



Short communication

The application of hysteroscopy in gestational trophoblastic disease

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ABSTRACT

Objective: The purpose of this article is to describe the application of hysteroscopy in different cases of gestational trophoblastic disease.**Materials and methods:** Three patients who presented with gestational trophoblastic disease were managed with hysteroscopy. The first case was a hydatidiform mole that underwent transcervical resection with endometrial curettage. The second case had a history of suction curettage for hydatidiform mole. She underwent transcervical resection for retained products of conception. The third case had a history of suction curettage for hydatidiform mole. In contrast with the second case, the patient had rising β human chorionic gonadotropin (β -HCG) values prior to transcervical resection and eventually underwent chemotherapy in the form of methotrexate.**Results:** The surgical procedure was uneventful in all three patients. All three operations were performed in <15 minutes. The blood loss was <50 mL, and there was no fluid deficit.**Conclusion:** Different cases of gestational trophoblastic disease can be managed effectively by hysteroscopy.

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Introduction

Although hysteroscopy has been a popular topic for research, the concept of using this method for gestational trophoblastic disease is relatively new. With the advancements made in hysteroscopy, applying this method to offer better treatment options for gestational trophoblastic disease is now a possibility. We present three cases of gestational trophoblastic disease—one hydatidiform mole, one case of retained trophoblastic tissue, and one case of gestational trophoblastic neoplasia.

Materials and methods

Patients

Case 1

A 35-year-old woman, G3P0, presented with 7 weeks amenorrhea and vaginal spotting. Ultrasonography showed an

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endometrial cavity with a single gestational sac. Within the gestational sac was an embryonic pole with no cardiac activity. Occupying the gestational sac at its peripheral pole was an irregularly shaped complex mass (Figure 1). Baseline serum β human chorionic gonadotropin (β -HCG) was 111,582 mIU/mL. Chest x-ray was negative. The patient underwent hysteroscopy with endometrial curettage.

Case 2

A 46-year-old woman, G2P2, underwent suction curettage for complete hydatidiform mole. Chest x-ray was negative. Her initial β -HCG was 8856 mIU/mL. She had regular follow up with decreasing β -HCG values. Two months after the operation, she complained of vaginal spotting. Ultrasonography showed a slightly thickened endometrium with a hyperechoic mass suggestive of retained trophoblastic tissues. Office hysteroscopy confirmed the retained trophoblastic tissue at the right cornu (Figure 2). β -HCG at this time was 187.7 mIU/mL. She underwent transcervical resection of the mass at the right cornu.

Case 3

A 33-year-old woman, G1P0, underwent suction curettage for hydatidiform mole. She remained asymptomatic and continued to have weekly β -HCG determinations. One week postcurettage, her

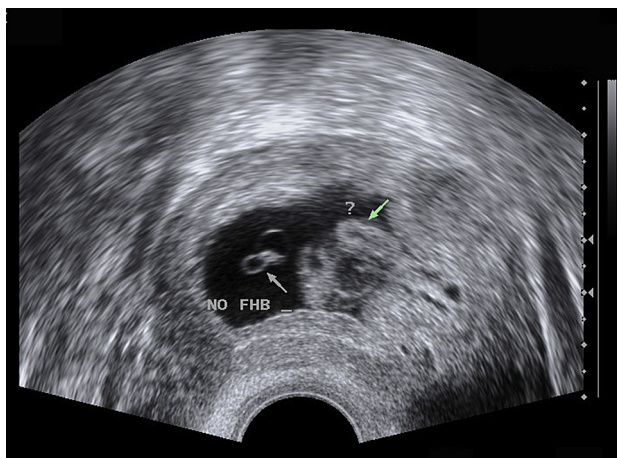


Figure 1. Ultrasound image showing an endometrial cavity with a single gestational sac. Within the gestational sac is an embryonic pole with absent cardiac activity. Occupying the gestational sac at its peripheral pole is an irregularly shaped complex mass (indicated by green arrow). NO FHB = no fetal heartbeat.

