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CASE REPORT

Uterine Choriocarcinoma: A Diagnostic Challenge (A Rare Case)

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ABSTRACT

Choriocarcinoma is a rare form of cancer, which commonly occurs in women of reproductive age, rarely in postmenopausal women and in women under 20 years of age. This case reports a 31-year-old P_3L_3 woman, who was presented to the emergency room with complaints of profuse bleeding per vaginum. Although the initial diagnostic and radiographic findings favored the possibility of uterine arterio-venous (AV) malformation and treatment was planned accordingly, it was the final histopathological findings that confirmed the entity as Choriocarcinoma of the uterus.

The purpose of reporting this case is to highlight the need for differential diagnoses to be considered in a limited resource emergency situation. The need for accurate diagnosis is of paramount importance, because definitive treatment is largely based on it, and it is possible to achieve a 100% cure rate in low risk patients; 80-85% in high-risk patients with Choriocarcinoma of uterus.

***Keywords:** Uterine Choriocarcinoma, Arteriovenous malformation, beta HCG*

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INTRODUCTION

Choriocarcinoma is a highly malignant tumor of trophoblastic origin. Choriocarcinoma is a biphasic proliferation of trophoblast and syncytiotrophoblast, with morphology similar to primitive trophoblast of the placental previllous stage; chorial villi are absent in this tumor type. Choriocarcinoma shows variable clinical signs and symptoms, the most frequent being abnormal uterine bleedings.[1] Gestational Choriocarcinoma is a rare complication of pregnancy with incidence of 1 in 20,000 to 1 in 45,000 in western countries, and usually arising from a prior molar pregnancy or rarely on non-molar gestation within 1 year of antecedent pregnancy.[2]

The purpose of this case report is to illustrate the difficulty in diagnosing a case Choriocarcinoma, especially when adjuvant modalities can be non-specific and misleading. Definitive diagnosis is always established by histopathological study.

CASE HISTORY

A 31 year old, P_3L_3 woman delivered by elective repeates cesarean section 36 days back presented to the emergency department with history of irregular episodes of bleeding per vaginum (p/v) since delivery and is increased for past 4 days. She also complained of mild supra-pubic pain, which was cramping in nature. Prior to presentation to our centre, she had 2 units of packed cell transfusion. On examination her pulse rate was 114 beats per min, and her blood pressure was 90/60 mm Hg. Per abdomen examination showed uterus of 24 weeks. Following vaginal examination she had a sudden gush of bleeding. There

was no evidence of trauma, sub urethral or cervical lesion. She was advised hospitalization and was haemodynamically stabilized with intravenous fluids and was transfused with one unit of packed cell. Her blood grouping was O positive and hemoglobin value was 8.3 gm/dl. All other lab values were within normal parameters. An ultrasound abdomen study demonstrated increased vascularity of the uterus. MRI images presented with brilliantly enhancing serpigenous nidus of vessels at fundus and anterior wall of uterus with faint calcification suggestive of retained products of conception (placental remnants) and arteriovenous malformation. Uterine vessels were grossly dilated and tortuous, while parametrial vessels more prominent on the right than left (**Figure 1**). Beta HCG value was 8,000 IU/ L. Uterine bleeding was massive and persistent.

