

Olgu Sunumu/ Case Report

# Nursing Care According to Gordon's Functional Health Patterns Model: A Case Presentation of a Baby with Hydrops Fetalis and Meningomyelocele

## Gordon'un Fonksiyonel Sağlık Örüntüleri Modeline Göre Hemşirelik Bakımı: Hidrops Fetalis ve Meningomyelosel Olan Bir Bebeğin Olgu Sunumu

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### ABSTRACT

**Objective:** This study presents a rare and complex case of concurrent hydrops fetalis and meningomyelocele in an infant.

**Methods:** The patient was assessed using Gordon's functional health pattern model during the study conducted between April 30, 2022, and June 30, 2022. This model was employed to plan nursing care and provide guidance. It encompasses 11 functional patterns used to evaluate vital processes and daily life, specifically for babies with hydrops fetalis and meningomyelocele.

**Results:** The study highlights the challenges posed by the co-occurrence of two conditions, hydrops fetalis and meningomyelocele, for both patients and healthcare teams. Nurses employ this model to address the physical and emotional needs of patients and establish effective treatment plans.

**Conclusion:** This case presentation underscores the critical importance of nursing expertise and emotional support in the treatment and management of patients with rare diseases, emphasizing the necessity of a multidisciplinary approach to achieve optimal patient outcomes.

**Keywords:** Hydrops fetalis, meningomyelocele, nursing care, Gordon's functional health patterns model

### ÖZ

**Amaç:** Bu çalışma, bir bebekte nadir ve karmaşık bir şekilde görülen hidrops fetalis ve meningomyelosel eş zamanlı olgu sunmaktadır.

**Yöntem:** Hasta, 30.04.2022 - 30.06.2022 tarihleri arasında yürütülen çalışmada, Gordon'un Fonksiyonel Sağlık Örüntüleri Modeli kullanılarak değerlendirilmiş, hemşirelik bakımını planlamak ve rehberlik sağlamak amacıyla bu model kullanılmıştır. Bu model, hydrops fetalis ve meningomyelocele ile doğmuş bir bebeğin yaşamsal süreçlerini ve günlük yaşamını değerlendirmek için 11 işlevsel örüntüyü içermektedir.

**Bulgular:** Çalışma, hidrops fetalis ve meningomyelosel gibi iki hastalığın bir arada görülmesinin hem hastalar hem de sağlık ekipleri için önemli zorluklar sunduğunu vurgulamaktadır. Hemşireler, hastaların fiziksel ve duygusal ihtiyaçlarını karşılamak ve etkili tedavi planları oluşturmak için bu modele dayalı olarak çalışmaktadır.

**Sonuç:** Bu olgu sunumu, nadir hastalıklara sahip hastaların tedavi ve yönetiminde hemşirelik uzmanlığı ve duygusal destek rolünün kritik önemini vurgulamakta, en iyi hasta sonuçlarına ulaşmak için multidisipliner bir yaklaşımın gerekliliğini göstermektedir.

**Anahtar Kelimeler:** Hidrops fetalis, meningomyelosel, hemşirelik bakımı, Gordon'un fonksiyonel sağlık örüntüleri modeli

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## Introduction

Hydrops fetalis and meningomyelocele are two distinct and rare diseases, known for their complex nature, and are challenging situations when encountered concurrently in neonatal intensive care units (Kesilmez and Yüksel, 2022). Hydrops fetalis is a life-threatening condition characterized by an abnormal accumulation of fluid in the fetus (Gökçe, 2023; Quinn et al., 2021). Fetal anemia can arise from various causes such as heart disease, infections, or genetic disorders. This condition, which can occur for various reasons until the baby's birth, can significantly impact the infant's life (Mardy et al., 2019). Throughout this challenging process, nurses play a vital role by closely monitoring the baby's vital signs and maintaining fluid balance, providing crucial support and care. Additionally, this condition can lead to permanent damage and motor function loss (Alruwaili and Das, 2023). Nurses are essential for monitoring and providing appropriate care for spinal cord defects and related potential issues in the baby immediately after birth and in the postnatal period.

