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Case Report

Deep obstructive nabothian cyst in pregnancy mimicking adenocarcinoma on magnetic resonance imaging: an obstetricians dilemma

Parvathi T. Naik[1]*, Dilip K. Maurya[1], Sreerekha Jinkala[2]

[1]Department of Obstetrics and Gynaecology, Jawaharlal Institute of Postgraduate Medical Education and Research, Puducherry, India
[2]Department of Pathology, Jawaharlal Institute of Postgraduate Medical Education and Research, Puducherry, India

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***Correspondence:**
Dr. Parvathi T. Naik,
E-mail: parvathinaik1@gmail.com

ABSTRACT

Nabothian cysts are benign mucous retention cysts of the cervix, most commonly seen in women of reproductive age. However, large Nabothian cysts may have a variable presentation and can even mimic malignancy, causing diagnostic dilemmas, especially during pregnancy. The case highlights the deep obstructive nature of the Nabothian cyst, which can mimic malignancy and must be differentiated from the invasive cervical lesion.

Keywords: Obstructive Nabothian cyst, Pregnancy, Adenocarcinoma

INTRODUCTION

A Nabothian cyst is a mucus-filled retention cyst seen as a nodule on the surface of the uterine cervix. It occurs commonly in reproductive age as a solitary or multiple, translucent to opaque nodule with a rare clinical significance. The cysts vary in size from a few millimetres to several centimetres. Most cysts are asymptomatic because of their small size (2-10 mm in diameter).[1] They may occasionally reach about 4-8 cm. A multiloculated cystic lesion can vary from benign to malignant cervical lesion. The adenocarcinoma gastric type is a continuous spectrum from atypical lobular endocervical glandular hyperplasia. It accounts for 3% of all cervical adenocarcinomas. It is often associated with Peutz-Jeghers syndrome and mucinous tumours of the ovary. Its metastases to the peritoneal cavity in the early stages and has a poor response to radiotherapy or chemotherapy, leading to an unfavourable prognosis.[1-3] The deep-seated, large Nabothian cyst can present with obstructive symptoms like urinary retention, dysmenorrhea due to hematometra, uterine prolapse, infertility, and obstructed labour.[2-4] Sometimes, it poses a diagnostic dilemma as clinical and radiological differentiation between these conditions might be impossible. In case of uncertain diagnosis, excision is required for histopathologic evaluation (HPE) to rule out malignancy. We report a case of a deep obstructive Nabothian cyst in pregnancy mimicking adenocarcinoma (gastric type) on MRI.

CASE REPORT

A 31-year-old gravida 5, para 1, live 0, abortion 3, at 32 weeks of gestation, presented to the emergency department with lower abdominal pain suggestive of threatened preterm labour. She had no history of leaking, bleeding or vaginal discharge. She had a past history of three consecutive recurrent second-trimester abortions suggestive of cervical insufficiency. During her fourth pregnancy, she had undergone cervical cerclage at 18 weeks of gestation but had a very preterm delivery at 27 weeks of gestation. During the current pregnancy at

admission, obstetric examination revealed a gravid uterus of 32 weeks in size with uterine activity lasting less than 10 seconds, cephalic presentation and good foetal heart rate. On speculum examination, the posterior lip of the cervix appeared uniformly enlarged, displacing the external OS anteriorly behind the pubic symphysis. Threatened preterm was managed conservatively with bed rest and continuous maternal and fetal monitoring. Urinary tract and local genital tract infections were ruled out.

Transvaginal ultrasonography showed a multiloculated cystic mass in the posterior lip of the cervix of size 7.9×7.3×6.8 cm with no abnormal vascularity. The internal OS was closed. Magnetic resonance imaging (MRI) of the abdomen and pelvis revealed a gravid uterus with a single foetus in cephalic presentation along with a large, well-defined multi-loculated cystic mass in the posterior lip of the cervix, measuring 7.8×7.1×7.8 cm (Figure 1 a), hyperintense on T2 (Figure 1 b and c), and predominantly isointense on T1 suggestive of adenocarcinoma (Gastric type) (Figure 1 d).

