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Case Report

# Pyocolpos Complicating Microperforated Hymen: A Case Report

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## ABSTRACT

**Background:** Asymptomatic bacteriuria (ASB) in pregnancy is associated with serious fetal and maternal consequences and its occurrence is increased by HIV infection. This study sought to compare the prevalence of ASB among HIV- positive and HIV- negative pregnant women in the University of Uyo Teaching Hospital.

**Methods:** One hundred and twenty-one HIV-positive pregnant women and a similar number of matched HIV-negative pregnant women were studied. Socio-demographic characteristics, and clinical data were collected from eligible women and their mid-stream urine samples sent for microscopy, culture and sensitivity. A diagnosis of ASB was made if there was presence of >105 colonies of a single bacterial specie per milliliter of urine.

**Results:** Asymptomatic bacteriuria's prevalence was 8.3% and among the HIV- positive pregnant women, the prevalence was 11.6% compared to 5.0% in those who were HIV- negative. The predominant isolate was Escherichia coli, cultured in 64.2% and 50.0% of HIV-positive and HIV- negative ASB cases respectively. There was an association between the presence of ASB and multiparity among the HIV infected pregnant women.

**Conclusion:** The prevalence of ASB is high among pregnant women in our center and is higher in those who are HIV positive. It is associated with multiparity and treatment is effective in reducing adverse pregnancy outcomes. Hence, based on the high prevalence rates of over 2% revealed by this study, screening and treatment of asymptomatic bacteriuria among high-risk antenatal populations such as HIV-positive women should be undertaken routinely.

**Key words:** Asymptomatic bacteriuria, HIV positive pregnant women, Urinary tract infection in pregnancy, Uyo

## INTRODUCTION

An imperforated hymen (IH)is a rare congenital abnormality of the female genital tract resulting from the failure of canalisation of the lower part of the vaginal plate [1]. A microperforated hymen (MH) is a very rare partial obstructive congenital hymenal anomaly resulting fromthe incomplete canalisation of the foetal hymen [2].

While the incidence of IH is 1/1000 female births, the incidence of a MP hymen is not known probably because it is very rare and lacks reporting. There have beenaround 20 reported cases of MP [3]. Hymenal anomalies are described as sporadic despite the limited number of cases reported in the same family, and no genetic mutationshave beenidentified [4,5]. In addition to MH being an isolated anomaly, it is reported in association with other anomalies such as bifid clitoris, duplicate ureter, hypoplastic kidneys, and imperforate anus [2].

The clinical presentation of a MP hymen varies depending on the calibre of the opening where patients may present with abdominopelvic pain, recurrent urinary tract infection, urinary retention, recurrent vulvovaginitis, and purulent vaginal discharge [6,7]. Furthermore, the diagnosis of MH is likely to be delayed untilsometime after puberty whengirls present with light and irregular menstrual cycles [7].

## THE CASE

A 14-year-old girl presented to the emergency department with acute abdominal pain for one week. It was associated with nausea, vomiting, voiding difficulties, and fever. She was known to have

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epilepsy that was controlled by Lamotrigine 50 mg once daily otherwise she had no relevant past medical or surgical histories. Menarche was at the age of 12 years, and since then, she described regular, monthly, very light menstrual flow which lasted for four days and was associated with primary dysmenorrhoea.

On physical examination, the patient looked ill, blood pressure was 112/77 mmHg, pulse rate was90 beats/minute, and temperature was 38.2°C. Abdomen examination showed diffuse lower abdominal tenderness particularly in the right iliac fossa.

Transabdominal pelvic ultrasound showed a normal looking uterus and an adnexal mass of mixed echogonicity measuring6 x6.5 cm located close to the pouch of Douglas more to the right side. In addition, minimal free fluid collected in the pelvis.

The results of the laboratory tests which included a complete blood count, the kidney and liver function tests were normal. The results of the urine analysis showed the presence of numerous white blood cells.

Based on the clinical picture which was suggestive of an ovarian torsion and in light of the complexity of the ovarian mass and limited resource, an urgent lapratomy, rather than laparoscopy, was performed. The findings showed normal uterus, tubes, and ovaries. Furthermore, a retroperitoneal mass arising from the pouch of Douglas was felt on palpation more to the right side of the pelvis. Therefore, intraoperative surgical consultation was sought, where the rectum, sigmoid colon, and mesentery were examined, and no abnormalities were found. Unfortunately, the external genitalia were not examined intraoperatively. The procedure was concluded.

