

# A giant nabothian cyst with massive abnormal uterine bleeding: a case report

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## Summary

The authors describe a rare case of a giant nabothian cyst in a 52-year-old woman. The patient had a history of massive abnormal uterine bleeding after heavy physical work. A giant cystic mass, originating from the cervix, was found completely filling the upper third of the vagina. The authors combined hysteroscopy examination with ultrasound to assess the cystic mass' localization, origin, and relationship with other organs. With the tentative diagnosis of a giant nabothian cyst, the patient was treated with a simple cervical incision and local drainage. The patient recovered well postoperatively and the diagnosis was confirmed through pathological examination.

**Key words:** Nabothian cyst; Hysteroscopy; Ultrasound; Abnormal uterine bleeding.

## Introduction

The nabothian cyst, which was first described by Naboth in 1707, is one of the most common gynecological conditions in reproductive-age women. It is often found incidentally during clinical vaginal inspection for other gynecological diseases. The etiology of this abnormality is obstruction of the endocervical glands due to inflammation or trauma. The nabothian cyst usually ruptures after it grows to a certain size, so it is most commonly only a few millimeters to three to four cm in diameter, and it is often asymptomatic with no special treatment needed [1]. Occasionally, nabothian cysts may grow to four cm or larger, and as the cyst grows, it may produce rectum or bladder pressure symptoms, abnormal uterine bleeding, or lower abdominal discomfort, therefore, it must be treated [2]. As it is benign, the ideal treatment is simple incision and local drainage. Adenoma malignums, degeneration of uterine leiomyomas, and cervix hydatid cysts can also result in a large cystic cervix and produce all of the above symptoms, but the treatments are completely different, so a full assessment and initial diagnosis is crucial before treatment.

Here the authors report a case of a giant nabothian cyst with massive abnormal uterine bleeding. To the best of their knowledge, no similar case has been described previously in the literature.

## Case Report

A 52-year-old woman, gravida 2 para 1, visited the present clinic after two episodes of massive abnormal uterine bleeding. The patient normally had regular menstrual periods. She had suffered from an episode of massive abnormal uterine bleeding after heavy physical work, producing about two times the amount of normal menstrual

blood, without abdominal pain or fever, and no vaginal discharge. She did not treat it, and the bleeding stopped spontaneously four days later. After that, she became amenorrheic for two months, with a negative pregnancy test. Then, she presented with massive abnormal uterine bleeding after heavy physical work again, with the same amount of blood loss as the first episode. She visited the present department after being treated by filling with sterile gauze at the local hospital.

On pelvic examination, a smooth, non-tender, cystic mass that completely filled the upper third of the vagina was palpated. It was about 6×5×5 cm and its surface was covered with large blood vessels. It seemed to originate from the anterior lip of the cervix and the posterior lip was pushed away. Uteral and dual attachment examination found no abnormalities. Transvaginal ultrasonography revealed a 4.3×4.7×4.1 cm anechoic cystic mass located below the cervical canal. The mass was visualized as having regular borders without any septum formation (Figure 1). The ovaries and the uterus were clearly defined and normal. The cervical cytological examination showed inflammation. According to these findings, the au-



Figure 1. — Ultrasonographic images of the anechoic cystic mass located below the cervical canal.

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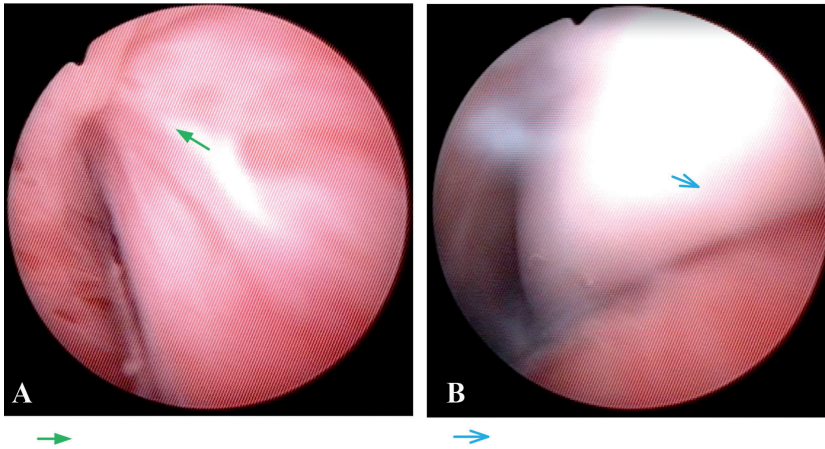


Figure 2. — Under hysteroscopy examination, the pedicle of the cyst (A) is seen to originate from the anterior wall of the cervical canal (B).