β -HCG was 1974 mIU/mL. A rise in the β -HCG 3 weeks after suction curettage to 5592 mIU/mL prompted further investigation. Meta-static workup was negative. On ultrasound, there was an irregular heterogenous mass occupying the endometrial cavity with dense vascularity and no note of any myometrial invasion. She underwent transcervical resection of the mass.

Surgical method

After administration of intravenous general anesthesia with oxygen supply by a mask, the patients were placed in the Trendelenburg position and supported in stirrups. Hysteroscopy was performed using a 26F continuous flow resectoscope fitted with a 90° wire loop (Karl Storz GmbH & Co., Tuttlingen, Germany). Distilled water was used for distention and irrigation. In the first case, intraoperative hysteroscopic findings showed a 10-week sized

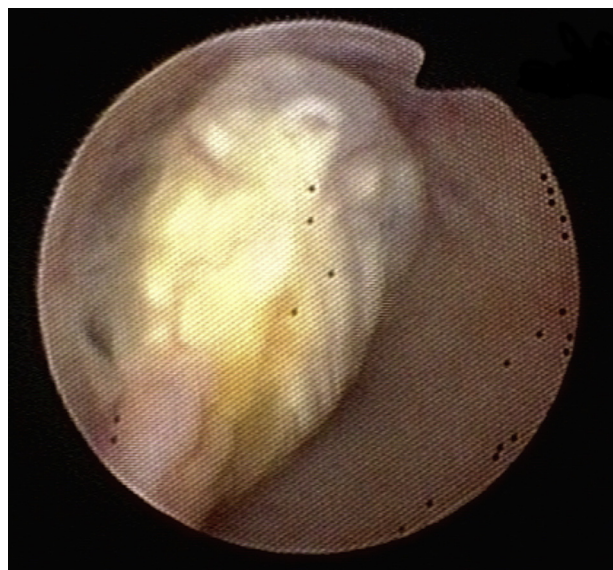


Figure 2. Hysteroscopic image of retained trophoblastic tissues at the right cornu of the uterus.

uterus containing grape-like vesicles (Figure 3). Gentle curettage was performed using a metal curette and the hysteroscope was reinserted to check the uterine cavity for any residual tissues. Electrodissection was not used, however, the wire was used as a curette to remove any residual tissue noted after curettage. Fluid balance was recorded and the specimen was sent to pathology for evaluation. The second and third case involved the same surgical method except that the metal curette was not used.

Results

The surgical procedure was uneventful in all three patients. All three operations were performed in <15 minutes. The blood loss was <50 mL and there was no fluid deficit. For the first case, the patient had an uneventful postoperative course. Histopathologic diagnosis was compatible with partial hydatidiform mole. Weekly serum β -HCG determinations performed after the operation showed decreasing levels at 183.1 mIU/mL, 22.7 mIU/mL, and 2.7 mIU/mL, respectively. The succeeding determinations remained within normal limits. For the second case, the histopathological result was compatible with retained trophoblastic tissue. β -HCG 1 week after the operation was 4 mIU/mL. The succeeding determinations remained within normal limits. For the third case, histopathologic evaluation was consistent with retained hydatidiform mole. The patient's β -HCG decreased to 345.2 mIU/mL, however, ultrasound showed a thickened endometrium at 1.42 cm. She underwent another transcervical resection but histopathology revealed only necrotic tissues. She underwent chemotherapy in the form of methotrexate, and β -HCG decreased to <2 mIU/mL after the third dose. She received the last two doses of chemotherapy as clean-up courses and her β -HCG levels remained at normal levels thereafter.

