

Neonatal Testicular Hemangioma: Nursing Care and Multidisciplinary Follow-Up Process After Delayed Diagnosis: A Case Report

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Abstract

This case report aims to describe the treatment and nursing care process of a newborn diagnosed with testicular hemangioma. Although no anomalies were detected at birth, redness appeared in the scrotal area 15 days later. Due to the initial failure to establish the correct diagnosis, the infant received inappropriate treatment, which led to impaired skin integrity and various complications. After the correct diagnosis was confirmed, a nursing care plan was developed and implemented using Gordon's Functional Health Patterns Model, with nursing diagnoses formulated according to NANDA-I. The care plan focused on areas such as health perception, skin condition, nutrition, cognitive awareness, and coping with stress. The care process continued until the child reached the age of nine, and the patient's current status was evaluated. Throughout the process, the family received education and psychological support, and complications were successfully prevented. This case highlights the importance of a holistic approach in nursing care that addresses not only physical needs but also emotional and social aspects. It also emphasizes the critical role of early diagnosis and appropriate treatment in preventing complications.

Keywords: Neonatal, testicular hemangioma, nursing care.

Neonatal Testiküler Hemanjiyom: Gecikmiş Tanı Sonrası Hemşirelik Bakımı ve Multidisipliner İzlem Süreci: Bir Olgu Sunumu

Öz

Bu olgu sunumu, testiküler hemanjiyom tanısı alan bir yenidoğanın tedavi ve hemşirelik bakım sürecini tanımlamak amacıyla hazırlanmıştır. Doğumda herhangi bir anomali saptanmamış olmakla birlikte, doğumdan 15 gün sonra skrotal bölgede kızarıklık ortaya çıkmıştır. Başlangıçta doğru tanının konulamaması nedeniyle yenidoğana uygunsuz tedaviler uygulanmış, bu durum deri bütünlüğünün bozulmasına ve çeşitli komplikasyonların gelişmesine yol açmıştır. Doğru tanının doğrulanmasının ardından hemşirelik bakımı, Gordon'un Fonksiyonel Sağlık Örüntüleri Modeli temel alınarak ve NANDA-I hemşirelik tanıları doğrultusunda planlanmış ve uygulanmıştır. Uygulanan bakım planında sağlık algısı, cilt durumu, beslenme, bilişsel farkındalık ve stresle başa çıkma gibi alanlara odaklanılmıştır. Bakım süreci hastanın 9 yaşına kadar devam etmiş ve son durumu değerlendirilmiştir. Aileye bakım süreci boyunca eğitim ve psikolojik destek sağlanmış, komplikasyonlar önlenmiştir. Bu olgu, hemşirelik bakımının sadece fiziksel değil, duygusal ve sosyal ihtiyaçları da kapsayacak şekilde bütüncül olarak ele alınmasının önemini ortaya koymaktadır. Ayrıca, erken tanı ve doğru tedavinin komplikasyonları önlemede kritik rol oynadığı vurgulanmaktadır.

Olgu Sunumu (Case Report)

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ETHICAL STATEMENT: Informed consent was obtained from the participants in accordance with the Declaration of Helsinki. The study has not been published elsewhere.

Anahtar Sözcükler: Yenidoğan, testiküler hemanjiyom, hemşirelik bakımı.

Introduction

Testicular hemangiomas are rare, benign vascular tumors typically detected in the neonatal period and often asymptomatic. In some cases, symptoms like scrotal swelling, discoloration, and pain may occur¹. While congenital vascular anomalies are more common in the skin, liver, and central nervous system (CNS) among pediatric patients, testicular involvement is exceptionally rare, with few cases reported². Diagnosis usually involves physical examination, ultrasonography, Doppler imaging, and occasionally biopsy. Management is often observational, but corticosteroids or surgery may be required if rapid growth or complications arise³. Alongside medical treatment, nursing care, education for families, psychosocial support, and long-term monitoring are vital.

