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Spontaneous renal hemorrhage caused by invasive mole: a case report

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Summary

Case: The authors report a case with spontaneous renal hemorrhage caused by invasive mole. The diagnosis was gestational trophoblastic disease (GTD), with metastasis to brain, kidneys, and lungs at Stage IV. The patient was given etoposide-methotrexate-actinomycin D plus cyclophosphamide-vincristine (EMACO) treatment regimen for 11 times including three times with consolidation chemotherapies. Laparoscopically-assisted vaginal hysterectomy (LAVH) + laparoscopic-assisted left renal excision + evacuation of the left perirenal hematoma were performed during the eighth chemotherapy. *Conclusion:* Post-operational pathological examination revealed trophoblasts within the lesions present in uterine fundus and the residue images of a few trophoblasts present in the left renal mass.

Key words: Metastasis of invasive mole renal; Chemotherapy; Spontaneous rupture of kidney.

Introduction

Spontaneous renal hemorrhage is an unusual and severe complication of female urinary tract infection. The invasive mole commonly occurs within six months after the pregnancy of hydatidiform mole. Because of the strong invasiveness of the trophoblastic tumor cells into the blood vessels and tissues, the lesions frequently become necrotic and hemorrhagic. Thus, these patients have abnormal bleeding frequently occurring in their reproductive tract and the symptoms caused by the metastasis of the hemorrhaging lesions throughout the whole body. The most commonly metastatic sites are lungs (80%), vagina (30%), pelvic cavity (20%), liver (10%), and brain (10%) [1]. The metastasis of trophoblastic tumor cells to kidney occurs rarely. The patients usually show the symptoms of bloody urine, abdominal pain, and even the perirenal bleeding caused by renal hemorrhage [2, 3]. With the development of imaging technologies for diagnosis, the accurate measurement of hCG levels and the availability of the effective chemotherapeutic medicines, the serious cases of patients with trophoblastic tumor at later stages are rarely seen. Particularly for the present patient, the timing of her last pregnancy was uncertain and the incubation period for the development of trophoblastic tumor was lengthy. A complete curettage of uterine cavity was performed in the local hospital when abnormal vaginal bleeding occurred. No pregnant tissues were biopsied and no quantitative measurement of blood β-hCG was conducted, leading to an incorrect diagnosis and treatment. Until the trophoblastic tumor metalizes to the kidney and causes perirenal hemorrhage due to renal fracture, the disease is clearly and definitely diagnosed. At that time, the lesions had already metalized to lung, brain, and kidney and to other parts of the entire body. These significantly affected the prognosis of the treatment periods for this patient. Thus, when clinical physicians cannot explain an abnormal vaginal bleeding with pregnancy, they should be precautious to the possibility of gestational trophoblastic disease (GTD) so that an incorrect diagnosis and treatment can be avoided.

Etoposide-methotrexate-actinomycin D plus cyclophosphamide-vincristine (EMACO) chemotherapy is currently the most commonly used regimen for the treatment of the high-risk gestational trophoblastic tumor [4]. The effectiveness of this treatment is quite good and the re-occurrence rate is low. The intrathecal injection of chemotherapeutic medicines cannot only increase the effectiveness for treating the lesions present within brain, but can also monitor the changes in hCG levels in cerebrospinal fluid. Since this patient did not have the demand to give birth., due to the persistent presence of the lesions in her left kidney and uterine, laparoscopically-assisted vaginal hysterectomy (LAVH) + laparoscopic-assisted left renal excision + evacuation of the left perirenal hematoma were performed. For reducing the metastasis of cancer cells during the operation and for preventing the re-occurrence of the cancers caused by the residue cancer cells, adjuvant chemotherapy before and after operation is needed [5]. It is generally thought that after the blood hCG level is reduced to the normal level, at least two to three consolidation chemotherapies should be given. Due to the high-risk metastasis, especially for the patients in Stage IV, drug-resistance and severe prognosis occur frequently. Thus, on

