Hydrocolpos Caused by Imperforate Hymen in a Preterm Newborn

Sir,

An imperforate hymen is an uncommon congenital disorder where the hymen completely obstructs the opening of the vagina, with a worldwide incidence of 0.014%–0.1%. It is usually asymptomatic until the onset of menstruation, with an average presentation age of 11–15 years, and is rarely diagnosed in the neonatal period.[1,2] Essentially, an imperforate hymen is the embryological remnant of the mesodermal tissue, which perforates during the later stages of embryonic development.[2]

A preterm baby born at 35 weeks of gestation presented to the pediatric surgery department of our hospital with complaint of bilious vomiting since birth. On examination, epigastric fullness was noted, and the baby weighed about 1.7 kg. On routine examination, a huge bulge at the vaginal introitus was found to completely obstruct the vaginal opening; urethral and anal openings were normal [Figure 1]. The infant had been delivered by spontaneous vaginal delivery, and the antenatal scans were normal. Routine blood investigations including complete blood counts, renal function test and serum electrolytes were within normal limits, but serum bilirubin level was elevated. Abdominal X-ray and ultrasonography both showed a "double-bubble" appearance, without any other abnormalities. A provisional diagnosis of duodenal atresia and hydrocolpos due to imperforate hymen was considered. The imperforate hymen was managed by hymenal incision and duodenal atresia with duodenoduodenostomy. Subsequently, the external female genitalia appeared normal. As imperforate hymen is not associated with other abnormalities, the patient was not investigated further for concomitant urogenital abnormalities.

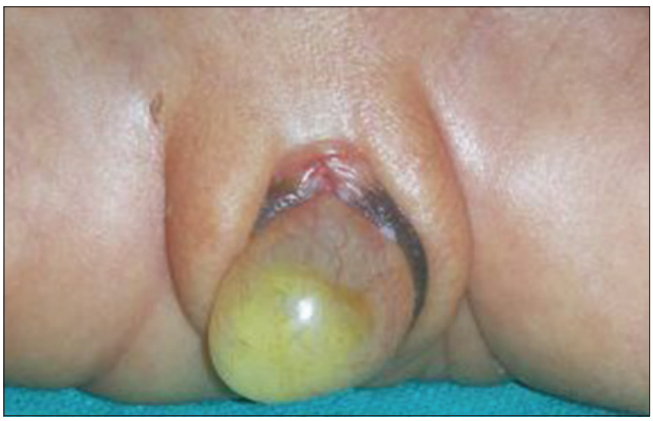

Figure 1: Huge hydrocolpos due to an imperforate hymen

Embryologic development of the hymen can vary, resulting in fenestrations, septa, bands, microperforations, anterior displacement as well as in the rigidity and/or elasticity of the hymenal tissue; imperforate hymen is at the extreme end of this spectrum. Therefore, owing to the developmental variations in the hymen, examining the external genitalia of newborn girls is important.[3]

Occasionally, an imperforate hymen can be detected in antenatal ultrasound scans as a pelvic collection.[4] At birth, it presents as an abdominal or pelvic mass or a bulging hymen.[4] Its diagnosis is usually based on physical examination, while in some cases, it is diagnosed through transabdominal, transperineal or transrectal ultrasound.[5] In our case, the imperforate hymen presented as a huge bulging swelling detected through physical examination; notably, abdominal ultrasonography did not show any abnormalities, compression of the urinary system or hydroureteronephrosis.

Hydrocolpos is caused by maternal, estrogen-induced genital tract secretions behind the imperforate hymen (or other vaginal obstruction) around the time of birth, leading to cystic distension of the vagina. Hydrocolpos may lead to obstructive uropathy through compression of the lower urinary tract, resulting in hydronephrosis and hydroureters. This, in turn, may lead to renal failure, thereby highlighting the importance of detecting hydrocolpos early.[6] Other complications of hydrocolpos include amenorrhea, intestinal obstruction, lymphovenous obstruction, abdominal mass and retrograde menstruation. In our case, there was no obstructive uropathy.

Initially, the hydrocolpos fluid is odorless, cloudy white and mucousy. However, if the diagnosis is delayed to the 2nd week or later, the discharge can be dark and blood

stained due to estrogen-withdrawal bleeding – also known as "neonatal menstruation."[7] To reestablish vaginal outflow, surgical hymenotomy following catheterization with an indwelling Foleys catheter has been found to have good outcome and only rare recurrences.[6] It should be noted that needle aspiration should be avoided, as it can lead to infection and pyocolpos.[8]

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient's parents have given their consent for their child's images and other clinical information to be reported in the Journal. The patient's parents understand that their child's name and initials will not be published, and due efforts will be made to conceal her identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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