The co-occurrence of complex diseases like hydrops fetalis and meningomyelocele poses a significant challenge for both patients and healthcare teams. Nursing care is responsible for planning, implementing, and evaluating care with a multidisciplinary approach to meet the physical and emotional needs of patients and their families (Arriagada, 2016). While striving to optimize patient care, they collaborate with the medical team to develop the most effective treatment plan. Critical care nurses must systematically apply their knowledge and skills to ensure the optimal management of treatment and rehabilitation processes (Alastalo et al., 2021; Stewart and Rae, 2013). In the treatment and management of rare diseases, nurses' expertise and emotional support have become a significant source of strength for patients and their families. In this case presentation, we have addressed pediatric or neonatal intensive care nursing of hydrops fetalis and meningomyelocele, two rare diseases that occur simultaneously, with the aim of emphasizing the importance of nursing care in such cases.

### 1. Gordon's Functional Health Patterns Model

Marjory Gordon introduced the Functional Health Patterns (FHP) model in 1982 to guide the nursing assessment process. This model includes 11 functional patterns that assess an individual's health status and guide the development of a patient care plan. Gordon's FHP model was developed to

evaluate an individual's life processes and daily activities. These patterns offer a holistic approach to understanding the relationships between an individual's health status, quality of life, and lifestyle. The model aims to assess an individual's health status from a broader perspective to determine their primary care needs (Arzu and Hisar, 2020).

Gordon's FHPs include the following Patterns: Health Perception/Health Management, Nutritional-Metabolic, Elimination, Activity-Exercise, Sleep-Rest, Cognitive-Perceptual, Self-Perception/Self-Concept, Role-Relationship, Sexuality-Reproductive, Coping-Stress Tolerance, Value-Belief (Ceylantekin and Hisar, 2022).

### 2. Nursing Care Plan

Nursing intervention is a comprehensive approach aimed at meeting the physiological, psychological, and social needs of the patient and their family (Bayındır and Biçer, 2019). In this case presentation, a comprehensive nursing care plan was developed to understand and assess the needs of the patient and their family. Considering the baby's condition and treatment requirements, the nursing team collaborated to manage the baby's process effectively.

### 3. Case History

A 22-year-old mother's first pregnancy resulted in the birth of a 3700-gram baby girl, MA, at 36 weeks via cesarean section due to hydrops fetalis. The baby had an Apgar score of 3 at 1 minute and was immediately intubated. Among the medical diagnoses, the baby had prematurity, hydrops, and meningomyelocele, and was admitted to the neonatal intensive care unit (Figure 1).

The baby had an open wound on her back due to meningomyelocele. There was an excessive accumulation of fluid in the abdominal region (hydrops), and she was unconscious. Oral feeding was discontinued, and both a bladder catheter and an umbilical catheter were inserted. The baby's respiration was supported with mechanical ventilation (SIMV mode) and 70% Fio<sub>2</sub>. Due to the open wound on her back (meningomyelocele), an emergency surgical plan was made by the neurosurgery team. During this process, it was decided to drain the fluid accumulated in the abdominal region by paracentesis twice a day, with 50cc each time.

Daily assessments included routine weight measurements of the baby. Fluid intake and output were closely monitored, and urine output was continuously checked for this purpose. Vital signs

(heart rate, respiratory rate, blood pressure) were continuously monitored. Blood gas values were checked twice a day to assess the baby's acid-base balance and oxygenation status. In addition to urinary functions, hematological and biochemical values were also monitored.

The baby, who had started Dormicum infusion for sedation, was also put on Ampicillin and

Cefotaxime antibiotics. The baby's general condition was closely monitored by the neonatal intensive care team, and necessary treatment plans were made (Figure 2).

The care plan prepared for this baby covers the period from April 30, 2022, to June 30, 2022.



Figure 1 and Figure 2

#### 4. Vital Signs Monitoring Form

In the study, the vital signs monitored have been comprehensively presented in "Vital Signs Monitoring Form," as depicted in Table 1. This table provides a detailed record of the baby's vital indicators over a span of 3 days.

#### 5. Treatment Plan

Table 2, illustrating the medications prescribed for the patient, provides a comprehensive overview of the pharmaceutical interventions designed to address the baby's specific health condition.