Scrotal and testicular hemangiomas are extremely rare benign vascular tumors. While the incidence of infantile hemangiomas in the general neonatal population is approximately 1–3%, genital hemangiomas represent only about 2% of all cases, and scrotal or testicular involvement is exceptionally uncommon. To date, there are no population-based incidence data available, including from Western countries, and current knowledge is largely derived from isolated case reports and small case series. A review of the literature indicates that approximately 50–60 cases of scrotal and/or testicular hemangiomas have been reported worldwide, underscoring the rarity of this condition and the lack of reliable epidemiological data. The definitive treatment for scrotal hemangiomas is complete surgical excision, which allows for histopathological confirmation and effectively prevents potential complications such as bleeding, ulceration, infection, and pain; thus, surgery is considered the gold standard approach in the management of these lesions. Literature suggests that testicular hemangiomas can regress spontaneously, though some may progress, causing complications such as ulceration and skin changes. Early diagnosis and appropriate care are therefore crucial to preventing adverse outcomes⁴⁻⁷. This report presents a newborn with no initial anomalies who developed scrotal hyperemia and swelling by day 15. Misdiagnosis led to improper treatment and skin damage. Following the correct diagnosis, nursing care was structured using Gordon's Functional Health Patterns Model and supported by NANDA-I nursing diagnoses⁴, addressing health perception and health management, skin integrity, nutritional–metabolic status, cognitive–perceptual functioning, and coping–stress tolerance. Support and education were provided to the family, and care continued through age nine with long-term outcomes monitored. The case underscores the importance of early, accurate diagnosis and comprehensive nursing care in managing rare pediatric vascular tumors, offering guidance for clinical practice.

Nursing Care and Gordon's Functional Health Patterns Model

Comprehensive assessment in nursing is key to delivering quality, individualized care. Marjory Gordon's Functional Health Patterns Model supports a holistic evaluation of

individuals across physiological, psychological, sociocultural, and spiritual dimensions⁵. 11 patterns, the model guides nurses in data collection, diagnosis, care planning, and outcome evaluation⁶. For example, the Nutrition–Metabolism pattern covers intake and hydration, while the Coping–Stress Tolerance pattern addresses stress responses and coping resources⁷. This approach enables nurses to assess health issues beyond physical symptoms, promoting person-centered care⁸.

Table 1. Gordon’s 11 functional health patterns⁵⁻¹⁰

| No | Health Pattern | Content and Assessment Area |
|----|----------------------------------|---|
| 1 | Health Perception and Management | Individual’s perception of health, health behaviors, and use of health services |
| 2 | Nutrition – Metabolism | Daily intake of food and fluids, weight status, skin integrity |
| 3 | Elimination | Bowel, bladder, and sweating patterns |
| 4 | Activity – Exercise | Daily living activities, exercise level |
| 5 | Sleep and rest patterns | Sleep patterns and quality |
| 6 | Cognitive – Perceptual | Memory, perception, decision-making, pain sensation |
| 7 | Self-Perception – Self-Concept | Identity, body image, self-esteem |
| 8 | Role – Relationships | Family, social roles, relationships |
| 9 | Sexuality–Reproduction | Sexual function, fertility |
| 10 | Coping – Stress Management | Stressors and coping mechanisms |
| 11 | Values – Beliefs | Belief system, purpose of life, cultural values |

This table provides a detailed framework for nursing care. Nursing approaches are important for informing the family, providing psychological support, and promoting adherence to treatment.

Case History

A male infant was born on June 23, 2015, at 38 weeks of gestation with a birth weight of 3800 grams. No abnormalities were observed in the testicular region at birth. However, two weeks postpartum, the parents noticed redness and swelling in the scrotal area and consulted the pediatric clinic. Physical examination revealed scrotal hyperemia without any palpable mass. Despite evaluations by pediatrics, pediatric surgery, and urology departments, no definitive diagnosis was made, and topical medications for presumed skin irritation were prescribed.

The applied treatments led to deterioration of skin integrity, resulting in erythema, exudation, and bleeding. The infant exhibited persistent crying due to severe discomfort, particularly during urination. As symptoms progressed and the risk of secondary infection increased, the infant was hospitalized. Laboratory results were within normal limits, and Doppler ultrasonography confirmed the diagnosis of testicular hemangioma.

Figure 1. Hemangioma lesion developing on the scrotum on day 15 after birth



Initial treatment was inappropriate due to insufficient clinical awareness of hemangiomas. After the correct diagnosis was made, nursing care and medical management were revised accordingly. The family received education on hygiene, trauma prevention, and bleeding risks associated with the lesion.

The infant was placed under regular follow-up. Now 9 years old, the patient is monitored annually. Although no significant regression of the hemangioma has occurred, complications have been successfully prevented through appropriate care and follow-up. Parental education regarding the long-term nature of the condition continues.

Figure 2. Hemangioma lesion progression at age 9



In this case, nursing management was evaluated using Nursing care was planned and implemented based on Gordon's Functional Health Patterns Model and the nursing process, using standardized nursing diagnoses and interventions in accordance with NANDA-I, NIC, and NOC classifications. Gordon's Functional Health Patterns Model provides a holistic framework that considers the health status of both the patient and the family by addressing physical, emotional, cognitive, and social functions, while NANDA-I nursing diagnoses offer a standardized and systematic approach for identifying patient- and family-centered care needs¹¹⁻¹³.

