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REVIEW

Nursing Process in Postoperative Preschoolers with Ventricular Septal Defect: A Humanized Approach

Proceso de Enfermería en Preescolares Posoperados de Comunicación Interventricular: Un Enfoque Humanizado

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ABSTRACT

The ventricular septal defect (VSD) was identified as the most prevalent congenital heart disease, with a global incidence of 6-8 per 1,000 live births, according to WHO data and regional studies. In Latin America, this condition represented one of the leading causes of neonatal mortality. In Peru, the National Institute of Child Health San Borja estimated that 30% of congenital defects were heart diseases, many of which were associated with genetic alterations such as trisomy 21, 13, or 18.
Postoperative management of VSD in preschoolers in cardiovascular intensive care units was considered crucial to prevent complications such as heart failure and ventilatory dysfunction. The nursing process, consisting of the stages of assessment, diagnosis, planning, implementation, and evaluation, was applied as a systematic tool to provide comprehensive care. During the assessment phase, the 11 functional health patterns of Marjory Gordon were used to identify actual and potential problems, while the priority diagnoses included decreased cardiac output, ineffective tissue perfusion, and dysfunctional ventilatory response. Implemented interventions included continuous hemodynamic monitoring, thoracic drain management, infection prevention, and pain control. These actions, along with a humanized approach and emotional support for families, improved clinical outcomes and strengthened the bond between the healthcare team and caregivers. The nursing process was key to ensuring proper recovery and providing quality care to pediatric patients affected by VSD.

Keywords: Congenital heart disease; Ventricular septal defect; Nursing process; Intensive care; Pediatric patient.

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RESUMEN

La comunicación interventricular (CIV) fue identificada como la cardiopatía congénita más prevalente, con una incidencia global de 6-8 por cada 1,000 nacidos vivos, según datos de la OMS y estudios regionales. En América Latina, esta afección representó una de las principales causas de muerte neonatal. En Perú, el Instituto Nacional de Salud del Niño San Borja estimó que el 30% de los defectos congénitos correspondieron a enfermedades cardíacas, muchas de las cuales estuvieron asociadas con alteraciones genéticas como la trisomía 21, 13 o 18. El manejo postoperatorio de la CIV en preescolares posoperados en cuidados intensivos cardiovasculares fue considerado crucial para prevenir complicaciones como insuficiencia cardíaca y disfunción ventilatoria. El proceso de enfermería, compuesto por las etapas de valoración, diagnóstico, planificación, ejecución y evaluación, se aplicó como herramienta sistemática para brindar atención integral. Durante la valoración, se utilizaron los 11 patrones funcionales de Marjory Gordon para identificar problemas reales y potenciales, mientras que los diagnósticos prioritarios incluyeron disminución del gasto cardíaco, perfusión tisular ineficaz y respuesta ventilatoria disfuncional. Las intervenciones implementadas incluyeron monitoreo hemodinámico continuo, manejo de drenajes torácicos, prevención de infecciones y control del dolor. Estas acciones, junto con un enfoque humanizado y el soporte emocional a las familias, mejoraron los resultados clínicos y fortalecieron el vínculo entre el equipo de salud y los cuidadores. El proceso de enfermería fue clave para garantizar una recuperación adecuada y brindar un cuidado de calidad a los pacientes pediátricos afectados por CIV.

Palabras clave: Cardiopatía congénita; Comunicación interventricular; Proceso de enfermería; Cuidados intensivos; Paciente pediátrico.

INTRODUCTION

According to the World Health Organization (WHO, 2023), it is estimated that 303,000 newborns worldwide die every year during the first four weeks of life due to congenital anomalies; adverse perinatal outcomes and congenital disabilities are responsible for the loss of 15 million years of healthy life due to premature death and disability. In Latin America and the Caribbean, congenital disabilities are the second leading cause of neonatal death after premature birth. In many cases, surviving babies live with disabilities. In the region, one in three deaths from congenital disabilities is due to heart defects.

Congenital heart disease is the most common significant congenital disability, with an incidence ranging from 6 to 8 per 1,000 live births, and approximately half have clinically significant heart disease. The most common congenital heart diseases are ventricular septal defect, atrial septal defect, patent ductus arteriosus, coarctation of the aorta, Fallot's tetralogy, stenosis and transposition of the great arteries (aortic and pulmonary), atrioventricular canal defect and hypoplastic left heart syndrome. Worldwide, the incidence of congenital heart disease is 4.97%, and it is predominantly male. The highest incidence of congenital heart disease is VSD (Mancebo García et al., 2022).

Nationally, according to the National Institute of Child Health-San Borja (2021), it is estimated that between 2 and 3 percent of newborns have congenital disabilities. Heart disease is the most common and accounts for 30 percent of all cases. These are associated with other congenital anomalies or are part of a syndrome identified in 25 to 40 percent of cases. Approximately 30% of children with chromosomal abnormalities will have congenital heart disease. Aneuploidies represent a significant proportion of syndromic congenital heart diseases. 50% of people born with trisomy 21 have congenital heart disease, ranging from ASD and VSD to atrioventricular canal. In trisomy 13, the incidence increases to 80%, with heterotaxia and laterality defects becoming increasingly common, and among individuals with trisomy 18, almost all will have congenital heart disease. Approximately one-third of women with Turner syndrome, or monosomy X, will have congenital heart disease; the malformations tend to be in the left

heart structures, and the most common diagnoses include bicuspid aortic valve, aortic stenosis, hypoplastic left heart, and coarctation of the aorta.