**Table 1.** Vital signs monitoring form

Date: April 26, 2022						
Time	Baby's Temperature	Incubator Temperature	Heart Rate	Breathing	Blood Pressure	O2
13:00	36.4 C°	33.1 C°	142	Vent	70/34 mmHg	85
Date: May 01, 2022						
Time	Baby's Temperature	Incubator Temperature	Heart Rate	Breathing	Blood Pressure	O2
13:00	36.5 C°	33 C°	133	Ncpap/68	68/35 mmHg	90
Date: May 06, 2022						
Time	Baby's Temperature	Incubator Temperature	Heart Rate	Breathing	Blood Pressure	O2
13:00	36.6 C°	33 C°	150	60	64/41 mmHg	94

**Table 2.** Treatment plan

Drug Name	Dosage and Frequency	Time	Administration Route
Kvit	1mg – Single Dose	14:00	IV
HBV	Single Dose	14:00	IM
Ampicillin	130mg x 2	14:00 – 02:00	IV
Sefotaxime	130mg x 2	15:00 – 03:00	IV
Paracentesis	50cc x 2	14:00 – 02:00	
TPN	5cc/h	24-Hour Infusion	IV
Dopamine	40mg – Infusion	24-Hour Infusion	IV
Sedozolam	10mg – Infusion	24-Hour Infusion	IV
Thiociline	Pomad		
Albumin	2.5 gram – Single Dose	19:00	IV
Lasix	2.5mg – Single Dose	23:00	IV

**6.Intake and Output Monitoring**

Presented under the 'Intake and Output Monitoring' section, Table 3 serves as an essential tool for tracking the fluid balance of the patient. This table effectively illustrates the precise measurement of both the liquid intake and output, offering

valuable insights into the baby's overall fluid management. It plays a crucial role in assessing and maintaining the baby's hydration status and ensuring that their medical treatment aligns with their specific healthcare requirements.

**Table 3.** Intake and output monitoring

Date: April 29, 2022					
Time	IV Fluid	OGS	Urine Output	Paracentesis	Intravenous fluid loading
08:00 – 16:00	48 cc	24 ml	85 cc	50 cc	
16:00 - 24:00	48 cc	24 ml	97 cc	-	
24:00 – 08:00	48 cc	16 ml	162 cc	50 cc	100 cc
Total	144 cc	64 ml	344 cc	100 cc	100 cc
Balance			308 – 444 = -136ml		

**7.Nursing Care Plan According to Gordon's Functional Health Patterns Model**

The nursing care plan presented in Table 4 is a meticulous application of nursing care based on Gordon's Functional Health Patterns Model and is aligned with the guidelines from NANDA, NIC, and NOC references. This comprehensive plan is

Nursing Care Plan and Daily Evaluation According to Gordon's Functional Health Patterns Model: April 30, 2022 - June 30, 2022

meticulously crafted to address various aspects of the baby's health and provides a structured framework for nursing interventions. Focusing on these functional health patterns ensures that the baby's care is both holistic and tailored to their specific needs, ultimately promoting their overall well-being and recovery.

**NANDA-I Nursing Diagnosis 1:****Nursing Diagnosis:** Delayed child development**Definition:** Potential to exceed normal periods of growth and development**Code:** 00314**Domain 13:** Growth/development**Class 2:** Development**Descriptive features:** Premature birth, hydrops fetalis, meningomyelocele.**Associated factors:** Premature birth, the need for mechanical ventilation, and the inability to feed orally (Herdman and Kamitsuru, 2021).**NOC 1: Child Development: 1 Month****Definition:** Milestones of physical, cognitive, and psychosocial progression by 1 month of age.**Code:** 0120**Domain 1:** Functional Health**Class B:** Growth and Development**Beginning:** NOC Value 1.25 ; desired to be reached: NOC Value 4**Outcome Indicators**

	Serious Deviation from Normal Range 1	Significant Deviation from Normal Range 2	Moderate Deviation from Normal Range 3	Mild Deviation from Normal Range 4	No Deviation from Normal Range 5
012001- Signals hunger	1				
012002- Signals discomfort		2			
012003- Responds to sounds		2			
012011- Flexes extremity	1				
012012- Holds head erect momentarily	1				
012013- Turns head side to side when prone	1				
012015- Moro reflex	1				
012020- Suck reflex	1				

**Total NOC score = 1+2+2+1+1+1+1+1=10****\*10/8=1.25**

\*NOC average score: Total Score/Number of Used NOC Items (Moorhead et al., 2023)

**NIC 1: Developmental enhancement: Infant****Definition:** Facilitating optimal physical, cognitive, social, and emotional growth of child under 1 year of age**Code:** 8278**Domain 5:** Family**Class Z:** Childrearing Care**Activities:**

We observed the baby's physical development and generally noted positive progress.

We assessed the baby's cognitive development and achieved positive results.

We closely monitored the baby's social and emotional development and recorded positive developments.

We evaluated whether the patient successfully passed developmental milestones and documented them.