In this context, nursing care is explained through the assessment areas outlined in Table 2.

Table 2. Nursing Care Plan According to Gordon's Functional Health Patterns Model¹¹⁻

13

| Gordon's Functional Health Pattern | Nursing Diagnosis (NANDA) | Defining Characteristics / Risk Factors | Goals / Expected Outcomes | Nursing Interventions (NIC) | Evaluation (NOC) |
|---|-------------------------------|---|--|--|--|
| Immunity and Skin Integrity | Impaired skin integrity | Erythema, exudation, bleeding in the scrotal area; history of inappropriate topical treatment | To maintain skin integrity and prevent secondary infection | <ul style="list-style-type: none"> Assessed the scrotal area each shift for redness, exudation, bleeding, and signs of infection Increased frequency of diaper changes to prevent trauma Performed appropriate wound and skin care according to physician orders Educated parents on proper scrotal care at home | <ul style="list-style-type: none"> No progression of skin breakdown observed No secondary infection developed |
| Cognitive–Perceptual Pattern | Acute pain | Persistent crying, increased discomfort during urination, sensitivity in the scrotal area | To reduce pain and increase infant comfort | <ul style="list-style-type: none"> Assessed pain using observational neonatal pain scales Used gentle handling during care procedures Monitored prescribed analgesic therapy Educated parents on comforting and positioning techniques | <ul style="list-style-type: none"> Decreased frequency and intensity of crying Improved comfort during care |
| Health Perception and Health Management | Risk for infection | Open lesion in the scrotal area; immature immune system of the newborn | To prevent the development of infection | <ul style="list-style-type: none"> Monitored vital signs and laboratory findings Maintained strict aseptic techniques during care Educated parents about signs of infection Reported suspicious findings promptly to the physician | <ul style="list-style-type: none"> No signs of infection during hospitalization |
| Coping and Stress Tolerance | Anxiety (parents) | Rare diagnosis, delayed diagnosis, fear of bleeding and long-term complications | To reduce parental anxiety and promote effective coping | <ul style="list-style-type: none"> Encouraged parents to express fears and concerns Provided clear information about the benign nature and prognosis of hemangioma Answered questions and corrected misconceptions Referred parents for psychological support when needed | <ul style="list-style-type: none"> Reduced parental anxiety levels Increased parental participation in care |
| Health Perception and Health Management | Deficient knowledge (parents) | Limited knowledge about testicular hemangioma and home care | To improve parents' knowledge and caregiving skills | <ul style="list-style-type: none"> Educated parents about the nature, course, and possible complications of hemangioma Provided instruction on home care, hygiene, trauma prevention, and bleeding management Emphasized the importance of long-term follow-up | <ul style="list-style-type: none"> Parents correctly verbalized care instructions Appropriate home care practices maintained |

Nursing care was planned and implemented in accordance with Gordon's Functional Health Patterns Model and the nursing process, including the stages of assessment, nursing diagnosis, planning, implementation, and evaluation^{11,12}.

During the assessment phase, data related to the newborn and the family were collected through clinical observation, physical examination, family interviews, and review of medical records¹². Particular attention was given to the presence of erythema, exudation, and bleeding in the scrotal area, as well as signs of discomfort such as persistent crying. Laboratory findings were within normal limits, and the diagnosis of testicular hemangioma was confirmed by Doppler ultrasonography. The family's level of knowledge, emotional responses, and coping ability were also assessed, revealing increased parental anxiety due to the rarity of the condition and delayed diagnosis. Based on the collected data, the nursing diagnosis stage identified impaired skin integrity, acute pain, risk for infection, parental anxiety, and deficient knowledge in parents, in line with NANDA-I nursing diagnoses. In the planning phase, individualized and measurable goals were established to maintain skin integrity, reduce pain, prevent infection, decrease parental anxiety, and enhance parental knowledge and participation in care. Nursing care was designed to support both the infant's comfort and the family's adaptation to the long-term management of the condition^{12,13}.

During the implementation phase, the scrotal area was regularly assessed, and appropriate skin and wound care were provided, with careful attention to preventing trauma during diaper changes. Pain indicators were closely monitored, and comfort-enhancing measures were applied. Strict aseptic principles were followed to minimize infection risk. In addition, parents received education regarding the nature of testicular hemangioma, home care practices, bleeding precautions, and the importance of long-term follow-up. Psychosocial support was also provided to address parental anxiety¹⁴.

