Case Report

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Management of Vestibular Anus of a Female Infant by Modified Anterior Sagittal Anorectoplasty: A case report

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ABSTRACT

Background: *Anorectal Malformations (ARM) are among the most common congenital anomalies encountered in paediatric surgery. Vestibular anus represents a low-type ARM. Early diagnosis and timely intervention can significantly improve outcomes.*

Case Presentation: *We present the case of a female neonate with vestibular anus associated with imperforate anus, identified on the first day of life. Definitive management was performed at eight months of age using a modified Anterior Sagittal Anorectoplasty (ASARP) technique. The postoperative course was uneventful.*

Conclusion: *This report highlights the clinical presentation, diagnostic evaluation, surgical management and favourable postoperative outcome of vestibular anus in a female patient.*

Key words: Anorectal malformation; ASARP; Imperforate anus; Vestibular anus.

Introduction

Anorectal Malformations (ARMs) are a spectrum of congenital anomalies that involve abnormal development of the distal anus and rectum. The incidence of ARMs is approximately 1 in 5,000 live births, with a slight male predominance.[1] Among the various types, vestibular anus is one of the most common forms where the rectum opens into the vaginal vestibule rather than its normal anatomical position. It is predominantly seen in females.[2] In this case, It may occur in association with a range of systemic anomalies, often grouped under the VACTERL association (Vertebral, anorectal, cardiac, tracheal, oesophageal, renal, and limb anomalies) Vestibular fistula is typically a "Low-type" anomaly. Early diagnosis through careful clinical examination and appropriate radiological imaging is critical for planning effective management.

Management of vestibular anus involves surgical correction, most commonly via anoplasty or posterior/anterior sagittal anorectoplasty (PSARP/ASARP) depending on the anatomical presentation.

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This case report describes a rare presentation of vestibular anus associated with an imperforate anus in a female paediatric patient, successfully managed by anoplasty. The report details the clinical presentation, diagnostic workup, surgical procedure and postoperative outcome.

Case Presentation

An 8-month-old immunized female infant, the second child of non consanguineous parents, presented to DNIMIAHS Hospital Chattogram on 27.07.2025 with a history of passing stool through the vaginal orifice since birth.

She was born at term via normal vaginal delivery with an appropriate birth weight and an uneventful perinatal course. The baby cried immediately after birth. She was exclusively breastfed for the first 6 months and still has not started weaning food.

There was no history of antenatal or postnatal complications. The mother remained in good health throughout pregnancy and did not experience hypertension, gestational diabetes, thyroid disorders, or any other medical conditions.

The baby was up to date with immunizations according to the EPI schedule, including BCG, OPV, PCV and Pentavalent vaccines. Mild delay was observed in her developmental milestones.

There was no family history of congenital anomalies on either the maternal or paternal side, as reported by the parents.

On examination, The infant appeared wellnourished and alert. Her Weight was 6.2 kg. On Cardiovascular examination, her heart rate was found within normal limits. Apex beat was in the normal position. Heart

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sounds are normal and no murmur was detected. Her respiratory System examination revealed no abnormality Breath sounds were normal and symmetrical. Her abdomen was soft, nondistended, with no visible peristalsis or pulsations. Umbilicus was centrally located and inverted. No organomegaly or palpable masses were noted. The spine was in normal alignment with no deformities observed. Both of her upper and lower limbs were normal in structure and function. No signs of muscle wasting was found. No polydactyly, syndactyly, adactyly, clubfoot or other congenital anomalies were observed. On genitourinary examination, a single perineal opening was noted with absence of a separate anal orifice. The vaginal opening with imperforated anus suggested vestibular fistula or vestibular anus.

As part of the initial diagnostic assessment, the patient underwent a cross-table lateral view X ray on the first day of life, which confirmed the diagnosis of a vestibular anus. For further evaluation, a chest X-ray and abdominal ultrasonography were performed. The chest X-ray revealed no abnormalities, the trachea, heart and aorta were in normal anatomical positions, and no other congenital anomalies were identified through imaging.

Preoperative investigations included a Complete Blood Count (CBC) blood grouping, coagulation profile, serum electrolytes and chest X-ray, all of which were within normal limits.