We planned and updated regular health check-up appointments to monitor the baby's growth and development (Butcher et al., 2018).

**NANDA-I Nursing Diagnosis 2:****Nursing Diagnosis:** Deficient fluid volume**Definition:** Above or below normal serum electrolyte levels or fluid volume.**Code:** 00027**Domain 2:** Nutrition**Class 5:** Hydration**Descriptive features:** Hydrops fetalis, mechanical ventilation, intravenous fluid intake.**Associated factors:** Intra-abdominal fluid accumulation, inability to feed enterally, use of urinary catheter.(Herdman and Kamitsuru, 2021).

**NOC 2: Fluid Balance****Definition:** Balance of the input and output of fluids in the body**Code:** 0601**Domain 2:** Physiologic Health**Class G:** Fluid and Electrolytes**Beginning:** NOC Value 2.18 puan; desired to be reached: NOC Value 5 puan

Outcome Indicators	Serious Deviation from Normal	Significant Deviation from Normal	Range 2	Moderate Deviation from Normal	Range 3	Mild Deviation from Normal	No Deviation from Normal Range 5
060101-Blood pressure				3			
060122-Radial pulse rate				3			
060107-24-hour intake and output balance		2					
060109-Stable body weight	1						
060116-Skin turgor		2					
060117-Moist mucous membranes		2					
060118-Serum electrolytes		2					
060126-Kidney Function	1						
060119-Hematocrit		2					
060110-Ascites				3			
060112-Peripheral edema				3			
<b>Total NOC score =</b>							
3+3+2+1+2+2+2+1+2+3+3=24							
(Moorhead et al., 2023).							

**\*24/11=2.18****NIC 2: Fluid Management****Definition:** Promotion of fluid balance and prevention of complications resulting from abnormal or undesired fluid levels**Code:** 4120**Domain 2:** Physiological: Complex**Class J:** Perioperative**Activities:**

We recorded the baby's fluid intake and output and continuously monitored whether there was a balance.

We carefully monitored vital signs and checked for any abnormal findings.

We assessed the baby's hydration status, particularly by checking skin turgor, and consistently observed a well-maintained level of hydration.

We closely monitored signs of fluid imbalance, such as edema, rapid weight gain or loss, and intervened when necessary.

(Butcher et al., 2018).

**NANDA-I Nursing Diagnosis 3****Nursing Diagnosis:** Impaired urinary elimination**Definition:** Decreased urine output or urinary retention**Code:** 00016**Domain 3:** Elimination and exchange**Class 1:** Urinary function**Descriptive features:** Use of urinary catheter, hydrops fetalis.**Associated factors:** Use of urinary catheter, mechanical ventilation requirement, abdominal fluid accumulation(Herdman and Kamitsuru, 2021).



**NOC 3: Kidney Function**

**Definition:** Ability of the kidneys to regulate body fluids, filter blood, and eliminate waste products through the formation of urine.

**Code:**0504

**Domain 2:** Physiologic Health

**Class F:** Elimination

**Beginning:** NOC Value 2 puan; desired to be reached: NOC Value 5 puan

Outcome Indicators	Serious Deviation from Normal Range 1	Significant Deviation from Normal Range 2	Moderate Deviation from Normal Range 3	Mild Deviation from Normal Range 4	No Deviation from Normal Range 5
050405-Urine specific gravity		2			
050406-Urine color		2			
050408-Urine pH		2			
050409-Urine electrolytes		2			
050426-Increased blood urea nitrogen		2			
050427-Increased serum creatinine		2			
050430-Increased urine protein		2			
<b>Total NOC score</b> = 2+2+2+2+2+2=14				<b>*14/7=2</b>	
*NOC average score: Total Score/Number of Used NOC Items (Moorhead et al., 2023).					

**NIC 3: Urinary elimination management**

**Definition:** Maintenance of an optimum urinary elimination pattern

**Code:** 0590 **Domain 1:** Physiological: Basic Care That Supports Physical Functioning **Class F:** Self-Care Facilitation

**Activities:**

We meticulously recorded the baby's urinary intake and output and continuously monitored for adverse conditions.

The color, odor, and density of urine were closely observed, and any abnormal conditions were checked and documented.

We assessed urinary pain or discomfort.

We examined for pathological changes in urine and observed for any abnormalities such as blood, cloudiness, or protein.

Additionally, we evaluated the frequency and urgency of urination(Butcher et al., 2018).