In the evaluation phase, the effectiveness of nursing interventions was continuously assessed. No progression of skin breakdown or secondary infection was observed, the infant's discomfort and crying decreased, and parents demonstrated reduced anxiety and improved engagement in the care process. Parents were able to correctly describe and apply home care practices¹⁵.

In general, the nursing care process guided by Gordon's Functional Health Patterns Model enabled comprehensive, patient- and family-centered care¹⁶, contributing to the prevention of complications, improved infant comfort, and strengthened parental coping and caregiving competence.

Conclusion

Testicular hemangiomas are among the rare cases seen in the neonatal period. These hemangiomas are generally classified as benign vascular tumors. Although they can be present at birth or develop shortly after, delayed diagnosis and incorrect treatments can lead to complications⁹. As in this case, early diagnosis and appropriate treatment of

testicular hemangioma are considered crucial and important for improving the patient's prognosis.

The literature indicates that testicular hemangiomas are usually asymptomatic. Some hemangiomas may regress with age, while others may progress, causing complications such as scrotal skin changes, ulceration, and bleeding¹⁰. These complications can complicate the care and treatment process for patients. Early and accurate diagnosis, as demonstrated in this case report, is therefore very important. In our case, delayed diagnosis resulted in delayed initiation of proper care and treatment, and the use of incorrect pharmacological treatments caused disruption of skin integrity.

The patient and family went through difficult times due to the incorrect treatment applied to the infant. In this context, misdiagnoses and inappropriate treatments in some cases negatively affect the healing process². Furthermore, it is emphasized that treatment of testicular hemangiomas should be closely monitored with physician and nurse supervision and managed under observation³.

Gordon's Functional Health Patterns Model enables nurses to provide effective care in rare cases such as testicular hemangioma by holistically evaluating physical, psychological, and social dimensions.

The use of this model in clinical practice supports structured nursing assessment, facilitates early identification of complications, and contributes to the development of individualized and evidence-based care plans^{9,11}. From a practical standpoint, this case underscores the importance of increasing awareness among healthcare professionals, particularly nurses working in neonatal and pediatric settings, regarding rare vascular lesions such as testicular hemangioma¹⁶. Early recognition of atypical scrotal findings, timely referral, and avoidance of unnecessary or inappropriate treatments are critical to preventing complications and improving outcomes. In addition, integrating standardized nursing assessment models into routine neonatal care can help protect skin integrity, reduce the risk of secondary complications, and support holistic patient management¹⁷. Furthermore, close interdisciplinary collaboration and continuous follow-up involving physicians and nurses are essential for monitoring lesion progression, guiding timely treatment decisions, and minimizing the physical and psychological burden on both the infant and the family¹⁸⁻²⁰. These practice-oriented implications highlight the value of structured nursing care and coordinated clinical management in rare neonatal conditions.

This case highlights the importance of structured and systematic nursing assessments in neonatal care. Nurses working in neonatal and pediatric settings should incorporate standardized assessment models, such as Gordon's Functional Health Patterns, into routine practice to support early recognition of atypical findings and prevent secondary complications. Increased clinical awareness of rare vascular lesions, careful skin and scrotal assessment, timely interdisciplinary referral, and avoidance of unnecessary interventions are essential components of effective nursing care. In addition, close collaboration between nurses and physicians, ongoing follow-up, and family-centered

education play a critical role in optimizing clinical outcomes and reducing both physical and psychological burden for the infant and family.

In similar cases of neonatal hemangioma, nursing practices should prioritize systematic skin and scrotal assessment at each shift to ensure early detection of lesion progression or complications. Nursing care plans should be structured to address risks such as compromised skin integrity, infection, pain, and stress responses, while also considering the psychosocial impact on the infant and family. Regular monitoring, accurate documentation, and timely referral to relevant specialties are crucial to avoid delayed diagnosis and unnecessary interventions.

Nursing interventions should also actively involve parents in daily care by providing clear guidance on lesion observation, warning signs, and follow-up requirements. Emotional support and reassurance should be integrated into routine care to reduce parental anxiety and improve coping. Additionally, close interdisciplinary collaboration and continuity of follow-up are recommended to support timely clinical decision-making, optimize outcomes, and ensure holistic, family-centered care in neonatal settings.

Ethical Considerations

Informed consent was obtained from the patient's relative after explaining the purpose of the study. It was clearly stated that participation in the research was entirely voluntary, and permission was granted accordingly.

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