

According to NANDA Diagnosis and NIC, Administration Nursing Care of Patient With Congenital Esophageal Atresia

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Esophageal atresia is the most common malformations of the esophagus anomalies which is life-threatening and requires lifelong treatment and care. There are five different subtypes of the disease as A, B, C, D and E. When the current literature is scanned; it is seen as one in 2400-4500. Laryngeal cleft is a rare congenital anomaly too. It causes the connection between the trachea and esophagus. The incidence of this disease is up to 7.6% in current studies. The reason for this change is thought to be the unspecified features of type I, lack of diagnosis and existence of unreported cases. And the last one that, tracheomalacia is defined as loosening or softening of the tracheal and bronchial lumen leading to the lungs and collapsing/contracting during airflow. Approximately 1 in every 2000 – 2100 births is affected. There are additional anomalies seen in these babies. In addition, laryngeal clefts and tracheobronchomalacia are similarly dangerous diseases that affect the respiratory tract in a major way and can often be fatal, requiring intensive care. Clinical manifestations of these diseases, though there are many different aspects of it, come together as nutrition and respiratory problems. Infants with these diseases experience developmental delays, recurrent respiratory infections, frequent intensive care hospitalizations. It is also seen that patients are at risk of being exposed to many complications due to their surgical treatment needs. In this study, it is presented a 5-month-27-day-old infant 'case M' with a diagnosis of esophageal atresia, laryngeal cleft, and tracheobronchomalacia. The anamnesis of Case M was taken and evaluated according to Marjory Gordon's Functional Health Patterns Model. As a nursing diagnosis; risk of infection, loss of fluid volume, imbalance in nutritional pattern, lack of self-efficacy, inability to maintain spontaneous ventilation, struggle in the mother's caregiver role loss of tissue integrity and risk of falling: were made in accordance with NANDA, and intervened according to the NIC, and the results were established according to the NOC.

Title:

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Abstract Summary:

In this study, given a 5 month 27 day old nursing care patient with esophageal atresia, laryngeal cleft, and congenital tracheobronchomalacia, for whom a nursing care was planned and applied based on NANDA nursing diagnoses, NIC nursing initiatives and NOC results during their intensive care unit stay.

Content Outline:

Introduction

Esophageal Atresia

Esophageal atresia is one of the most common malformations of the esophagus anomalies which is life-threatening and requires lifelong treatment and care. Particularly, there is a need for follow-up, treatment and care for life. (1, 2)

The incidence of esophageal atresia shows variations in the literature. When the current literature is scanned; it is seen as one in 2400-4500 (3, 4) births worldwide, while in some it is 2.99 per 10,000 births. (5, 6)

The first classification of esophageal atresia was performed by Gross in 1953. According to this classification; Type A: Isolated OA (7%) where both ends terminated bluntly. Type B: OA with proximal end fistulised into the trachea with a distal blunt end (1%). Type C: OA with proximal end with blunt termination, distal end fistulised into the trachea (most common 86%) Type D: A (2%) where both ends fistulised into the trachea, Type E: The esophagus is opened with a fistula to the trachea without atresia. (H fistula) (4%) (7, 8)

Treatment and caring needs depend on the type of atresia. (6)

Laryngeal cleft

Laryngeal cleft is a rare congenital anomaly that causes the connection between the trachea and esophagus. (9, 10)

The incidence of this disease is up to 7.6% in current studies. The reason for this change is thought to be the unspecified features of type I, lack of diagnosis and existence of unreported cases. (11, 12)

Cleft does not go beyond that of the vocal cords in type I. Posterior cricoid cartilage is incomplete in type II. Type III and Type IV have a tracheoesophageal septum cleft distal to the cricoid cartilage. If the cleft extends into the tracheoesophageal septum it is classified as Type III and is classified as Type IV if it extends to the trachea. (11, 12)

Medical treatment is considered before surgical treatment in Type I clefts. (13)

Tracheobronchomalacia

Tracheomalacia is defined as loosening or softening of the tracheal and bronchial lumen leading to the lungs and collapsing/contracting during airflow. (14) It was first described in 1952 by Holinger et al. (15)

Approximately 1 in every 2000 – 2100 births is affected. There are additional anomalies seen in these babies. (16, 17) Clinical physical examination, pulmonary function test, computed tomography, magnetic resonance and bronchoscopy methods can be used to diagnose. (18, 19) Symptomatic treatment is applied. Pharmacological methods are tried first. (20)

Since esophageal atresia, laryngeal cleft, and tracheobronchomalacia are rare diseases, it has been observed that there is no study of nursing care of these diseases in our country. In this context, a diagnosis of esophageal atresia, laryngeal cleft, and tracheobronchomalacia was made according to Gordon's Functional Health Patterns, by making a diagnosis according to NANDA, by planning NIC and NOC initiatives and observing the results.