**NANDA-I Nursing Diagnosis 4**

**Nursing Diagnosis:** Ineffective breastfeeding

**Definition:** Problems with breastfeeding for the mother and/or baby

**Code:** 00104

**Domain 2:** Nutrition

**Class 1:** Ingestion

**Descriptive features:** Oral feeding closed, mechanical ventilation

**Associated factors:** Premature birth, need for mechanical ventilation (Herdman and Kamitsuru, 2021).

**NOC 4: Knowledge: Breastfeeding****Definition:** Extent of understanding conveyed about lactation and nourishment of an infant through breastfeeding.**Code:**1800      **Domain 4:** Health Knowledge and Behavior**Class S:** Knowledge Health Promotion**Beginning:** NOC Value 3.9 puan; desired to be reached: NOC Value 5 puan

Outcome Indicators	Serious Deviation from Normal Range 1	Significant Deviation from Normal Range 2	Moderate Deviation from Normal Range 3	Mild Deviation from Normal Range 4	No Deviation from Normal Range 5
180001-Benefits of breastfeeding					5
180020-Fluid intake requirements for mother					5
180004-Infant hunger cues				4	
180005-Proper technique for attaching infant to the breast			3		
180006-Proper infant positioning while nursing			3		
180007-Nutritive versus nonnutritive sucking			3		
180008-Evaluation of infant swallowing		2			
180010-Signs of adequate milk supply					5
180013-Signs of mastitis, blocked ducts, nipple trauma				4	
180021-Reasons for avoidance of water and supplements for infant					5
180015-Proper breast milk expression and storage techniques				4	
<b>Total NOC score</b> =5+5+4+3+3+3+2+5+4+5+4=43					
(Moorhead et al., 2023).					<b>*43/11=3.9</b>

**NIC 4: Nonnutritive sucking****Definition:** Provision of sucking opportunities for the infant**Code:** 6900      **Domain 5:** Family Care that supports the family**Class W:** Childbearing Care**Activities:**

We taught breastfeeding techniques and supported the mother's success in this process.

We positioned the mother and baby comfortably for breastfeeding, facilitating the breastfeeding process.

We closely monitored the breastfeeding process and provided guidance when necessary, ensuring the best possible breastfeeding experience for both the mother and the baby (Butcher et al., 2018).

**NANDA-I Nursing Diagnosis 5:****Nursing Diagnosis:** Decreased activity tolerance**Definition:** Inability to transport or consume oxygen necessary to meet metabolic needs**Code:** 00298**Domain 4:** Activity/rest**Class 2:** Activity/exercise**Descriptive features:** Hydrops fetalis, meningomyelocele**Associated factors:** Mechanical ventilation requirement, hydrops fetalis, premature birth (Herdman and Kamitsuru, 2021).



**NOC 5: Mobility****Definition:** Ability to move purposefully in own environment independently with or without an assistive device.**Code:** 0208**Domain 1:** Functional Health**Class C:** Mobility**Beginning:** NOC Value 2 puan; desired to be reached: NOC Value 4 puan

Outcome Indicators	Serious Deviation from Normal Range 1	Significant Deviation from Normal Range 2	Moderate Deviation from Normal Range 3	Mild Deviation from Normal Range 4	No Deviation from Normal Range 5
020801-Balance			3		
020809-Coordination		2			
020815-Bone integrity of lower extremity	1				
020803-Muscle movement		2			
020804-Joint movement			3		
020802-Body positioning performance		2			
020814-Moves with ease	1				
<b>Total NOC score</b> = 3+2+1+2+3+2+1=14			<b>*14/7=2</b>		
*NOC average score: Total Score/Number of Used NOC Items (Moorhead et al., 2023)					

**NIC 5: Activity therapy****Definition:** Prescription of and assistance with specific physical, cognitive, social, and spiritual activities to increase the range, frequency, or duration of an individual's or group's activity**Code:** 4310**Domain 3:** Behavioral**Class O:** Behavior Therapy**Activities:**

We established a customized exercise routine for the patient and encouraged the family to support the patient in increasing physical activity.

We gradually and carefully increased the baby's activity level, thereby improving the baby's physical fitness.

We closely monitored the baby's respiration and heart rate during physical activity to maintain a safe exercise level.(Butcher et al., 2018).