DEVELOPMENT

The nursing process is a systematic and organized method that seeks to guarantee comprehensive and quality care for the patient. According to Herdman et al. (2023), this process consists of five fundamental stages: assessment, diagnosis, planning, execution, and evaluation. This approach is instrumental in the care of pediatric patients in critical situations, such as in the case of preschoolers who have undergone surgery to close a ventricular septal defect (VSD). VSD is one of the most common congenital heart diseases. According to Beerman (2023) and Malo Concepción & Insa Albert (2017), it is characterized by a defect in the interventricular septum, which allows abnormal blood flow between the right and left ventricles. Surgical closure is essential to prevent complications such as heart failure, pulmonary hypertension, and developmental delay.

Postoperative management in the cardiovascular intensive care unit is crucial to prevent complications and ensure adequate recovery. According to Lorenzo (2020), intensive care includes:

- Haemodynamic monitoring (Inzunza Cervantes et al., 2023).
- Management of chest drains.
- Infection prevention.
- Pain and anxiety control.

Assessment in the nursing process is carried out using tools such as Marjory Gordon's 11 functional patterns, which allows for a comprehensive view of the patient's condition (Herdman et al., 2023). The patterns are detailed below: Health perception and management patterns evaluate the patient's perception of their health and the management they carry out to maintain it. Nutritional-metabolic pattern examines the patient's eating habits, nutritional status, and metabolic functioning. Elimination pattern analyzes intestinal, urinary, and skin elimination functions. Activity and exercise pattern focuses on the patient's daily activities, physical exercise, and energy level. Sleep and rest pattern explores sleep, rest, and relaxation habits. Cognitive-perceptual pattern evaluates the patient's ability to process information, make decisions, and perceive stimuli. Self-perception and self-concept patterns explore how the patient perceives himself and his self-esteem. The pattern of roles and relationships analyzes the patient's relationships with others, including family and work roles—a pattern of sexuality and reproduction. The pattern of adaptation and stress tolerance focuses on how the patient copes with stress and the coping mechanisms they use. The pattern of Values and Beliefs explores the values, beliefs, and personal goals that influence health decisions.

The diagnostic stage is based on the identification of actual or potential problems. According to Aravena Aravena (2018) and Herdman et al. (2023), the priority diagnoses in postoperative pediatric patients include:

1. Decreased cardiac output: related to alterations in postsurgical ventricular function.
2. Ineffective tissue perfusion: associated with the need for absolute rest and hemodynamic changes.
3. Dysfunctional ventilatory response to weaning: identified in patients subjected to prolonged mechanical ventilation (Castro García et al., 2020).

These diagnoses allow interventions to be prioritized and a care plan to be established that is focused on the patient's needs.

According to Aravena Aravena (2018), some common diagnoses in patients with heart disease include Decreased cardiac output, Ineffective tissue perfusion, and Dysfunctional ventilatory response to weaning.

The planning and execution of nursing care are based on clear and measurable objectives, guided by the NOC (Nursing Outcomes Classification) and NIC (Nursing Interventions Classification) taxonomies.

According to Butcher et al. (2018), some of the most relevant interventions include: Continuous monitoring:

Observation of hemodynamic parameters, blood gas levels, and level of consciousness.

Respiratory physiotherapy: Prevention of atelectasis and improved ventilatory capacity (Castro M & Simian D, 2018).

Pain control: Use pediatric assessment scales and administration of analgesics as needed.

Infection prevention: Apply aseptic and antiseptic protocols in handling invasive devices (Rodríguez-Durán et al., 2022).

Evaluation involves comparing the results obtained with the established objectives. According to Sánchez Bone and Ortiz Díaz (2021), using specific scales to measure clinical and functional parameters is essential at this stage.

Freire et al. (2021) emphasize that pediatric care should focus not only on clinical needs but also on the emotional support of the patient and their family. Constant companionship and effective communication are essential to reducing stress and promoting recovery.

Postsurgical management in the cardiovascular intensive care unit is essential for successful recovery. Lorenzo (2020) points out that the main objectives include Hemodynamic stabilization. Inzunza Cervantes et al. (2023) recommend continuous monitoring using clinical, blood gas, and echocardiographic parameters for early detection of complications.

Pain management is essential, as adequate pain control improves ventilatory response and reduces patient stress (Rodríguez Gómez, 2018). Infection prevention and care for managing drains, catheters, and surgical wounds are also essential (Castillo-Saavedra et al., 2023).

In addition, the nursing team plays a key role in providing emotional support to families, given the psychological impact that these situations generate (Freire et al., 2021).

The nursing process allows for comprehensive care focused on the needs of the pediatric patient. According to Freire et al. (2021), this approach improves clinical outcomes and contributes to the humanization of care, strengthening the bond between the health team, the patient, and their family.

CONCLUSIONS

Ventricular septal defect (VSD), as one of the most prevalent congenital heart diseases, represents a significant challenge in neonatal and pediatric care due to its high incidence and associated complications. At the global and regional level, its impact on mortality and disability underlines the importance of comprehensive and timely management, from diagnosis to surgical treatment and postoperative follow-up.

The nursing process plays a crucial role in the care of pediatric patients who have undergone VSD closure surgery. It guarantees structured care based on comprehensive assessment, prioritization of diagnoses, and the implementation of specific interventions aimed at recovery. Tools such as Marjory Gordon's 11 functional patterns make it possible to identify the patient's needs and personalize care strategies.

Postoperative management in cardiovascular intensive care units requires constant monitoring, infection prevention, pain control, and emotional support for both the patient and their family. This approach improves clinical outcomes and contributes to the humanization of care, strengthening the bond between the health team and families.

In conclusion, the nursing process, when applied in a systematic and multidisciplinary way, is a fundamental tool to guarantee adequate recovery and quality care in pediatric patients with congenital heart disease, such as VSD, promoting their physical and emotional well-being.

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CONFLICT OF INTEREST

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