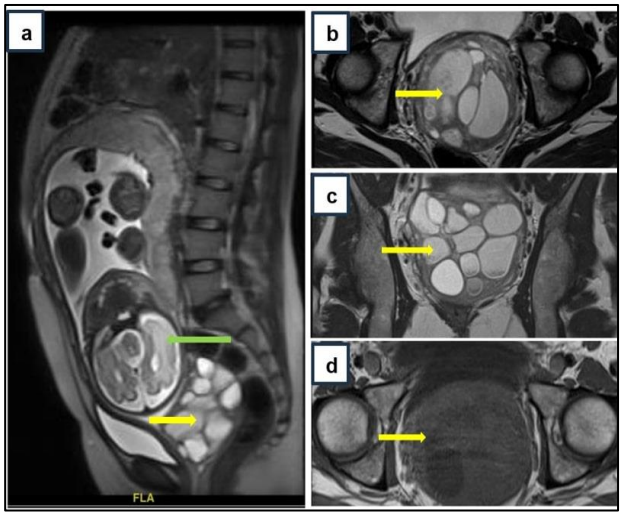

Figure 1 (a-d): MRI abdomen and pelvic sagittal T2-weighted image.

It shows the gravid uterus with foetus in cephalic presentation (green arrow) and multiloculated cystic mass in the posterior lip of cervix (yellow arrow). T2-weighted axial and coronal view shows a large, well-defined multi-loculated cystic mass in the posterior cervix measuring 7.8×7.1×7.8 cm (yellow arrow) and predominantly isointense on transverse T1-weighted (yellow arrow).

The liquid-based cervical cytology showed negative for intraepithelial lesion or malignancy. The colposcopic examination was inadequate as the transformation zone was not seen entirely due to the anterior displacement of the cervical OS. No abnormal aceto-white area was seen over the visualised part of the posterior lip of the cervix. Following a multidisciplinary tumour board discussion and explaining to the patient and her husband the possibility of malignancy after pathological examination of the excised cervical mass, she underwent concurrent lower segment caesarean section (LSCS) with transvaginal excision of the cervical mass at term gestation in view of the posterior lip obstructive, deep, multiloculated cystic cervical mass. The intraoperative and postoperative period was uneventful.

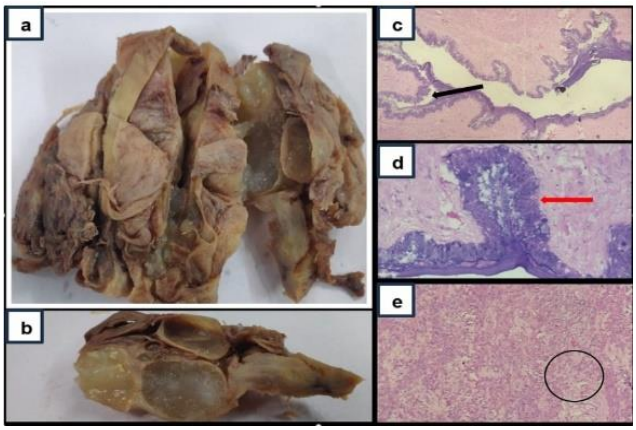

Figure 2 (a-e): Gross images pf multiloculated cystic structure.

It was measuring 9.5×8×5 cm with a maximum cyst wall thickness of 2 mm containing mucinous material. Microscopic examination shows dilated endocervical glands filled with mucin (black arrow), lined by endocervical columnar epithelium (red arrow). The stroma shows marked oedema (circle) (H and E 200x).

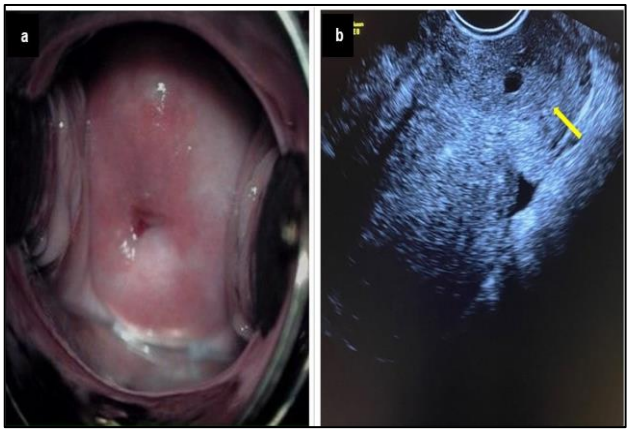

Figure 3 (a and b): Postpartum at 3 months: Speculum examination showing healed, the normal looking posterior lip of cervix; normal posterior lip of cervical stroma on transvaginal ultrasonography (yellow arrow).