**NANDA-I Nursing Diagnosis 6:****Nursing Diagnosis:** Risk for aspiration**Definition:** Potential for foreign bodies to enter the respiratory tract**Code:** 00039**Domain 11:** Safety/protection**Class 2:** Aspiration**Descriptive features:** Mechanical ventilation, enteral feeding intolerance**Associated factors:** Premature birth, mechanical ventilation (Herdman and Kamitsuru, 2021).**NIC 6: Aspiration Precautions****Definition:** Prevention or minimization of risk factors in the patient at risk for aspiration**Code:** 3200**Domain 4:** Safety**Class V:** Risk Management**Activities:**

We ensured the patient was in an appropriate position during meals and beverages to optimize the baby's feeding experience.

We assessed the baby's swallowing function and did not identify any issues.

We closely monitored the rate of feeding and made necessary adjustments to help the patient achieve the best nutritional outcomes(Butcher et al., 2018).

**NOC 6: Aspiration****Definition:** Personal actions to understand and prevent the passage of fluid and solid particles into the lung**Code:**1935**Domain 4:** Health Knowledge and Behavior**Class T:** Risk Control**Beginning:** NOC Value 3.7 puan; desired to be reached: NOC Value 5 puan

Outcome Indicators	Serious Deviation from Normal Range 1	Significant Deviation from Normal Range 2	Moderate Deviation from Normal Range 3	Mild Deviation from Normal Range 4	No Deviation from Normal Range 5
193501-Seeks current information about aspiration prevention		2			
193502-Identifies risk factors for aspiration		2			
193503- Acknowledges personal risk factors for aspiration		2			
193506-Selects food of proper consistency					5
193507-Selects fluid of proper consistency					5
193509-Positions self-upright for eating and drinking					5
193510-Remains upright for 30 minutes after eating					5
<b>Total NOC score</b> =2+2+2+5+5+5+5=26					<b>*26/7=3.7</b>

\*NOC average score: Total Score/Number of Used NOC Items (Moorhead et al., 2023).

**NANDA-I Nursing Diagnosis 7:****Nursing Diagnosis:** Insomnia**Definition:** Undesirable disruption of sleep, wakefulness and/or sleep-wake rhythm**Code:** 00095**Domain 4:** Activity/rest**Class 1:** Sleep/rest**Descriptive features:** Premature birth, use of sedation**Associated factors:** Mechanical ventilation, use of sedation (Herdman and Kamitsuru, 2021).**NOC 7: Sleep****Definition:** Natural periodic suspension of consciousness during which the body is restored.**Code:**0004**Domain 1:** Functional Health**Class A:** Energy Maintenance**Beginning:** NOC Value 2 puan; desired to be reached: NOC Value 4 puan

Outcome Indicators	Serious Deviation from Normal Range 1	Significant Deviation from Normal Range 2	Moderate Deviation from Normal Range 3	Mild Deviation from Normal Range 4	No Deviation from Normal Range 5
000401-Hours of sleep			3		
000403-Sleep pattern		2			
000404-Sleep quality		2			
000405-Sleep efficiency		2			
000407-Sleep routine		2			
000418-Sleeps through the night consistently	1				
000420-Comfortable temperature in room			3		
000406-Interrupted sleep	1				
<b>Total NOC score</b> = 3+2+2+2+2+1+3+1=16					<b>*16/8=2</b>

\*NOC average score: Total Score/Number of Used NOC Items (Moorhead et al., 2023).

**NIC 7: Sleep enhancement****Definition:** Facilitation of regular sleep/wake cycles**Code:** 1850**Domain 1:** Physiological**Class F:** Self-Care Facilitation**Activities:**

We arranged the sleep environment in a soothing manner, creating an environment suitable in terms of lighting, noise, and comfort.

We established a regular sleep routine for the patient and set wake-up times to support the sleep schedule.

We taught awakening techniques to the mother and provided the necessary information to facilitate the awakening process (Butcher et al., 2018).

