CASE REPORT

Surgical Management of Persistent Hymen in a Marwari Filly - A Case Report

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Persistent hymen is a rare congenital anomaly of the female genital tract and an important cause of infertility in domestic animals. The hymen is formed from the epithelial lining of the paramesonephric ducts and the urogenital sinus at the vestibulo vaginal junction. Normally, it appears as a thin mucosal fold which regresses or ruptures spontaneously during the first estrus or coitus. However, incomplete canalization of the embryonic vaginal septum results in persistence of this membrane as a partial or complete transverse barrier (Roberts, 1986). Such persistence is considered a form of segmental aplasia caused by embryonic malunion of the paramesonephric ducts and the ectodermal urogenital sinus, leaving incomplete communication between the caudal vagina and the vestibule. The degree of obstruction varies, ranging from a partially occluding membrane to complete imperforation. Complete obliteration of the vaginal canal prevents normal drainage of secretions, resulting in their accumulation within the vagina, cervix, and uterus. This leads to conditions such as mucovagina, mucocervix, and mucometra (Parkinson, 2001). Once the vagina becomes distended, affected animal may exhibit discomfort, straining, and tenesmus. Reports of persistent hymen are uncommon in domestic species. It has been documented in cattle (Madhusudhan *et al.,* 2016; Kumar *et al.,* 2017), buffaloes (Kumar *et al.,* 2016), bitches (Kruger *et al.,* 2025), and goats (Da Silva *et al.,* 2025). The anomaly has also been reported sporadically in camels, llamas, and alpacas (Fowler, 2011) and even in human beings, where it is a well-recognised cause of primary amenorrhea and pelvic pain (Lee *et al.,* 2019). Although rare in equines, persistent hymen can interfere with normal reproductive tract function, predispose to infection, and cause breeding difficulties. The present case report describes the clinical presentation, diagnosis, and successful surgical management of persistent hymen in a Marwari filly.

Case History and Observations

A 1.5-year-old Marwari filly was presented with a history of protrusion of a flesh-coloured membrane during lying down, roaring or neighing (Fig. 1). The animal also exhibited urinary incontinence, hyporexia, and straining. On clinical examination, systemic parameters were within normal limits, and no vaginal discharge was observed. Vaginal examination using a speculum combined with manual palpation revealed the presence of a transverse membrane at the vestibule, which obscured visualization of the cervix (Fig. 2). Complete obliteration of the vaginal canal beyond the urinary meatus was evident. Based on these clinical findings, the case was tentatively diagnosed as imperforate (persistent) hymen, in accordance with the classification described by Roberts (1986).

Treatment and Discussion

The filly was restrained in a standing position and sedated with intravenous administration of Butorphanol (0.02 mg/kg b.wt.) and Xylazine hydrochloride (0.5 mg/kg b.wt.) combination. Tetanus toxoid (2 mL) was administered intramuscularly as a prophylactic measure prior to surgical intervention. The perineal region was prepared by aseptic scrubbing, and local desensitization was achieved by applying 2% lignocaine hydrochloride gel along the vaginal wall and over the persistent hymenal membrane. Using an atraumatic technique, the hymenal membrane was exteriorized through the vulvar commissure, grasped with forceps (Fig. 3), and sharply excised with surgical scissors (Fig. 4). Following excision, a moderate amount of whitish, mucoid cervical secretion was released (Fig. 5). Subsequent digital and speculum examination confirmed a patent vaginal lumen with clear visualization of the cervix (Fig. 6).