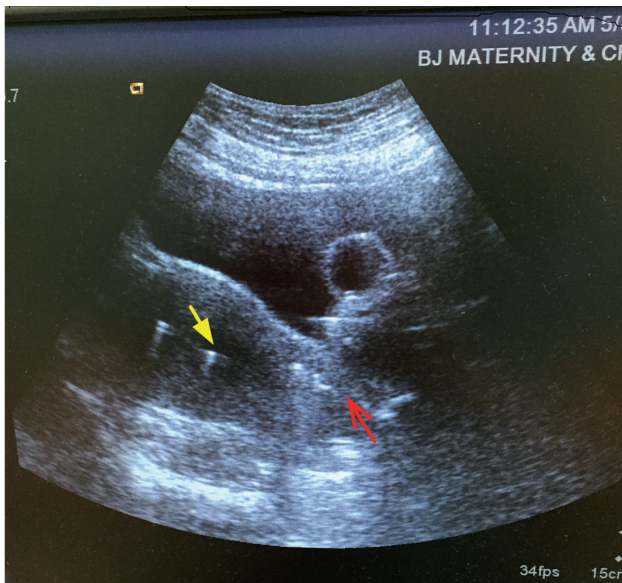


Figure 3. — On transabdominal ultrasound, the cyst (after the viscous fluid was excreted) shows a blind cavity (red arrow) that is not connected with the uterine cavity (yellow arrow).

thors presumed the lesion was benign and might be a large nabothian cyst or a fibroid with cystic degeneration. Because the patient presented with abnormal uterine bleeding, a hysteroscopic examination combined with ultrasound under general anesthesia was done to evaluate the mass' origin, relationship with other organs, and to exclude uterine cavity lesions. Preoperative preparation was the same as for other vaginal surgical procedures. Intraoperatively, the authors found that the cystic mass completely filled the upper third of the vaginal, the pedicle of the cyst originated from the anterior wall of cervical canal (Figure 2), and the cavity and endometrial tissue were normal with no lesions.

An electric knife was used to cut open the cyst at the transformation zone of the cervix. When the cyst was cut open, a massive volume (around 60 ml) of cream-colored viscous fluid was excreted. The wall of the cyst was about five mm thick. On transabdominal ultrasound the authors found that the cyst was blind, not connected with the uterine cavity (Figure 3), and its depth was about seven cm. The

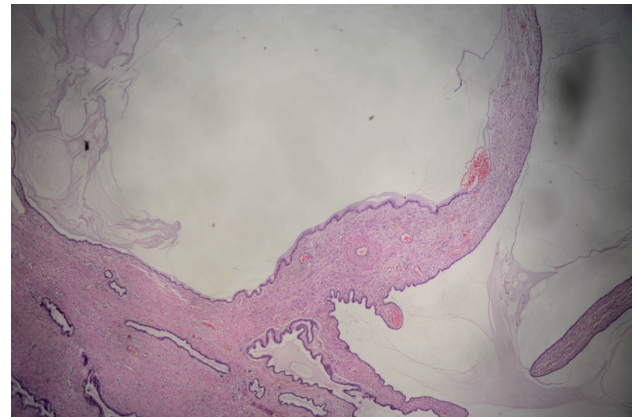


Figure 4. — Viscous fluid, glands with chronic inflammation and a cervix retention cyst (hematoxylin-eosin, original magnification  $\times 40$ ).

inner wall of the cyst was smooth and no tissue was scraped out.

The intraoperative diagnosis was a large nabothian cyst, so a simple cervical incision and local drainage was chosen as the final treatment method. The cut-off part of the cyst was sent to the pathology laboratory. The patient was discharged three days after surgery. The final diagnosis after pathological examination was a cervix retention cyst and chronic inflammation (Figure 4). The patient recovered uneventfully. During the follow-up period, her cervix appeared normal and she had no abnormal bleeding.

## Discussion

The cervical canal mucosa was covered with a single layer of columnar epithelium, and the vaginal part of the cervix was covered with multilayered squamous epithelium. If the glands in the cervical canal mucosa are blocked by squamous epithelium where it replaces the columnar epithelium or they are blocked due to trauma or chronic cervicitis, a nabothian cyst will form. Nabothian cysts can be located on the surface or extend deeply into the cervix. They are usually small, only a few millimeters in di-

ameter [3], and are often discovered incidentally during examinations for other gynecological diseases. The classical cases of nabothian cysts do not require any therapy since they do not have malignant potential and they are asymptomatic.