A histopathological examination revealed a multiloculated cystic structure measuring 9.5×8×5 cm with a maximum cyst wall thickness of 2 mm containing mucinous material (Figure 2 a and b). The H and E staining and microscopic examination showed uniformly dilated endocervical glands filled with mucin (Figure 2 c) lined by a single layer of endocervical columnar epithelium without cellular atypia and mitotic figures (Figure 2 d). A marked stromal oedema was noted (Figure 2 e). The absence of cellular atypia and mitotic figures favoured the diagnosis of the Nabothian cyst.

A follow-up examination at 3 months showed a healed, regular posterior lip of the cervix on speculum examination (Figure 3 a) with normal appearing cervical stroma on transvaginal ultrasonography (Figure 3 b).

DISCUSSION

A Nabothian cyst is the most common mucus retention cyst due to obstruction of an endocervical gland. It is more commonly seen in the reproductive age group, especially in multiparous women. It is mainly situated superficially close to the mucosal surface of varying sizes of 2-10 mm diameter.[1] A rarely large and deep Nabothian cyst can obstruct the genital tract during pregnancy and mimic neoplastic lesions of the cervix, such as adenocarcinoma (gastric type).[2,3] Vural et al have reported a case of a large Nabothian cyst protruding outside the vaginal introitus in active labour, which was managed by simple drainage followed by vaginal delivery.[4] Because of persistent cervical mass, excision was performed two months following delivery. In our case, the mass was deeply seated inside the cervical stroma, distending the cervix's posterior lip and displacing the cervix's external OS behind the pubic symphysis. She had no history of irregular vaginal bleeding or vaginal discharge in the preconception or antenatal period. We performed concurrent LSCS with transvaginal excision of the cervical mass.

Most of the deep Nabothian cysts reported in the literature are associated with gynaecological conditions like pelvic organ prolapse and secondary amenorrhea or incidentally diagnosed during evaluation for secondary infertility.[5,7] Mahajan et al described a case of uterine prolapse secondary to the huge Nabothian cyst.[5] Sometimes, a large Nabothian cyst can present with obstructive symptoms. Torky reported a case of a large Nabothian cyst causing hematometra.[6] The transvaginal excision with drainage of hematometra relieved the symptoms. Similarly, Turan et al highlighted a case of spontaneous pregnancy within a month following the excision of a deep Nabothian cyst.[7] These deep, multiloculated, obstructive Nabothian cysts can mimic the neoplastic lesion, leading to a diagnostic dilemma. One such malignant lesion confusing the preoperative evaluation is adenocarcinoma (gastric type). It is difficult to differentiate most instances based on clinical, radiological and pathological examination.

Adenocarcinoma, HPV-independent, gastric type, previously described as minimal deviation adenocarcinoma; adenoma malignum; mucinous adenocarcinoma of the endocervix, accounts for 3% of cervical adenocarcinoma.[1] The tumour occurs in the upper endocervical part with frequent involvement of the uterine corpus. It most commonly affects younger women and presents with irregular vaginal bleeding and profuse watery vaginal discharge. They are usually present in the advanced stage with predominant peritoneal spread. On histopathological examination, endocervical glands are of variable size and shape and are lined by malignant cells with rarely focally dilated cystic glands and prominent stromal responses. Immunohistochemistry can aid in the accurate diagnosis with positive staining for HIK-1083, CEA, Ki67, and p53, and typically negative for p16, a marker of HPV-dependent malignant lesions.[8]

A deeply seated large lesion must be differentiated with rare and malignant lesions, adenocarcinoma gastric type. The indolent course and preoperative imaging showing localised lesions without solid components and peritoneal metastases help differentiate benign from malignant cervical masses, thereby avoiding radical treatment. The histopathological demonstration of the round to slightly irregular cystic spaces lined by a single layer of columnar epithelium without cellular atypia and mitotic figures lacking significant stromal response favours deep Nabothian cyst.

CONCLUSION

Nabothian cysts are the most common benign cervical lesions in reproductive-age women, which are mostly superficial and asymptomatic. Large, deep-seated Nabothian cysts are rare but should be considered in women with a history of any procedure or trauma to the cervix. Differentiating pseudo-neoplastic from neoplastic lesions of the cervix is challenging yet crucial for the management during pregnancy, as in our case.

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