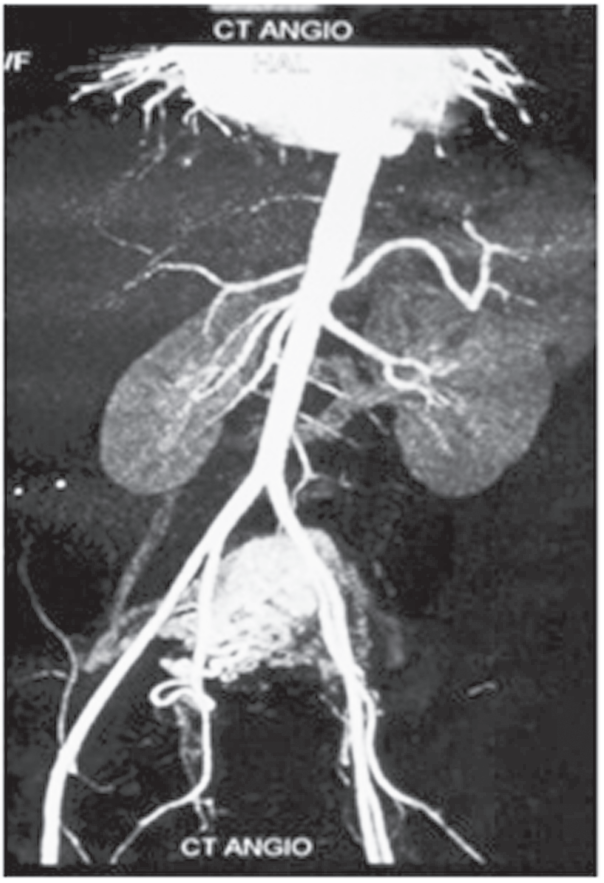

Figure 1 Brilliantly enhancing serpigenous nidus of vessels at fundus and anterior wall of uterus with faint calcification suggestive of retained products of conception (placental remnants) and arteriovenous malformation

Following multidisciplinary discussion with interventional radiologist and vascular surgeon; the possibility of AV malformation with persistent bleeding, hysterectomy was decided as the treatment of choice. Intraoperative findings showed uterus of 18 weeks with grossly dilated and tortuous vessels that were consistent with the appearance of an AV malformation. Hysterectomy was completed and the post-operative period was uneventful. The cut section of uterus showed a growth of size 4 x 3 cms occupying the uterine cavity (**Figure 2**) and the specimen was sent for histopathological evaluation (HPE).

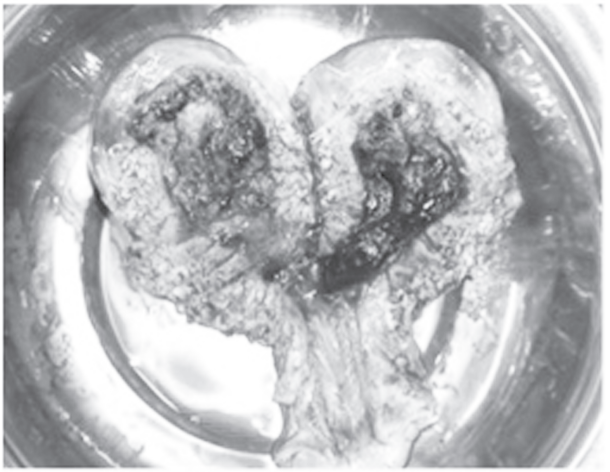

Figure 2 Cut section of uterus showing a growth of size 4 x 3 cms occupying the uterine cavity

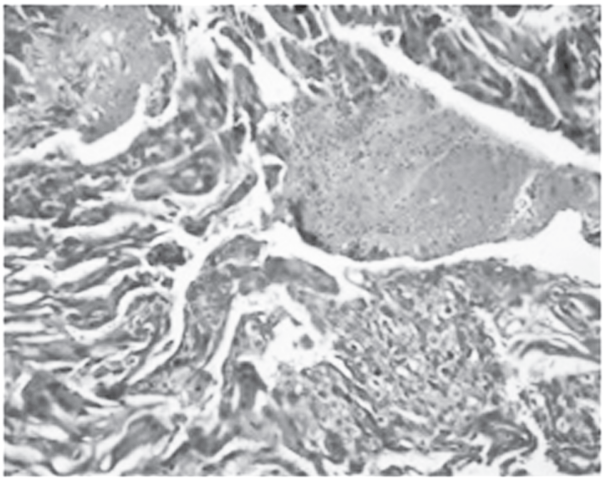

Figure 3 HPE demonstrating biphasic growth pattern with mononuclear trophoblastic cells residing adjacent to syncitiotrophoblastic cells. Nuclear pleomorphism and hyperchromasia are striking

Following HPE (**Figure 3**), a definitive diagnosis of choriocarcinoma of uterus was made and the TNM staging was: $pT_1N_0M_0$. Immunohistochemistry (IHC) with Ki67 was 70% positive for choriocarcinoma. Subsequent investigations for distant metastasis were negative and concurrent treatment with methotrexate and folinic acid was started. Repeat beta HCG was 1000 IU/L after 1 week. Patient was given 3 courses of chemotherapy and beta HCG was followed up. Following three cycles of chemotherapy her beta HCG value was less than 2 IU/L.

DISCUSSION

Choriocarcinoma is a rare condition and can be divided into gestational and non-gestational types. Gestational choriocarcinoma mostly occurs in woman of reproductive age group, usually within one year following molar or non-molar pregnancy. Non-gestational is common in postmenopausal women. Gestational choriocarcinoma may follow after any type of pregnancy as in hydatiform mole, normal term pregnancy, an abortion or even after an ectopic pregnancy.

