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Multiple Nabothian Cysts: An Unusual Cause of Primary Infertility

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Abstract **Case Report**

Nabothian cysts (also called mucinous retention cysts or epithelial cysts) are a common and benign gynecological condition located at the uterine cervix. They are usually asymptomatic, of no clinical significance, and require no treatment. Naboth cysts can mimic some benign or malignant pathologies. Cervical factors in infertility may result from blockage or narrowing of the cervical opening. Nabothian cysts are one of the causes of cervical opening narrowing or blockage. In case of diagnostic doubt, the biopsy is recommended to eliminate adenocarcinoma. Treatment is based on simple drainage or excision whenever cyst is symptomatic. We report the case of multiple Nabothian cysts obstructing the cervical canal in a patient with primary infertility. The diagnosis was made by MRI.

Keywords: Naboth Cyst, Cervical Cyst, Infertility, MRI.

INTRODUCTION

Nabothian cysts, also called inclusion cysts are the result of retention of secretion of the nabothian gland, and it is a frequent finding in asymptomatic women [1]. They are usually multiple and their sizes differ from a few millimeters to 3 cm. The cysts frequently resolve on their own with no need for medical intervention [2] Cervical factors in infertility may result from blockage or narrowing of the cervical opening, due to which the sperm is not able to reach the fallopian tubes. Nabothian cysts are one of the causes of cervical opening narrowing or blockage [3]. Large and/or multiple nabothian cysts, especially deep nabothian cysts, are difficult to distinguish from minimal-deviation adenocarcinoma. Furthermore, neither cytology nor histology helps substantially discern the two entities [4]. Treatment is based on simple drainage or excision whenever cyst is symptomatic.

We report the case of multiple Nabothian cysts obstructing the cervical canal in a patient with primary infertility. The diagnosis was made by transabdominal ultrasound and MRI.

CASE REPORT

A 33-year-old woman presented with primary infertility. She had a regular menstruation. On physical examination, she didn't have any abnormalities. transabdominal ultrasound showed multiple anechoic images located to the cervix (Figure 1). The ovaries and the uterus were clearly defined and normal.

The MRI of the pelvis were acquired performed with and without IV contrast and revealed multiple nabothian cysts which appear T1 hypointense and T2 hyperintense measuring 5.3 × 3.4 cm with thin walls with no complexity or enhancement. High signal is seen on Diffusion Weighted Image (DWI) and Apparent Diffusion Coefficient (ADC) images. No findings were seen to support presence of infection or tumor (figure 2 and 3).

Figure 1: Transabdominal ultrasound showed multiple anechoic images located to the cervix

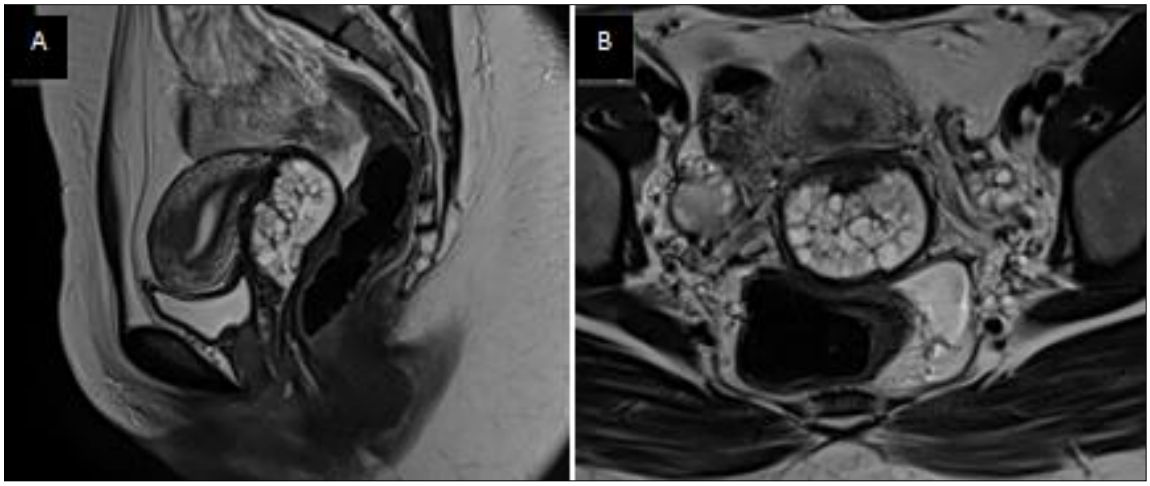

Figure 2: Sagittal (A) and axial T2 (B) weighted MRI of the pelvis showing multiple nabothian cysts which in T2 hyperintense