Giant nabothian cysts are very rare. From the published literature, the authors found that there have only been five prior cases reported. Their symptoms included irregular intermenstrual bleeding, lower abdominal discomfort, nulliparous prolapse, and rectal compression [4-7]. The clinical features depended on the cysts' localization, size, and relationship with other organs.

The present case was the first giant nabothian cyst to present with massive uterine bleeding. The patient complained of massive abnormal uterine bleeding after heavy physical work, a blood loss of about two times the amount lost during normal menstruation. On pelvic examination, a giant cystic mass whose surface was covered with large blood vessels was palpated. The surface vessels' tension was high, and they could have ruptured at any time, especially when the abdominal pressure increased. In this patient, heavy physical work was the reason for increasing abdominal pressure, causing the surface vessels to rupture, resulting in massive abnormal uterine bleeding. For treatment, the authors combined ultrasonic monitoring and hysteroscopy examination, in order to determine the origin of the cystic mass and to also evaluate the uterine cavity for lesions, because they are one of the most common causes of abnormal uterine bleeding.

It is worth mentioning that multiple and large cysts caused by many diseases can lead to significant enlargement of the cervix. For example, Tomoko *et al.* described a case of adenoma malignum with a large cystic tumor [8], and Küçük *et al.* described a case of isolated hydatid cyst of the uterine cervix [9]. All of these diseases have different treatment principles, so it is very important to differentiate nabothian cysts from other benign or malignant uterine tumors. Ultrasound, CT scans, cervical cytological examination, and magnetic resonance imaging (MRI) are helpful in the differential diagnosis [10]. Of course, the most important diagnostic test is bimanual examination. In the present case, the authors made a careful pelvic examination to assess the cyst's location and origination. Combined with the findings from ultrasound imaging and hysteroscopy examination, the authors made the clinical diagnosis of a large nabothian cyst. The final pathological examination confirmed that they were correct. The patient was treated by simple cervical incision.

## Conclusion

Nabothian cyst often occurs in cases of chronic cervicitis, but large ones are very rare. Careful preoperative bimanual examination, as well as ultrasound imaging or MRI,

is helpful for patients with this abnormality. For treatment of patients with abnormal uterine bleeding, combining ultrasound and hysteroscopy examination is recommended to assess the cyst's origination, relationship with other organs, and to exclude cavity lesions. Simple cervical incision and local drainage is the ideal treatment.

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## References

- [1] Casey P.M., Long M.E., Marnach M.L.: "Abnormal cervical appearance: what to do, when to worry?" *Mayo Clin. Proc.*, 2011, 86, 147.
- [2] Fogel S.R., Slasky B.S.: "Sonography of nabothian cysts". *AJR Am. J. Roentgenol.*, 1982, 138, 927.
- [3] Clement P.B., Young R.H.: "Deep nabothian cysts of the uterine cervix. A possible source of confusion with minimal-deviation adenocarcinoma (adenoma malignum)". *Int J Gynecol Pathol.*, 1989, 8, 340.
- [4] Oda K., Ikeda Y., Maeda D., Arimoto T., Kawana K., Fukayama M., *et al.*: "Huge pyogenic Nabothian cyst with endometriosis, developing 13 years after myomectomy at the lower uterine segment: a case report". *BMC Womens Health*, 2014, 14, 104.
- [5] Sosnovski V., Barenboim R., Cohen H., Bornstein J.: "Complex Nabothian cysts: a diagnostic dilemma". *Arch. Gynecol. Obstet.*, 2009, 279, 759.
- [6] Temur I., Ulker K., Sulu B., Karaca M., Aydin A., Gurcu B.: "A giant cervical Nabothian cyst compressing the rectum, differential diagnosis and literature review". *Clin. Exp. Obstet. Gynecol.*, 2011, 38, 276.
- [7] Aruna N., Deepti C., and Chitra R.: "Large nabothian cyst: a rare cause of nulliparous prolapse". *Case Rep. Obstet. Gynecol.*, 2012, 2012, 192526.
- [8] Gotoh T., Kikuchi Y., Takano M., Kita T., Ogata S., Aida S., Anzai M.: "An extremely rare case of adenoma malignum with large cystic tumor which resulted in urinary obstruction". *Gynecol. Oncol.*, 2002, 84, 339.
- [9] Küçük Z., Karcaaltincaba D., Ergün Y., Doğan A.Ç., Çaydere M., Küçük H.: "Isolated hydatid cyst of uterine cervix: A case report". *J. Obstet. Gynaecol. Res.*, 2014, 40, 1157.
- [10] Wu P.Y., Hsu K.F., Chang C.H., Chang F.M.: "Ultrasonographic diagnosis and treatment of a giant uterine cervical nabothian cyst". *Journal of Medical Ultrasound*, 2012, 20, 169.

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