Discussion

Hydatidiform mole is an abnormal pregnancy characterized by trophoblastic proliferation of both the cytotrophoblast and syncytiotrophoblast.¹ It occurs in two out of 1000 women of reproductive age.¹ Early diagnosis of hydatidiform mole using ultrasound has changed the presentation of hydatidiform mole.^{1–3} In this case, the ultrasound picture did not show the classic snowstorm appearance found in molar pregnancy because it was seen at a very early stage. Molar pregnancy ultrasound findings in the first trimester are nonspecific because the villi are not hydropic.³ The elevated serum levels of β -HCG increased the suspicion of gestational trophoblastic

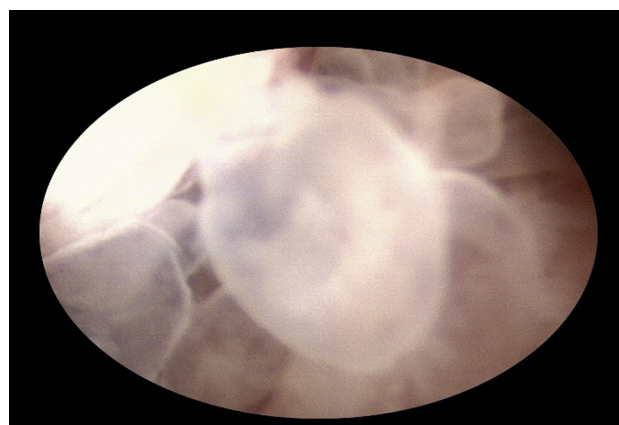


Figure 3. Hysteroscopic image of the grape-like pattern characteristic of hydatidiform mole.

disease. In the first case, hysteroscopy was most useful in confirming the diagnosis of hydatidiform mole. Direct visualization of the uterine cavity after curettage also ensures that all the trophoblastic tissues have been removed. The gold standard for evacuation of hydatidiform mole is suction curettage.^{2,4} Very few reports have utilized hysteroscopy in diagnosing molar pregnancy. Yanez et al⁵ reported a 31-year-old patient with elevated β -HCG and inconclusive ultrasound findings that confirmed the diagnosis of hydatidiform mole by hysteroscopy. Similarly Di Spiezio Sardo et al⁶ describes a 51-year-old woman with abnormal bleeding who was diagnosed with hydatidiform mole on office hysteroscopy.

The second case involves a patient with retained placental tissues after suction curettage for hydatidiform mole. Perez-Medina et al⁷ describes the hysteroscopic appearance of retained trophoblastic tissue which appeared as a whitish, well-defined cotton like structure that protrudes into the endometrial cavity and was surrounded by normal endometrial tissue. This description is very accurate and was clearly seen in the second case (Figure 2). One report by Wilczak et al⁸ describes a patient who exhibited persistently elevated β -HCG values after suction curettage for hydatidiform mole. A polypoid lesion was resected during hysteroscopy and subsequently brought the β -HCG values to normal levels. By contrast, the second case had decreasing β -HCG values despite having a visible mass at the right cornu. In time, the mass may have resolved on its own, given that there was no plateauing in the decline in β -HCG values. It is likely that transcervical resection of the mass aided in bringing down the β -HCG values to normal levels. Transcervical resection is an alternative procedure to the traditional dilatation and evacuation for retained trophoblastic tissues.⁹ The value of directly visualizing the endometrial cavity in cases such as these cannot be over emphasized. Because the mass was located at the right cornu, and it only occupied a small area of the uterine cavity, targeted removal of the tissue was the most useful approach. Visualization of the target area will help prevent inflammation and scarring which could occur if a blind procedure was performed.¹⁰ Further inflammation of the endometrium was avoided by using the wire of the resectoscope as a curette instead of electrocoagulation. Using electrical equipment is believed to cause surgical trauma and inflammation to the endometrium that can lead to adhesions in the future.⁷

The third case is more complex. The authors believe that the rise in the β -HCG is indicative of a Stage I gestational trophoblastic neoplasia. Suzuki et al¹¹ reported 21 patients suspected of gestational trophoblastic neoplasia who underwent hysteroscopy. Nine of the 21 patients had confirmed histopathologic findings of gestational trophoblastic neoplasia. Gestational trophoblastic neoplasia does not require a tissue diagnosis before initiating treatment. Traditionally, chemotherapy should have been the first option. Surgery for gestational trophoblastic neoplasia is reserved for resistant cases and if there are complications such as uncontrolled bleeding or uterine perforation.² It must be kept in mind that resecting such tumors can lead to unfavorable outcomes because the tumors are highly vascular and may have myometrial invasion. However, it can be presumed that the procedure helped in decreasing tumor burden thereby lowering the β -HCG that was instrumental in decreasing the number of doses of chemotherapy.