Case M was the first child of the family and was born on July 11, 2015, weighing 2,620 gr at 37 weeks. On the 4th day after birth, the operation was performed at another center due to esophageal atresia, but it was not successful.

The patient who was admitted to the hospital with aspiration pneumonia on 7th January 2016 started being followed as 5 months 27 days old and was admitted to the intensive care unit for 45 days There are no anomalies in the parents.

Detection and Management of health

The way in which the mother perceives health is assessed. When interviewed about baby's health, she stated that 'she believes that the baby will improve and this hospital and health workers are safe and she has high hopes'.

Nutrition and Metabolic Status

Patient was fed with TPN until his transpyloric catheter was inserted. After the catheter was inserted, it was started to be infused with food by constant infusion at a rate of 3ml per hour. Then it is continued to be increased.

Discharge/Elimination

No urine or stool problems

Activity/Exercise

When the baby's sedation was, there were active limb movements.

Cognitive Perception

When the baby's sedative medicines were cut off, it was seen that he could look at his name, trace with his eyes, grasp small objects, recognize her mother's voice.

Sleep/Rest

When the baby's sedation was interrupted, he had an average of 15 hours of sleep per day.

Self-Perception and Self

Baby's mother was evaluated. She stated that she saw herself as a good mother devoted to the health of her baby and she was open for further education for the care and healing of the baby.

Role and Relationships

The mother stays in hospital because of her baby's disease.

Sexuality and Reproduction

Mother S has stated that she has been in hospitals for months for the baby.

Coping and stress

The baby's mother says she can cope with it and seems positive.

Faith and Values

The mother was thinking positively during the interview and said that it made her feel good. (21)

Physical Examination Findings

Weight: 2.810, weight Percentile: <3

Height: 52cm, Height Percentile: <3

Head circumference: 39 cm, Head circumference percentile: <3

Blood pressure: 123/87 (right leg)

Pulse: 147 / apical, rhythmic strong

Capillary filling time: lower and upper extremity 2sec

Respiration: 32 Mechanical Ventilation: In Body Temperature : 36.7 Axillary
 PCV mode, PEEP 3, Rate: 20, I: E Ratio 1/4,
 PIP: 24 FiO2 between 45-60% was ventilated There Is No Known allergy:

SpO2: 92%-97% Vaccinations: Proper for the age

NANDA Diagnosis of Nursing: Infection Risk

Area: Safety/Protection Class: Infection

Related Factors Intubation, tracheostomy, use of ventilator, surgical treatment, intermittent enteral and parenteral feeding, following arterial pressure after surgery, due to insertion of urine probe after surgical procedures

NOC	Area	Grade	NIC	Area	Grade
0703 The severity of infection	Physiologic Health	Immune response	6540 Infection Control	Safety	Risk Management
1102 Wound Healing: Primary	Physiologic Health	Tissue Integrity	6550 Prevention from Infections	Safety	Risk Management

Infection Control

If necessary/appropriate, start and continue the specified isolation measures.

Properly, limit the number of visitors.

Keep the aseptic environment while changing the TPN tube and bottles.

According to the CDC guidelines; Make sure that perieral / central / IV catheters are in aseptic conditions for dressing change.

Make sure that proper wound care management is applied.

Ensure proper nutrition

Teach the patient's family/caregiver about signs and symptoms of infection and inform healthcare providers.

Teach the patient and the family how to protect him from the infection.