Following adequate bowel preparation, the patient underwent a modified Anterior Sagittal Anorectoplasty (ASARP) under general anesthesia. A reabsorbable suture was used and securely tied. To maintain apposition of the legs, a mermaid bandage was used. The peroperative course was uneventful.

Postoperatively, the patient was kept Nothing By Mouth (NPO) for four days, after which breastfeeding was initiated. During the NPO period, half-strength normal saline was administered to maintain fluid and electrolyte balance. Prophylactic antibiotics were also prescribed.

Two weeks after surgery, anal dilatation was planned to prevent postoperative anal anal stenosis. The postoperative course has remained uneventful to date.

Discussion

During embryonic development, cephalocaudal and lateral folding of the embryo leads to incorporation of a portion of the endoderm, forming the primitive gut. The distal part of this primitive gut develops into the hindgut, which eventually gives rise to the rectum. The terminal hindgut extends into the cloaca, which later divides into the anterior urogenital sinus results from the failure of the anal membrane to break down.[3]

Surgery in these cases is generally performed between three and six months of age. In this case, it was postponed to the seventh month due to the baby's low weight and below normal hemoglobin level. Preoperative assessment at the seventh months of age revealed an upper respiratory tract infection. The infection was treated, and subsequent investigations were completed. With all parameters within normal limits, the surgery was scheduled at eight months of age.

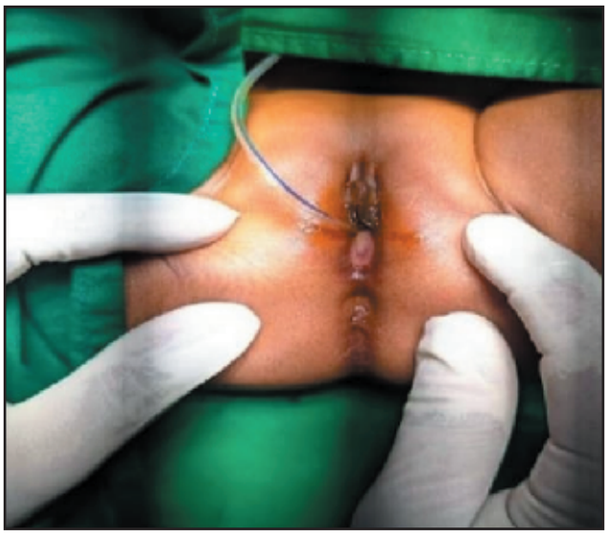

Figure 1 Pre-operative condition showing vestibular with imperforate anus

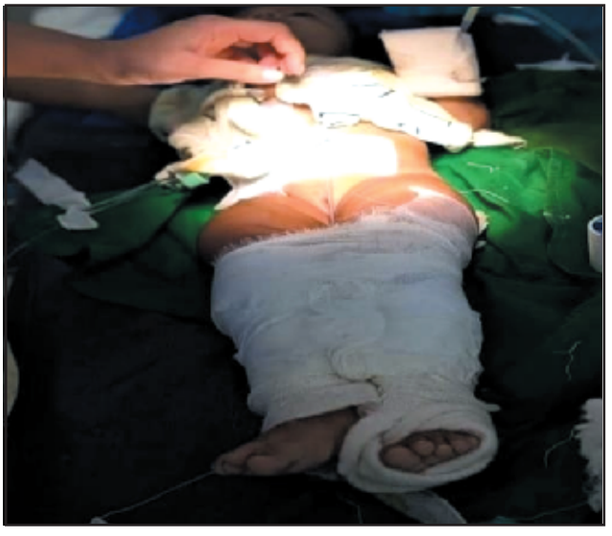

Figure 2 Mermaid bandaging was performed

Preoperatively, bowel preparation was carried out over three days. On the first day, the baby was given fruit juice and breast milk. This was followed by Oral Rehydration Solution (ORS) and plain water only. From the third day onward, the baby was kept Nil Per Os (NPO). On the day of surgery, bowel cleansing was

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completed with an enema. The surgery was performed under general anesthesia with the patient positioned in lithotomy, legs raised and abducted. A slight elevation of the lower back was maintained to optimize access to the perineal region.