In patients with cancer, infusing a large amount of fluid inside the uterine cavity may cause tumor dissemination, which is a cause for concern. Lee et al¹² discussed the role of endoscopy in endometrial cancer. In their paper, the authors noted that seeding of cancer cells in the uterine cavity does not affect the prognosis of patients with endometrial cancer who underwent hysteroscopy and does not increase the spread of cancer.¹² In retrospect, the authors believe that the second transcervical resection was no longer necessary and that the chemotherapy in the form of methotrexate was crucial in bringing down the β -HCG to normal levels.

Conclusion

The three cases presented highlight how hysteroscopy can be applied to gestational trophoblastic disease. Using a hysteroscopic approach can offer several advantages such as direct visualization of the uterine cavity, removal of the mass without harming the healthy endometrium, and collection of specimens for histopathologic evaluation.¹³

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References

- Lurain JR. Gestational trophoblastic disease I: epidemiology, pathology, clinical presentation and diagnosis of gestational trophoblastic disease, and management of hydatidiform mole. *Am J Obstet Gynecol.* 2010;203:531–539.
- Berkowitz RS, Goldstein DP. Current management of gestational trophoblastic diseases. *Gynecol Oncol.* 2009;112:654–662.
- Alhamdan D, Bignardi T, Condous G. Recognising gestational trophoblastic disease. *Best Pract Res Clin Obstet Gynaecol.* 2009;23:565–573.
- Soper JT. Role of surgery and radiation therapy in the management of gestational trophoblastic disease. *Best Pract Res Clin Obstet Gynaecol.* 2003;17:943–957.
- Yanez RA, Landa CB, Coeto HA, Lopez LL. Diagnosis of molar pregnancy by hysteroscopy. *Ginecol Obstet Mex.* 2012;80:540–544 [In Spanish, English abstract].
- Di Spiezio Sardo A, Bettocchi S, Coppola C, et al. Hysteroscopic identification of hydatidiform mole. *J Minim Invasive Gynecol.* 2009;16:408–409.
- Pérez-Medina T, Sancho-Saúco J, Ríos M, et al. Hysteroscopy in pregnancy-related conditions: descriptive analysis in 273 patients. *J Minim Invasive Gynecol.* 2014;21:417–425.
- Wilczak M, Sajdak S, Woźniak J, Cwojdzinski M, Nowak-Markwitz E, Pisarski T. Hysteroscopy in the diagnosis and treatment of residual after evacuation of hydatidiform mole. *Ginek Pol.* 1994;65:522–526 [In Polish, English abstract].
- Rein DT, Schmidt T, Hess AP, Volkmer A, Schöndorf T, Breidenbach M. Hysteroscopic management of residual trophoblastic tissue is superior to ultrasound-guided curettage. *J Minim Invasive Gynecol.* 2011;18:774–778.
- Cohen SB, Kalter-Ferber A, Weisz BS, et al. Hysteroscopy may be the method of choice for management of residual trophoblastic tissue. *J Am Assoc Gynecol Laparosc.* 2001;8:199–202.
- Suzuki A, Kawaguchi K, Konishi I, Ida K, Fujii S, Matsuura S. Role of hysteroscopy in diagnosis and management of trophoblastic disease. *Nihon Sanka Fujinka Gakkai Zasshi.* 1984;36:255–260 [In Japanese, English abstract].
- Lee CL, Huang KG, Chen HL, Yen CF. The roles of endoscopy in endometrial cancer. *Taiwanese J Obstet Gynecol.* 2008;47:379–383.
- Hamerlynck TW, Blikkendaal MD, Schoot BC, Hanstede MM, Jansen FW. An alternative approach for removal of placental remnants: Hysteroscopic morcellation. *J Minim Invasive Gynecol.* 2013;20:796–802.