarcinoma has shown good response using single agent chemotherapy with Methotrexate or Actinomycin-D. Triple agent chemotherapy is recommended in cases with distant metastases to the liver or central nervous system, post term gestational trophoblastic disease and pre-treatment serum HCG levels greater than 40,000 mIU/ml or interval of more than four months since pregnancy. Extreme rarity of non gestational choriocarcinoma hinders therapeutic considerations. However, triple agent chemotherapy has been advocated strongly in view of associated poor prognosis.

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