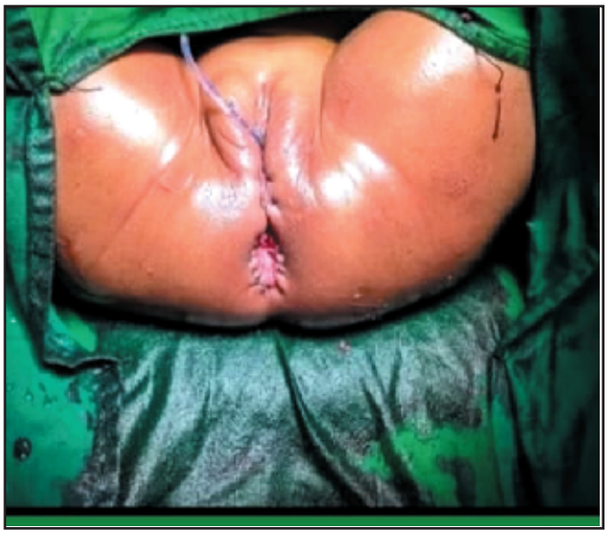

Figure 3 Rectum sutured to the skin around the perinium

The surgical field was exposed and retracted using silk sutures. A vertical perineal incision was made to facilitate precise dissection of the rectum from the posterior vaginal wall. The rectum was carefully mobilized and repositioned to the neoanal site, aligned within the sphincter complex. An anal opening was then created, followed by anoplasty. Finally, layered closure of the muscle and skin was completed. The patient was catheterized with a Foley catheter throughout the entire period.

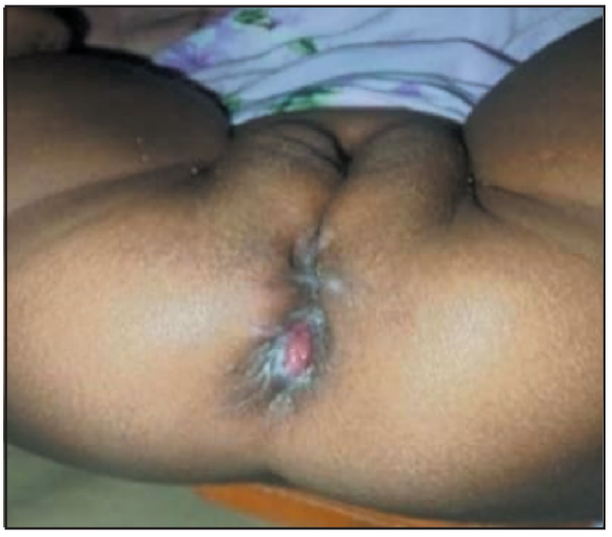

Figure 4 Post operative condition

The most critical and delicate step of the procedure involves separating the rectum from the vagina, as they share a common wall. The modified technique was meticulously followed to prevent wound retraction and dehiscence. A mermaid bandage was applied to maintain leg apposition for 48 hours postoperatively. Patient had nothing per mouth and was given half strength normal saline during the NPO period. On the 4th Postoperative Day (POD) oral intake was initiated with sips of water, followed by breastfeeding. From the 7th POD, complementary feeding was introduced. At two weeks postoperatively, anal dilatation was performed to prevent stricture formation at the anoplasty site.

Anoplasty for vestibular anus generally achieves good functional and cosmetic outcomes, particularly when performed early and supported by proper postoperative bowel care. In contrast, delayed diagnosis or improper management can increase the risk of complications, including constipation, fecal incontinence or fistula recurrence.

Constipation occurs in 42% to 70% of patients with low anorectal malformations, with vestibular fistulas showing the highest prevalence at around 61.4%.[4] Common complications after ASARP and PSARP include prolapse, anal displacement and noticeable scarring.[5] If constipation is not managed properly, it can lead to megarectum and megasigmoid, increasing the risk of fecal impaction and overflow incontinence.[6]

Conclusion

Vestibular anus associated with imperforate anus is a rare but surgically correctable anorectal malformation. Early diagnosis and thorough evaluation with proper management are essential to prevent complications. In this case, modified Anterior Sagittal Anorectoplasty (ASARP) was done precisely with the goal of preserving baby's genitourinary functions and ensure quality of life. The postoperative course was uneventful, with satisfactory cosmetic and functional outcomes. Long-term follow-up is important to monitor bowel function, ensure continence and address potential complications.

Disclosure

The authors declare no conflict of interest.

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