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## A unique case of microperforated hymen in the spectrum of anatomical variations of hymen

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### Abstract

Hymenal variations can be both anatomical as well as pathological. Normal anatomical variations includes Microperforated, cribriform, septated etc. Mullerian eminence differentiation causes this types of variations in female genital tract. Most of the times this disparity do not lead to any complications. When on extreme end this changes can lead to symptoms that of hematometra to hematocolpos to pyometra. Surgical intervention requires in many of this cases. Microperforated Hymen another variety in the anatomical variation of Hymen is such entity. With patients having regular cyclic flow this entity presents themselves in different manner with no symptoms to painful menstruation to obstructive variety.

**Keywords:** Microperforated Hymen, Mullerian disintegration, outflow obstruction, hymenectomy

### Introduction

Hymen is a thin fold of membrane at lower part of vagina. Hymen opening allows menstrual blood and vaginal secretions to flow from vagina. Embryologically central cells of Mullerian eminence disintegrates so that vaginal canal opens into urogenital sinus, tissue at the periphery persists as hymen. Failure of disintegration of central cells of Mullerian eminence leads to hymen abnormalities. When there is normal hymen opening this allows menstrual blood to exit. Hymen abnormalities hampers this menstrual flow to drain properly. When there is problem in outflow of this normal cyclical blood it leads to complications like hematometra, pyometra, hematocolpos or pyocolpos. There are different anatomical types of hymen variants like cribriform, septate, imperforated or micro perforated. Genital tract abnormalities are uncommon, occurring in approximately 7% of females <sup>[1]</sup>. An imperforated hymen is most common congenital cause of outflow obstruction in women with incidence of 1 in 1000 <sup>[2]</sup>. There is complete blockage of hymen in case of imperforated hymen while there is small opening present in micro perforated hymen. Although the incidence of micro perforated hymen is unclear this hymenal anomaly is consider rare entity <sup>[3]</sup>.

Diagnosis of imperforated hymen becomes easy as a woman in her menarche age does not menstruate seeks attention from a mother or a concern female relative and comes to a doctor with complain of primary amenorrhea. As in case of micro perforated hymen there is cyclic menstrual flow from the tiny perforation there is often delay in diagnosis.

### Case report

A 15 Year old female patient presented to Department of obstetrics and gynaecology at Nootan Medical Collage and Reaserch Centre, Visnagar, Gujarat, India in July 2024 with complaints of lower abdominal pain associated with fever for 3 days. She gave history of regular monthly menstrual cycle lasting for 4 to 5 days with scanty flow.

On local examination a tiny hall in hymen was found while doing per vulval examination and diagnosis of Microperforated Hymen was put through. Otherwise general examination and secondary sexual characters appeared normal.

USG of abdomen and pelvis suggested possibility of hydrocolpos/haemetocolpos due to imperforated hymen/vaginal septum/vaginal stenosis. Further; on MRI pelvis suggested of hematometra with hematocolpos likely. On radiological examinations both adnexa appeared normal. Initially haematological reports suggested leucocytosis along with fever so patient was started on injectable antibiotics; other lab reports were normal. Under spinal anaesthesia a small pin point hymenal opening was found.

Infant feeding tube insertion done to confirm microperforated hymen. Cruciate incision making hymenal opening at centre point kept. Lateral walls of hymen sutured to prevent future stenosis.



**Fig 1:** Per-vulval examination showing urethra opening with small pinpoint hymenal opening



**Fig 2:** Intraoperative placement of infant feeding tube leading to drainage of menstrual blood from hematocolpos



**Fig 3:** Cruciate incision with lateral wall suturing to allow free drainage of blood

### Discussion

Micro perforated hymen a rare clinical entity of obstructive genital abnormalities. With cases mainly misdiagnosed or late diagnosed making it difficult to know its exact incidence. The presentation and management of clinically significant hymenal variations differs depending on the age of the patient at the onset

of symptoms and associated complications [4]. Delayed diagnosis is mainly evident as there is cyclic menstrual flow every month so patient doesn't seek help for dysmenorrhea as primary dysmenorrhea is common in adolescence age. Many a patients visits a clinician only after puberty with the complaint of difficulty in sexual penetration, difficulty in insertion of tampons or menstrual cups or infertility. Due to very small hymenal opening menstrual flow doesn't come out fully and may lead to hematocolpos or hematometra. While in cases like imperforated hymen there is no connection to outer environment pyocolpos is rare, in micro perforated hymen due to connection to outer environment ascending infections can lead to pyocolpos or pyometra. A case reported by obstetrics and gynaecology department of Dr. BR Ambedkar medical college, with the only chief complain of difficulty in penetration in a patient with 26 years of age and active marriage life of 1 year [5]. Although little available data on genetic inheritance and prevalence of subocclusive hymenal variant (micro perforated hymen and septate hymen) one of the case reported where 16 years old white dizygotic twin had this abnormality [6]. Another case of micro perforated hymen in a 14 year old girl was reported which was complicated by pyocolpos [7]. Hymenectomy is performed in such cases of hymenal variant.

A cruciate incision is made for hymenectomy in patients with imperforated or micro perforated hymen [4]. A urethral catheter should be placed preoperatively or intraoperatively to confirm exact location of urethra [8]. After making incision redundant hymenal mucosa should be excised and mucosal edges may be reapproximated using a 3-0 or 4-0 absorbable sutures in an interrupted manner for hemostasis [4]. While suturing always avoid suturing of upper part of hymen to avoid injury to urethra.

### Conclusion

Micro perforated hymen though rare variant of hymenal anomalies should not be neglected. Many a patients are diagnosed late due to its rare occurrence and vague symptoms. Early diagnosis and management is key to avoid its sequence to pyocolpos or pyometra and pelvic abscess. Preoperative as well as postoperative counselling is also mainstay to avoid complications and restenosis.

### Conflict of Interest

Not available

### Financial Support

Not available

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