To minimize the risk of pneumovagina and ascending bacterial contamination, a Caslick's vulvoplasty was performed immediately after hymenectomy. For this, local infiltration anaesthesia was induced along the labia using 2% Lignocaine hydrochloride. A thin strip of mucocutaneous tissue was excised from each labial margin

Fig. 1: Protrusion of a flesh-coloured membrane during lying down

Fig. 2: Visualization of hymen through vaginal speculum

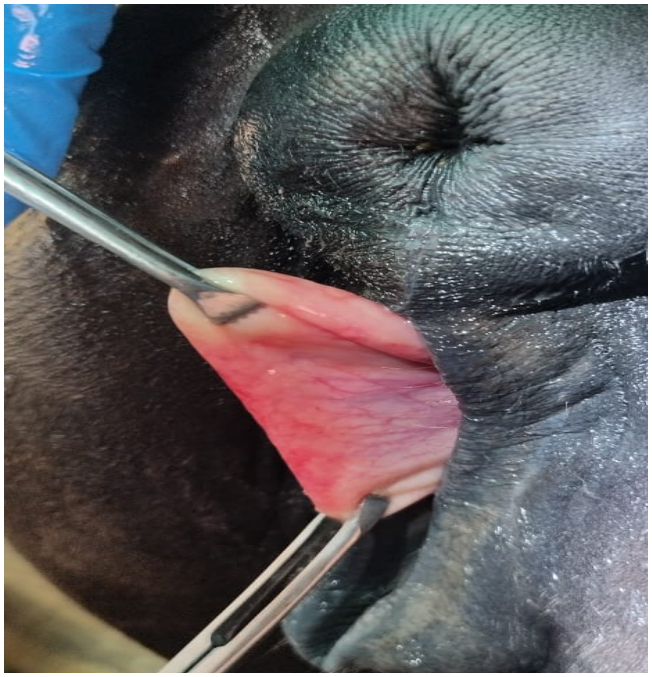

Fig. 3: Exteriorization of hymenal membrane through the vulvar commissure

Fig: 4: Surgical excision of the hymenal membrane

at the mucocutaneous junction, and the lips were apposed using simple interrupted sutures of non-absorbable material, leaving a sufficient ventral opening for urination (Fig. 7). Postoperative therapy consisted of Strepto-penicillin (2.5 gm, IM) once daily and Flunixin meglumine (1.1 mg/kg b.wt., IV) for three consecutive days to provide antimicrobial cover and anti-inflammatory support. Perineal hygiene was strictly maintained during recovery. Sutures were removed after 14 days, by which time the vulvar conformation was satisfactory and the vaginal tract remained free of complications. The filly exhibited uneventful recovery with restoration of normal genital anatomy and function.

Persistent hymen, though rare in equines, should be considered when a membrane obstructing the vaginal lumen is identified. Clinically, this condition interferes with the drainage of normal vaginal and cervical secretions, which may accumulate and lead to mucovagina, mucometra, or even pyometra. In fillies, persistent hymen may present as a protrusion of a pale or flesh-coloured membrane at the vulvar opening, swelling of the perineal region, abnormal behaviour such as straining or restlessness, and occasionally recurrent vaginal discharge. Obstruction of the vestibule may also hinder visualization of the cervix during vaginal examination, complicating diagnosis and subsequent breeding management. The standard treatment for persistent hymen involves surgical excision of the obstructing membrane, which restores vaginal patency and prevents future complications such as infection and reproductive failure.

Fig. 5: Whitish mucoid cervical secretion

Fig. 7: Caslick's vulvoplasty

However, secondary corrective procedures such as Caslick's vulvoplasty are often recommended to prevent pneumovagina, bacterial contamination, and poor perineal conformation, particularly in mares predisposed to such complications. Caslick's technique is one of the most widely practiced surgeries in equine gynaecology and is especially valuable for improving reproductive health in broodmares (Dascanio, 2021).

In brief, the reports of persistent hymen in horses remain rare in the literature, particularly in Indian breeds such as the Marwari horse. The present case emphasizes the importance of timely diagnosis and the combined surgical approach of hymenectomy with Caslick's procedure, which proved effective in restoring normal vaginal anatomy and ensuring an uneventful recovery.

Fig. 6: Patent vaginal lumen with clear visualization of the cervix after excision

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