**NANDA-I Nursing Diagnosis 8:****Nursing Diagnosis:** Anxiety**Definition:** Perception of danger and discomfort with uncertainty**Code:** 00146**Domain 9:** Coping/stress tolerance**Class 2:** Coping responses**Descriptive features:** Premature birth, complicated medical condition**Associated factors:** Patient status, family status (Herdman and Kamitsuru, 2021).**NOC 8: Anxiety Level****Definition:** Severity of manifested apprehension, tension, or uneasiness arising from an unidentifiable source.**Code:**1211**Domain 3:** Psychosocial Health**Class M:** Psychosocial Well-Being**Beginning:** NOC Value 2.8 puan; desired to be reached: NOC Value 5 puan

Outcome Indicators	Serious Deviation from Normal Range 1	Significant Deviation from Normal Range 2	Moderate Deviation from Normal Range 3	Mild Deviation from Normal Range 4	No Deviation from Normal Range 5
121101-Restlessness		2			
121134-Excessive worry		2			
121106-Muscle tension			3		
121107-Facial tension			3		
121139- Hyperarousal			3		
121112-Difficulty concentrating			3		
121113-Difficulty learning				4	
121119-Increased blood pressure			3		
121120-Increased pulse rate			3		
121121-Increased respiratory rate			3		
121129-Sleep disturbance		2			
<b>Total NOC score</b> = 2+2+3+3+3+3+4+3+3+3+2=31					
(Moorhead et al., 2023).					

**\*31/11=2.8****NIC 8: Anxiety reduction****Definition:** Minimizing apprehension, dread, foreboding, or uneasiness related to an unidentified source of anticipated danger**Code:** 5820**Domain 3:** Behavioral**Class T:** Psychological Comfort Promotion**Activities:**

We closely monitored anxiety symptoms and identified any changes or potential crisis situations.

We taught the family calming and relaxation techniques to help them cope with anxiety.

We provided continuous support to the family and the patient to deal with anxiety and offered counseling when necessary(Butcher et al., 2018).

**NANDA-I Nursing Diagnosis 9:****Nursing Diagnosis:** Interrupted family processes**Definition:** Disrupted family processes**Code:** 00060**Domain 7:** Role relationship**Class 2:** Family processes**Descriptive features:** Premature birth, complicated medical condition**Associated factors:** Patient status, family status(Herdman and Kamitsuru, 2021).**NOC 9: Family Functioning****Definition:** Capacity of a family to meet the needs of its members during developmental transitions.**Code:** 2602**Domain 6:** Family Health**Class X:** Family Well-Being**Beginning:** NOC Value 3.8 puan; desired to be reached: NOC Value 5 puan**Outcome Indicators**

	Serious Deviation from Normal Range 1	Significant Deviation from Normal Range 3	Mild Deviation from Normal Range 4	No Deviation from Normal Range 5
260202-Cares for dependent members			4	
260204-Allocates responsibilities among members				5
260206-Maintains stable core of traditions				5
260209-Adapts to developmental transitions		3		
260211-Creates environment where members can openly Express feelings				5
260213-Involves members in problem-solving		3		
260205-Members perform expected roles		3		
260222-Members support one another			4	
260223-Members assist one another			4	
260216-Members spend time with one another		2		
<b>Total NOC score</b> = 4+5+5+3+5+3+3+4+4+2=38				<b>*38/10=3.8</b>
*NOC average score: Total Score/Number of Used NOC Items (Moorhead et al., 2023).				

**NIC 9: Family mobilization****Definition:** Utilization of family strengths to influence baby's health in a positive direction**Code:** 7120**Domain 5:** Family**Class X:** Lifespan Care**Activities:**

We carefully assessed family processes and assisted the family in working together more healthily when necessary.

We encouraged positive family communication and helped family members improve their communication.

We supported family members in coping effectively with each other and taught them how to work together in crisis situations (Butcher et al., 2018).

**NANDA-I Nursing Diagnosis 10:****Nursing Diagnosis:** Readiness for enhanced parenting**Definition:** Willingness of family members to use existing empowerment strategies to cope with health problems**Code:** 00164**Domain 7:** Role relationship**Class 1:** Caregiving roles**Descriptive features:** Premature birth, complicated medical condition**Associated factors:** Patient status, family status(Herdman and Kamitsuru, 2021).

**NOC 10: Family Coping****Definition:** Capacity of the family to manage stressors that tax family resources.**Code:** 2600**Domain 6:** Family Health**Class X:** Family Well-Being**Beginning:** NOC Value 3.4 puan; desired to be reached: NOC Value 5 puan

Outcome Indicators	Serious Deviation from Normal Range 1	Significant Deviation from Normal Range 2	Moderate Deviation from Normal Range 3	Mild Deviation from Normal Range 4	No Deviation from Normal Range 5
260003-Confronts family problems		2			
260005-Manages family problems		2			
260006-Involves family members in decision-making				4	
260007-Expresses feelings and emotions openly among members		2			
260021-Uses strategies to manage family conflict				4	
260011-Establishes family priorities				4	
260012-Establishes Schedule for family routines and activities				4	
260019-Share responsibility for family tasks				4	
260022-Reports need for family assistance					5
260024-Uses available family support system		3			
<b>Total NOC score</b> =2+2+4+2+4+4+4+4+5+3=34					
					<b>*34/10=3.4</b>

\*NOC average score: Total Score/Number of Used NOC Items (Moorhead et al., 2023).