Choriocarcinoma should be suspected when there is persistent or irregular uterine bleeding following molar pregnancy, abortion or normal delivery. The diagnosis of choriocarcinoma needs a high index of suspicion and is often difficult in resource-limited sittings. Rapid growth and haemorrhage makes the tumor a gynecological emergency.[2]

Serum Beta HCG is an important investigation in diagnosis and monitoring the prognosis of the disease. It is a sensitive and reliable indicator of the condition. IA McNeish et al have proposed a new system of scoring: *Charing Cross Scoring system* (**Table 1**), which further reduces the risk of unwanted exposure of chemotherapy.[4,5] According to this system the use of methotrexate (MTX) and folinic acid (FA) regimen is recommended for low risk (0-8) and EMACO (Etoposide, Methotrexate, Actinomycin D, Cyclophosphomide and Oncovin) for high risk (>8). The treatment regime for the low risk group is with MTX 50 mg intramuscular on day 1, 3, 5, 7 with FA orally on day 2, 4, 6, 8 is repeated every 2 weeks and for high risk group infusion with **EMA-CO regimen** is followed (**Table 2**).[6]

Table 1 Charing Cross Scoring System

Variable	0	1	2	6
Age (years)	<39	>39		
Antecedent pregnancy (AP)	Mole	Abortion/ unknown	Term	
Interval between AP to treatment (months) hCG (IU l^{-1})	<4	4–6	7–12	>12
	10^3–10^4	<10^3	10^4–10^5	>10^5
ABO blood group (female x male)		A x O	B x O or O	
		O x A	AB x A or O	
		O or A x unknown		
Number of metastases		1–4	4–8	>8
Site of metastases	Lungs, vagina	Spleen, kidneys	Gastroin-testinal tract, liver	Brain
Largest tumour mass	<3 cm	3–5 cm	>5 cm	Two
Previous chemotherapy			Single drug	or more drugs

hCG = human chorionic gonadotrophin; Charing Cross System – low risk: 0-5, intermediate risk: 6-9, high risk: >9. Sheffield modification – low risk: 0-7, high risk: >7

Table 2 EMA-CO Regimen

Course 1 EMA	
Day 1	Actinomycin D 0.5 mg IV stat, Etoposide 100 mg/m^2 in 200 ml normal saline over 30 minutes, Methotrexate 300 mg/m^2 IV 12 hours infusion
Day 2	Actinomycin D 0.5 mg IV stat Etoposide 100 mg/m^2 in 200 ml normal saline over 30 minutes Folinic acid 15 mg per os or IM BD for 4 doses starting 24 hours after the start of Methotrexate
5-day drug-free interval to course 2	
Course 2 CO	
Day 1	Vincristine 1.0 mg/m^2 IV stat (maximum 2.0 mg) Cyclophosphomide 600 mg/m^2 IV infusion over 20 minutes
6-day drug-free interval	

Being a highly malignant tumor, metastasis is common and occurs in lungs, pelvis and vagina. If left untreated choriocarcinoma is likely to transform into malignant trophoblastic disease. Metastasized stage on diagnosis is common in patients with choriocarcinoma, with a rate of 30%. In a few cases choriocarcinoma may spread distantly and some reports mention lung metastasis as a common site while others suggested that it rarely results in pulmonary metastases. Other locations likely to have metastases include brain, liver, kidney and bowel.[7]

Uterine arteriovenous malformations (AVMs) are usually diagnosed in women with unexplained vaginal bleeding and is frequently life threatening.[8] Choriocarcinoma should be considered as an important differential diagnosis in cases of uterine AV malformation.[9] In the reported case, in view of P_3L_3 pregnancy, with a Charing Cross score of 3, with torrential uncontrolled bleeding P/V, the patient was managed by hysterectomy followed by three cycles of chemotherapy.[10]

CONCLUSION

Sudden massive vaginal bleeding is the most frequent presentation in an OBG emergency department. The diagnosis of choriocarcinoma/AV malformation should be considered when a patient presents with sudden severe vaginal bleeding following caesarean section or dilatation and curettage. USG and beta HCG should be performed for diagnosis, as both are differential diagnosis for each other.

Consent of the patient: Obtained

Conflict of interest: None

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