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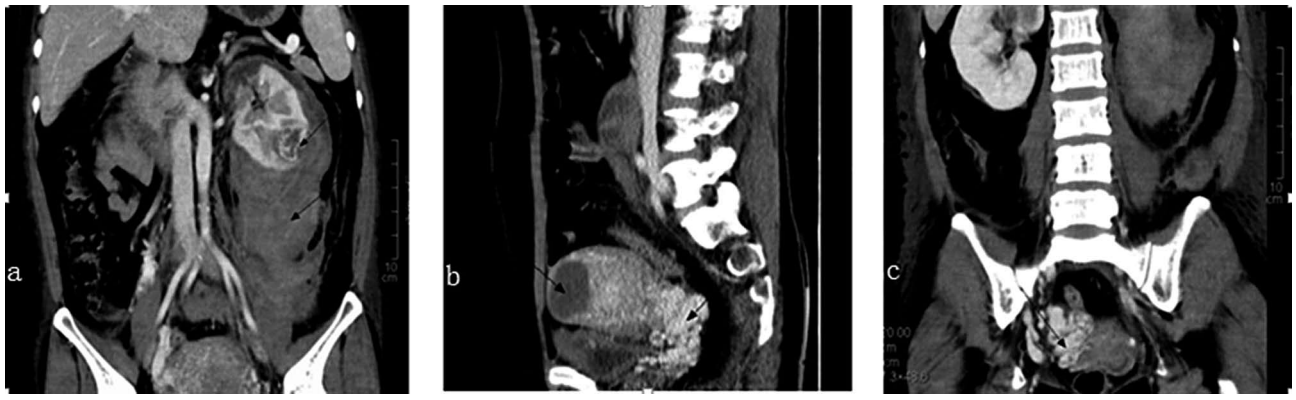

Figure 1. — Enhanced abdominal CT scan at presentation showing a left perirenal hematoma; low density lesion of the uterine and varicose veins of the right adnexa (indicated by arrows).

the basis of combined chemotherapies, proper surgical therapy should also be selected.

Case Report

This was a 41-year old female patient with gravida 5 and para 3 (G5P3). She had an irregular vaginal bleeding for more than four months, at one year after a complete curettage of uterine cavity was performed. She had left lumbar abdominal pain for ten days. She was referred from a local hospital to this hospital on January 18, 2013. In February 2012, she had vaginal bleeding for two hours after cessation of menstruation for 50 days. She was diagnosed positively for hCG in a urine test by the local hospital. B-ultrasound examination revealed an incomplete abortion. A complete curettage of uterine cavity for the emergency treatment was performed, but no pregnant tissue was biopsied. She had a bradymenorrhea and endless vaginal bleeding for more than four months after this procedure. On June 2012, a complete curettage of uterine cavity was performed again and a small amount of tissues was biopsied. Pathological examination revealed secretory endometrium, endometrial polyps, and decidualization of endometrium. On September 9, 2012, her urine test showed the positivity for hCG. B-ultrasound examination revealed a low-echo mass with a size of 56×47 mm present at the uterus fundus. On January 8, 2013, she felt cutting pains in her left upper abdomen and waist, and the pains were persistent and vigorous. No gross hematuria, no frequent urination, no urgent micturition, and no painful micturition etc. were seen. On January 15, 2013, CT scan conducted by the local hospital revealed tumors present on both kidneys and the left renal tumor was hemorrhagic.

The patient's past medical history included a spontaneously normal delivery in 1995, 1996, and 1999, respectively. Her menstrual cycle at 5~7/28~30 days was regular. Since her vaginal ring removed in June 2011, she did not take any measures for birth control.

Physical examination on admission included a body temperature of 36.3°C, pulse was 82 times/minute, respiration rate was 20 times/minute, and blood pressure was 100/75 mmHg. She displayed a pale appearance but showed no abnormality in cardiac and lung auscultation. The left side of her waist was plump and large pieces of ecchymosis were seen. Tenderness occurred in her left upper abdomen, left side of waist, and left renal area. No percussion pain was felt in the right renal area.

Gynecological examination confirmed no abnormality in the vulva. Cervical hypertrophy, mild cervical erosion, and anteposition of uterus were seen. The pregnancy was about the size of two months. There was light tenderness. The adnexal area at the right side was thickened and showed obvious tenderness. There were untouched masses in the left adnexal area.

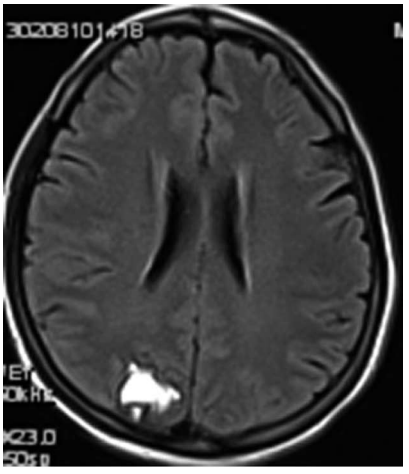

Figure 2. — MRI image of the brain.