**NIC 10: Emotional support****Definition:** Provision of reassurance, acceptance, and encouragement during times of stress**Code:** 5270**Domain 3:** Behavioral**Class R:** Coping Assistance**Activities:**

We carefully assessed the family's coping abilities and identified the strengths and weaknesses of each family member. We taught the family strategies to cope with health-related issues and assisted each family member in effectively applying these strategies.

We closely monitored the effectiveness of coping strategies and adjusted them as needed to help the family achieve the best outcomes (Butcher et al., 2018).

**Conclusion and Recommendations**

In this case presentation, we examined the nursing care of a baby with concurrent hydrops fetalis and meningomyelocele. Effective nursing intervention is crucial during the baby's treatment and care process. Factors such as closely monitoring the baby's vital signs, maintaining fluid balance, providing appropriate respiratory support, educating the family to participate in care, and reducing the risk of infection play a critical role in preserving and improving the baby's health.

We started care as a multidisciplinary team immediately after the baby was admitted to the neonatal intensive care unit. Using Marjory Gordon's 11 health patterns, we identified the baby's care needs and created a unique nursing care plan based on NANDA, NIC, and NOC guidelines. After the mother's post-cesarean condition stabilized, she moved to the parent's room and actively participated the baby's care alongside the nurses. All care procedures, from the time of admission until the

baby's discharge, were carried out with the mother's involvement, and she received education on how to care for her baby. As the mother became more involved in the baby's care, her anxiety and fear diminished, leading to increased peace for both the mother and the baby and the acceleration of the recovery process. During follow-up appointments after discharge, it was observed that the mother successfully implemented the care she had learned in the hospital at home, resulting in positive progress in the baby's health. We witnessed how effective this approach was for the patient and the family.

Throughout this care process, we addressed various NANDA diagnoses and implemented corresponding NIC interventions when developing care plans for the patient and the family. It was essential to monitor and assess NOC outcomes specific to these nursing diagnoses. This process has helped us underscore the importance and impact of nursing care.

As we monitored the baby's developmental process, we closely tracked their physical, cognitive, social, and emotional development. Additionally, we implemented NIC interventions in various areas, such as urinary elimination, fluid balance, breastfeeding effectiveness, activity tolerance, aspiration risk, sleep patterns, anxiety control, family function, and coping abilities, successfully monitoring NOC outcomes specific to these areas.

Neonatal intensive care nursing should be individually planned and executed to meet each baby's unique needs. A systematic approach to care delivery demonstrates its effectiveness in improving patient health outcomes. The implementation of practices based on scientific knowledge and evidence-based applications has been shown to enhance the quality of care. We recommend these fundamental principles of nursing care to our colleagues and believe that this approach can help patients achieve better outcomes and contribute to the establishment of a safer healthcare environment, emphasizing the importance of nursing care in the healthcare sector.

**Ethics Committee Approval:** An informed consent form was obtained from the mother of the baby on April 30, 2022.

**Peer-review:** External referee evaluation.

**Author Contributions:** Idea/concept: CB, BT; Design: CB, BT; Consulting: CB, BT; Data Collection and/or Data Processing: CB, BT; Analysis and/or Interpretation: CB, BT; Source Search: CB, BT; Writing of the Article: CB, BT; Critical Review: CB, BT.

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### What Did the Study Add to the Literature?

- Exploration of an Uncommon Clinical Confluence: This study contributes to the understanding of rarely encountered clinical scenarios by examining a distinctive case involving the coexistence of hydrops fetalis and meningomyelocele in an infant.
- Application of Gordon's Health Models in Nursing Practice: The study underscores the significance of utilizing Gordon's Functional Health Patterns Model by nurses in planning and guiding care for specific patients, emphasizing its pertinence in addressing intricate clinical scenarios.
- The Imperative of a Multidisciplinary Approach: In addressing complex conditions such as hydrops fetalis and meningomyelocele, this study underscores the critical importance of a multidisciplinary approach in

which collaboration among nurses, physicians, and various healthcare professionals is imperative for effective patient care.

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