

# Imperforate Hymen

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## ABSTRACT

Imperforate hymen is relatively rare but it is the most frequently encountered of the mullerian anomalies of the female genital tract with an incidence of about 0.1%. The clinical presentation varies significantly from patient to patient depending on the age at diagnosis but in most cases, the diagnosis is missed in early childhood delaying the diagnosis upto puberty, when the patient presents with hematocolpos, hematometra or both. When this happens, the presentation could even be misleading because of unlikely presenting symptoms like, urinary retention and bowel obstruction leading to unnecessary urology and gastroenterology referral without any conclusive evidence of the condition furthering the delay in diagnosis and increasing the presentation with complications. This case is an illustration that there is quite often a considerable delay before a proper diagnosis is reached. The aim of this communication is to increase awareness of imperforate hymen among clinicians examining adolescent girls with lower abdominal pain.

**Keywords:** Imperforate hymen, Hematocolpos, Hematometra.

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## INTRODUCTION

An imperforate hymen results when there is failure of the tissues of the endoderm of the urogenital sinus to completely canalize.<sup>1</sup> Because, the vaginal outflow is obstructed by the nonperforated hymen, menstrual blood accumulates in the vagina (hematocolpos) and the uterus (hematometra). This may lead to mechanical effects on the urethra, bladder, intestines or pelvic blood vessels which can result in urinary retention, obstipation or oedema of the legs.<sup>2</sup> Irritation of the sacral plexus or nerve roots can cause the lower back pain.<sup>3</sup>

In this case report, we present a 14-year-old girl who presented with history of lower abdominal pain and distension associated with urinary retention referred from urology department. She was diagnosed as a case of imperforate

hymen, treated by hymenectomy following which she improved dramatically of all symptoms and was discharged on the second day postoperatively.

## CASE REPORT

A 14-year-old girl presented with urinary retention and lower abdominal mass taking treatment for cystitis for 2 months, referred for urology department for gynecological opinion. She had not attained her menarche and was asymptomatic until a year previously. Then she started developing cyclical crampy abdominal pain which lasted for 5 to 6 days every month and used to get relieved on its own without taking any medication. The pain had increased in severity during the last 3 months. There was no history of nausea, vomiting, fever or altered bowel habits. The medical history was unremarkable. There was no history of any vaginal discharge and of sexual activity. On general physical examination, her vital signs were HR 80 bpm; BP 120/80 mm Hg; temperature 98.4°F. Physical exam revealed a healthy adolescent female with height 150 cm, weight 42 kg, BMI 18.66. She had pubic hair and breast development tanner stage IV, confirming the attainment of puberty.

On abdominal examination, a mobile, nontender mass in the lower abdomen reaching upto the umbilicus could be palpated (Fig. 1).

Perineal examination showed a bluish bulging hymen (Fig. 2). No other gross external abnormalities of the external genitalia were observed. Transabdominal ultrasonography showed a homogenous, hypoechoic mass in the pelvis measuring about 14 × 11 cm. Both the ovaries were normal. We diagnosed an imperforate hymen with hematocolpos and hematometra.

The patient underwent hymenectomy with a cruciate incision. Approximately 1 liter of viscous, dark chocolate colored blood was drained. Immediately after the operation, the size of the abdomen had regained normal proportions. Postoperative recovery was normal without any pain. Patient was discharged on the second postoperative day after repeat transabdominal ultrasonography confirming no remnant collection in uterus.

## DISCUSSION

Normal vaginal development requires the fusion of components that are derived from two embryologic

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**Fig. 1:** Abdominal mass felt per abdomen



**Fig. 2:** Bulging bluish membrane of hematocolpos

structures, the mesodermal Mullerian ducts and the endodermal urogenital sinus. The upper half of the vagina develops from the Mullerian ducts while the lower half develops from the urogenital sinus. This is normally followed by canalization to form a normal patent vagina. The hymen represents the junction of the sinovaginal bulbs with the urogenital sinus; hence it is formed from the endoderm of the urogenital sinus epithelium. By the fifth month of gestation, the canalization of the vagina is complete while the hymen usually ruptures before or shortly after birth and remains as a thin mucous membrane.<sup>4</sup> Failure of the hymen to perforate completely in the perinatal period can result in varying anomalies, including imperforate, microperforate, cribriform, or septated hymen.<sup>4</sup>

It is important to be aware of this condition while examining a female adolescent of postmenarcheal age presenting with cyclical abdominal pain, urinary retention, constipation, a lower abdominal mass mimicking pelvic tumour.<sup>5</sup> One should always consider an imperforate hymen if there is a discrepancy between the Tanner stage and menarcheal status.<sup>6</sup>

The history and physical examination are frequently incomplete. This is usually caused as the presentation of imperforate hymen may be challenging in some cases such that the diagnosis may initially be missed. In addition, there is often an initial diagnosis of infection of the bladder, nephrolithiasis or abdominal tumour, which leads to unnecessary examinations and treatment.<sup>6</sup> Some symptoms of appendicitis are similar to those of an imperforate hymen, and there are cases where groundless appendectomies have been performed.<sup>7</sup> Late discovery of an imperforate hymen may lead to pain, infections, hydronephrosis and endometriosis with subfertility as a possible consequence.<sup>5</sup> This delay is very frequently encountered in clinical practice the cause of which may be the patient herself who delays to seek for the medical advice in view of not attaining her menarche at the destined age. Even more worry some situation is delay in diagnosis by the clinician attending the patient.

This case report is presented to address to clinicians the possibility of imperforate hymen with hematocolpos as a differential diagnosis in adolescent girls, particularly those who have not started having their menses in their adolescence so that their external genitalia are carefully examined to exclude the possibility of imperforate hymen as a cause of acute urinary retention due to the hematocolpos.

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