Auxiliary examination showed that the level of hemoglobin was 72 g/L, the level of blood β-hCG level was 462,047 mIU/ml, and the level of cerebrospinal fluid β-hCG level was 1,154 mIU/ml. The functions of liver and kidney functions were normal. B-Ultrasound examination of abdominopelvic cavity showed a high-echo mass with a size of 34×38mm detected in the mid-section of the kidney but the boundary was not clear. Large pieces of mixed echo masses were present in left perirenal area, left appendage area, and left pelvic cavity, and size of the larger mass was in the range of 110×50 mm, indicating a hematoma. The size of uterus was 81×56×70 mm. Thoracic imaging demonstrated multiple nodules in both lungs. The right mediastinum was broadened. Small amount of pleural effusion was present in the left side of thoraces. Enhanced abdominal CT scan confirmed the following: 1) left kidney was fractured, leading to the formation of perirenal hemorrhage; 2) right kidney was abnormal and its density was altered; 3) uterus hypotrophy and varicose veins were seen in the right appendage area as seen in Figure 1. MRI of the head showed an ir-

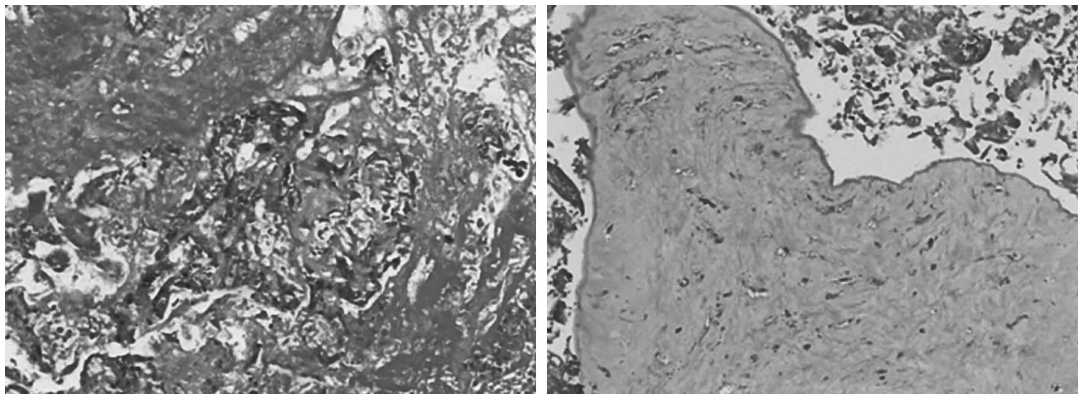

Figure 3. — Pathological foci of the neoplastic cells consistent with invasive mole (H&E staining, magnification: ×200).

regular, plate-shaped mixed signal lesion with a size of 1.8×1.98 cm in the right parietal lobe of the head (Figure 2).

Hospital diagnostic considerations included: 1) GTD with metastasis to brain, kidneys, and lungs in Stage IV; 2) left renal hemorrhage; and 3) blood loss anemia

A treatment regimen of EMACO was started on January 26, 2013. A total of 11 chemotherapies were administered, including eight chemotherapies and three consolidation chemotherapies. Before the chemotherapy was commenced, the patient was given β-hCG at 474,214 mIU/ml. At the eighth chemotherapy, the dose of β-HCG was reduced to 7.54 mIU/ml. During the period of consolidation chemotherapies, the dose of β-hCG was at < five mIU/ml. Due to the metastasis of trophoblastic tumor cells to brain, four chemotherapies with MTX were given via an intrathecal injection. Before chemotherapy was given, the concentration of β-hCG in cerebrospinal fluid was 1,154 mIU/ml. After the second, third, and fourth chemotherapies, the concentrations of β-hCG in cerebrospinal fluid were 2, 0.731, and 0.68 mIU/ml, respectively. Imaging examination was performed at the fixed schedules. This examination revealed that lesions present in the brain, lung, and two kidneys, the left perirenal hematoma, and lesions present at the uterus fundus were gradually absorbed and reduced. After the fourth EMACO chemotherapy, re-examination revealed a complete disappearance of the lesions in lungs. After the seventh EMACO chemotherapy, re-examination revealed the presence of portions of hematoma with the size of 137×59 mm. A mixed echo-node with the size of 28×25 mm was seen in the uterus fundus. The blood flow signals were not abundant. The left perirenal hematoma was seen. The functionally damaged left kidney and the uterus lesions were still present. Because this patient had no demand to give birth, after obtaining her approval and informed consent, LAVH + laparoscopic-assisted left renal excision + evacuation of the left perirenal hematoma were performed on June, 6, 2013 during the period of the eighth chemotherapy. The post-operational pathological results were as follows: a small amount of residue image scattered on the obviously deformed chorionic villus and trophoblasts within the lesions present in the uterine fundus were seen and the residue images of a few trophoblasts in the left renal hematoma were also seen (Figure 3). Post-operational diagnosis included invasive mole (at Stage IV) [6]. The patient received three postoperative consolidation EMACO chemotherapies. Follow-up has been performed until the present. No re-occurrence of clinical symptoms and the relevant medical images were seen to date.

Conclusions

This report indicates that when clinicians cannot explain abnormal vaginal bleeding with pregnancy, they should be cautious to the possibility of GTD so that incorrect diagnosis and treatment can be avoided.

Acknowledgements

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