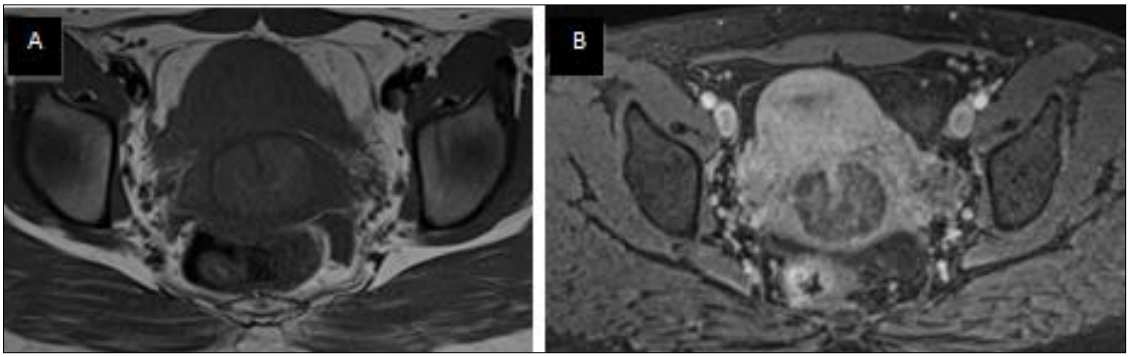

Figure 3: Axial T1 weighted MRI of the pelvis without (A) and with contrast. Nabothian cysts presented a low signal on T1, and there is no wall enhancement with intravenous gadolinium (B)

DISCUSSION

The nabothian cyst, which was first described by Naboth in 1707, is one of the most common gynecological conditions in reproductive-age women [5]. The epidemiology of nabothian cysts has not been a study topic in the literature [6]. They form from inflammatory and reparative processes involving the transition zone of the cervix. Formation of nabothian cysts involves proliferation of the squamous epithelium of the ectocervix over the columnar epithelium of the endocervix. Mucoid material continuously secreted from glands of the endocervix can become trapped under the squamous proliferation and form retention cysts [7]. They are usually small, only a few millimeters in diameter, and are often discovered incidentally during examinations for other gynecological

diseases [5-8]. Large nabothian cysts may appear as a malignant tumor and cause various symptoms relating to mass effect [2]. Adenoma malignum (minimal deviation adenocarcinoma of mucinous type) or other glandular malignant cervical lesions can mimic Nabothian cysts, but the latter are usually located deeper in the cervix [9]. Endocervical adenocarcinoma may present with a prominent cystic component that should also be considered [10]. Infertility affects the social and medical aspects of a couple's life from social and medical aspect. In a female partner, the causes of infertility include ovarian dysfunction, tubal causes, uterine, and cervical causes. The nabothian cyst is one of issues that may cause cervical obstruction [1].

Ultrasound plays an important role in diagnosing the cause of infertility. An nabothian cyst appears on ultrasound as a cystic lesion in cervix, rounded with well-defined margin, anechoic with posterior acoustic enhancement and appear avascular on color Doppler [12]. Ultrasounds, either transabdominal or transvaginal, are first line imag-ing for female pelvic organs demonstration, 20 the probe is placed into the vagina for a few centimeters for the demonstration of the cervix. Nabothian cyst looks like a single cystic lesion or as multiple cystic lesions in the cervix, round, with a regular margin. Their small size and well-defined boundaries are used to differentiate nabothian cysts from malignancy [13].

On MR, uncomplicated nabothian cysts have an imaging appearance of simple cyst with low signal on T1 weighted images and high signal on T2 weighted images [2]. Typically they have a smooth wall, and there is no wall enhancement with intravenous gadolinium [2]. When infected, thick capsular enhancement, high internal T1 signal (proteinaceous material) and surrounding inflammation (hyperemia) may be seen. MRI is able to distinguish mucin producing carcinomas from nabothian cysts due to difference in signal intensity in the cervical stroma on T2-weighted imaging [13]. Moreover, benign lesions do not show wall enhancement with intravenous gadolinium [14]. Thus, a small size and distinct boundaries without enhancement are characteristic findings of nabothian cysts on MR.

Generally Naboth cysts do not require any treatment.

In cases where nabothian cysts are symptomatic, the treatment is based on wide excision or simple drainage [15].

CONCLUSION

Naboth cysts are often small and asymptomatic. A great interest is in imaging for the diagnosis of these lesions. If any doubt, a biopsy is recommended to eliminate a malignant tumour. The involvement of Naboth cysts in infertility is possible.

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