NANDA Nursing Diagnosis: Liquid Volume Depletion

Area: Nutrition Class: Hydration

Related Factors Surgical procedures, associated with antidiuretic therapy

Descriptive Factors Pale cold and humid skin of baby after operations

NOC	Area	Grade	NIC	Area	Grade
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0601 Liquid Balance	Physiologic Liquid & Health	Electrolyte Management	2180 Hipovolemia Management	Physiological: Tissue Complex	Tissue Perfusion Management
0602 Hydration	Physiologic Liquid & Health	Electrolyte Management	2080 Liquid/Electrolyte Management	Physiological: Tissue Complex	Tissue Perfusion Management

NANDA Diagnosis of Nursing: Imbalance in Feeding: Less than Need

Area: Nutrition, Class: Eating

Related Factors Due to medical diagnosis, the nutrition is difficult due to the weight, height and head percentile being less than 3

Descriptive Factors **Weight :** 2.810 (Normal: 5.94-9.34)

Height: 52cm (Normal: 61.6-71.3)

Head Circumference: 39cm (Normal: 40.4-45.3)

NOC	Area	Grade	NIC	Area	Grade
0102 Child Development: 6 months	Functional Health	Growth & Development	1160 Monitoring Nutrition	Physiological: Basic	Nutrition Support
			1200 Total Parenteral Nutrition Application	Physiological: Basic	Nutrition Support

NANDA Nursing Diagnosis: Self Care Deficit

Area: Activity/Relaxation, Class: Self Care

Related Factors Due to the current diagnosis of the patient, the personal needs of the patient are not met by the caregiver (mother)

Descriptive Factors Having crustacean formations at the baby's head

Baby's oral hygiene not provided

Bad smell coming from the body when baby first arrives

NOC	Area	Grade	NIC	Area	Grade
0300 Self-care: Daily Life Activities	Functional Health	Selfcare	1801 self-care assistance: Bathing/Hygiene	Physiological: Basic	Self-care facilitation

NANDA Nursing Diagnosis: Self Care Deficit

Area: Activity/Resting Class: Cardiovascular/Pulmonary Response

Related Factors Due to tracheobronchomalacia

Descriptive Factors The patient's aspiration pneumonia, including after treatment, hypertension when leaving the ventilator, use of accessory respiratory muscles, development of tachycardia (160), cyanosis

NOC	Area	Grade	NIC	Area	Grade
0403 Respiratory Condition: Ventilation	Physiologic Health	Cardiopulmonary	3300 Mechanical Ventilation	Physiological: Complex	Respiratory Management
0802 Vital signs	Physiologic Health	Metabolic Regulation	3140 Airway Aspiration 3350 Respiratory Monitoring 3310 Separation from Mechanical Ventilation 6680 Vital Findings Tracking	Safety	Risk Management

NANDA Nursing Diagnosis: Risk Of Difficulty As Their Caregivers (Mom)

Area: Role Relationship, Class: Carer's Role

Related Factors Depending on whether the medical diagnosis of the baby requires home treatment
Depends on the need for long maintenance nursing

NOC	Area	Grade	NIC	Area	Grade
2506 Caregivers Emotional Health	Health Information & Behavior	Health Status of Family Members	7040 Support for Caregiver	Family	Lifelong Care
2205 Care Provider Performance: Direct Care	Health Information & Behavior	Performance of Care Provider in Family			
1302 Coping	Functional Health	Psychological Adaptation			
2508 Career Goodness	Health Information & Behavior	Health Status of Family Members			
1813 Information: Treatment Regime	Health Information & Behavior	Health information			

NANDA Diagnosis of Nursing: Deterioration of Tissue Integrity

Area: Safety/Protection Class: Physical injury

Descriptive Factors Previous surgical operation, presence of gastrostomy, oral intake failure, presence of catheters, skin establishment

Related Factors No oral intake, change in nutrition, immobility, change in body temperature

NOC	Area	Grade	NIC	Area	Grade
1102 Tissue Integrity: Skin and Mucous Membranes	Physiologic Health	Tissue Integrity	3440 Maintenance of Incision Area	Physiological: Complex	Skin / Wound Management
1102 Wound Healing: Primary	Physiologic Health	Tissue Integrity	3660 Wound Care	Physiological: Complex	Skin / Wound Management

NANDA Nursing Diagnosis: Fall Risk

Area: Safety/Protection, Class: Physical injury

Related Factors Due to the fact that the patient is dependent on taking sedative medication with the use of multiple medical equipment

NOC	Area	Grade	NIC	Area	Grade
1909 Fall Prevention Behavior	Health Information & Behavior	Risk Control & Security	6490 Fall Prevention	Safety	Crisis Management
			0840 Positioning	Safety	Crisis Management
			Environmental Management: Security		

In conclusion, esophageal anomalies are frequently associated with laryngotracheal problem and important for morbidity and mortality. When life treating events occur, aggressive management should be recommended. So these disease seems rare, it has been observed that there is no study of nursing care of these diseases in Turkey. Therefore, new nursing studies are needed for these diseases.

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