Next morning, the girl was re-evaluated and a pelvic magnetic resonance imaging (MRI) scan was requested which showed a cystic dilatation of the vagina measuring 12 x 6 x 6.7 cm filled with blood. The uterine cavity was mildly distended, and the endometrium was then these findings were suggestive of an imperforate hymen. Additionally, the distance between the leading edge of the vaginal cystic dilatation and the hymen was 0.6 cm. Other pelvic organs including kidneys, liver, spleen, and both ovaries were reported as normal.

Thereafter, vulval examination showed a MH with a minimal amount of pus coming out from a pinpoint opening in the hymen at 11 o'clock. The patient was taken back to the theatre where a hymenotomy was performed and 500 mL of pus were drained. Cultures were collected from the fluid followed by irrigation of the vagina.

Post-operatively, the patient was started on two intravenous antibiotics, cefuroxime 750 mg every 8 hours and metronidazole 500mg every 8 hours for 2 days.

The patient recovered well and was discharged home on day two postoperatively in stable condition and was prescribed oral Amoxicillin-Clavulanic acid tablets and Acetaminophen. The urine and vaginal pus cultures showed no bacterial growth. Follow up after two, four, and eight weeks showed that the hymen had healed completely, the hymenal opening calibre was around 0.7 cm, and the girl described a heavier menstrual flow. Consent to submit the clinical details were obtained from the parents.

## DISCUSSION

The female genital tract is derived from the paramesonephric (Müllerian) duct and urogenital sinus. The caudal end of the Müllerian duct and urogenital sinus fuse to form the sinovaginal bulb which forms the solid vaginal plate. This process starts in the 7th gestational week, and the canalisation of the vagina is completed by the 20th week of gestation [7]. The hymen membrane is an epithelium line between the Müllerian and urogenital sinus, and the failure of recanalisation of the inferior wall of the sinovaginalbulb may lead to the development of an imperforated or microperforated hymen and vaginal septum [8].

A microperforated hymen is a variant of obstructive hymenal anomalies. It can be asymptomatic until later in life after menarche when the menstrual blood flow is not completely drained, and girls may present with light menstrual flow in addition to difficulties in inserting tampon and vaginal suppositories and the inability to have vaginal intercourse [9]. Additionally, the age of presentation of IH and MH varies from neonates to adolescent [10], and in our case, the age was more than the age reposted by Bakos and Berglund [11].

Diagnosing MH is challenging as patients usually present with vague symptoms such as abdominal pain which may be associated with urinary and vulvovaginitis symptoms and also has menstrual blood flow. Examination of the external genitalia is very important and should be performed to exclude congenital abnormality [12]. While it is difficult to distinguish between IH and MH, a genital inspection may show blood or fluid discharge from a very small opening in the hymen in the cases of MH, and a tight vaginal ring and bulging hymen in the cases of IH [2].

If left untreated, a microperforated hymen may lead to recurrent urinary tract infections secondary to either ascending infection or urinary retention that happened due to the mass effect of the heamatocolpos. In addition, it may cause metrocolpos, pyocolpos, and pelvic abscess [2, 9].

Pyocolpos is a rare condition, only reported in 1 of 30,000 births [13], resulting from the infection of a heamatocolpos, secondary to either IH, MH, or transverse vaginal septum [14]. It is mostly diagnosed during infancy or at puberty due to the surge of oestrogens. Pyocolpos should be surgically drained [14]. The treatment of MP is a hymenotomy, but it is very important that other differential diagnoses are considered because the surgical approach varies according to the diagnosis [12].

The other diagnoses that should be considered include distal vaginal atresia or a transverse vaginal septum with a fistulous tract that allows for some menstrual drainage [15].

## CONCLUSION

A microperforated hymen is very rare, usually diagnosed late after menarche, and may be complicated by heamatocolpos and pyocolpos. The presence of very light periods, along with recurrent genitourinary symptoms and recurrent lower abdominal pain, should raise the suspicion of MP. Furthermore, examination of the external genitalia is a must.

## DECLARATIONS OF INTEREST

None

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