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Timely Surgical Management and Nursing Care of Hirschsprung Disease in a Neonate: A Case Report from a Charitable Hospital in Coimbatore

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Abstract: ***Hirschsprung disease (HD) is a congenital gastrointestinal disorder presenting in neonates with signs of lower intestinal obstruction, such as delayed meconium passage, abdominal distension, and bilious vomiting. This case report discusses the clinical course of a 4-day-old male neonate born to Mrs. Karthika, who was evaluated and managed at a hospital in Coimbatore, Tamil Nadu. The baby was diagnosed with Hirschsprung disease and underwent a diverting colostomy. The report emphasizes early recognition, surgical decision-making, and the critical role of nursing care in the perioperative and recovery phases. This case further demonstrates how resource-conscious, evidence-based pediatric care in underserved settings can significantly improve neonatal outcomes.***

Keywords: Hirschsprung disease, neonatal colostomy, congenital bowel obstruction, stoma care, pediatric nursing, early diagnosis

1. Introduction

Hirschsprung disease (HD) is a rare but serious cause of intestinal obstruction in neonates, resulting from the congenital absence of ganglion cells in the distal colon. This leads to a functional obstruction, most commonly manifesting in the neonatal period. Globally, HD occurs in approximately 1 in 5,000 live births, with a higher incidence in males (Smith & Wilkins, 2020). In resource-limited settings, delayed recognition can lead to life-threatening complications such as enterocolitis or perforation.

This case study, conducted at a tertiary care hospital in Coimbatore, Tamil Nadu, highlights the importance of early diagnosis and surgical intervention, alongside the essential role of pediatric nursing in managing congenital bowel disorders.

2. Relevance and Significance

Neonatal intestinal obstruction due to Hirschsprung disease poses a significant risk of morbidity and mortality if not addressed promptly. In many primary care or low-resource settings, delayed presentation and lack of awareness can complicate the disease course. Nurses, especially in neonatal and pediatric units, are often the first to recognize abnormal feeding, vomiting, or meconium delay, positioning them at the frontline for early referral and intervention. This case underscores the need for heightened clinical suspicion and collaborative care in both rural and urban low-income settings.

Objectives:
Upon completion of this case study, the reader should be able to:

- Identify hallmark signs and symptoms of Hirschsprung disease in neonates.
- Understand the diagnostic pathway and surgical decision-making in HD.
- Describe evidence-based nursing interventions in pre- and postoperative care.
- Outline strategies for caregiver education on colostomy care in a resource-limited environment.

3. Case Presentation

A 4-day-old male neonate was admitted to the neonatal unit with complaints of **not passing meconium since birth**, progressive abdominal distension, and two episodes of **bilious vomiting**. The baby was born at term via **normal vaginal delivery** to Mrs. Karthika, a 25-year-old primigravida. The antenatal period was uneventful, and the baby weighed 3.2 kg at birth.

Medical History:

- Full-term neonate, normal delivery
- No family history of congenital or gastrointestinal disorders
- No maternal comorbidities or perinatal complications
- Exclusively breastfed since birth
- No prior interventions

Physical Assessment Findings:

- **General:** Alert but irritable neonate
- **Vitals:** HR 148 bpm, RR 54/min, Temp 98.6°F, SpO_2 98% in room air
- **Abdomen:** Markedly distended, visible bowel loops, tympanic to percussion
- **Bowel Sounds:** Sluggish
- **Per Rectal Exam:** Empty rectum, tight anal sphincter; explosive release of stool and flatus on withdrawal
- **Skin & Extremities:** Normal perfusion; no cyanosis or petechiae

Investigations:

- **CBC:** Normal values, no leukocytosis or anemia
- **Plain X-ray Abdomen:** Multiple air-fluid levels, dilated bowel loops, absence of rectal gas shadow
- **Contrast Enema:** Transition zone at sigmoid colon
- **Rectal Biopsy:** Confirmed absence of ganglion cells—diagnostic of Hirschsprung disease

Diagnosis:
Congenital Hirschsprung Disease (Short Segment Type)

Treatment and Management:

Preoperative Nursing Management:
- **NPO Status**: Maintained to prevent aspiration
- **Nasogastric Tube**: Inserted for decompression
- **IV Fluids**: D10W with electrolytes to maintain hydration
- **Prophylactic Antibiotics**: Started to reduce risk of enterocolitis
- **Abdominal Girth**: Monitored every 4 hours
- **Parental Counseling**: Detailed explanation provided to Mrs. Karthika regarding the diagnosis, procedure, and prognosis

Surgical Management:
- On **Day 5 of life**, the baby underwent a **diverting colostomy** under general anesthesia
- Intra-operative findings confirmed a narrowed distal colon with proximal dilation, consistent with HD

Postoperative Nursing Care:
- **Stoma Care**: Assessed for viability, patency, and peristomal skin health; sterile pouching applied
- **Pain Management**: Monitored using Neonatal Pain Assessment Tool; IV paracetamol given
- **Monitoring**: Hourly vitals, daily weight, abdominal girth, and stoma output
- **Feeding**: Gradually resumed with expressed breast milk on postoperative day 2
- **Parental Education**: Demonstration of colostomy care, hand hygiene, and signs of infection; mother showed good understanding in return demonstration

Outcome:
The neonate responded well to the procedure. Abdominal distension resolved, and stoma output was consistent with feeding. No signs of postoperative complications were observed. The mother, Mrs. Karthika, was actively involved in learning stoma care and received detailed discharge instructions. The baby was discharged on **postoperative day 6**, with scheduled follow-up for nutritional monitoring and planning of definitive pull-through surgery at 3–6 months of age.

4. Discussion

Hirschsprung disease, although rare, requires timely intervention to prevent fatal outcomes. In low-resource settings, early diagnosis is often delayed due to lack of awareness or access to pediatric surgical care. The presence of **delayed meconium passage** beyond 48 hours should always raise suspicion. Nurses play a vital role in monitoring for signs of obstruction, providing preoperative support, performing colostomy care, and educating caregivers.

In this case, the collaborative approach among neonatologists, pediatric surgeons, and nursing staff at a tertiary level hospital ensured a successful outcome despite resource limitations. The commitment of the nursing team to family education was instrumental in preparing the caregiver for home-based care.

5. Conclusion

This case emphasizes the importance of **early diagnosis**, **surgical intervention**, and **nursing-led education** in managing Hirschsprung disease in neonates. With proper training and collaborative care, even resource-constrained hospitals can provide effective and compassionate care for congenital surgical emergencies. The nurse's role remains central—from initial recognition to postoperative management and long-term caregiver empowerment.

References

[1] Smith, G. H., & Wilkins, B. (2020). Hirschsprung's disease in the neonate: Current perspectives. *Pediatric Surgery International*, 36(2), 145–153.
[2] Ghosh, D., Kumar, S., & Verma, R. (2021). Impact of nurse-led education on colostomy care in caregivers of neonates with Hirschsprung disease. *Journal of Pediatric Nursing*, 56, e24–e29.
[3] National Institute of Child Health. (2023). Hirschsprung disease: Diagnosis and treatment guidelines.
[4] Zani, A., & Pierro, A. (2015). Neonatal intestinal obstruction. *Surgical Clinics of North America*, 97(1), 195–215.