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Nursing Care in Children with COVID-19 Diagnosis: A Case Study

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ABSTRACT

Our study case M is a boy aged 168 days. His height was 61 cm, and his weight was 9,000 g. Nasopharyngeal and throat swabs were taken from the patient admitted to the emergency department with complaints of coughing, wheezing, and difficulty in breathing to conduct a polymerase chain reaction test. According to the result of the polymerase chain reaction test, the infant was diagnosed with coronavirus disease 2019 and was hospitalized in the relevant service. The patient underwent computed tomography on the same day, and his lung findings confirmed the diagnosis of coronavirus disease 2019. Because respiratory findings indicated tachypnea, humidified high-flow nasal oxygen therapy was started. If an infant receiving humidified high-flow nasal oxygen therapy is in the at-risk group, this poses risk both for the parents and for healthcare professionals. The aim of conducting this case study was to reduce the high risk of transmission of coronavirus disease 2019 from patients diagnosed with the disease and receiving humidified high-flow nasal oxygen therapy and to create a resource for the planning and implementation of correct nursing interventions. In the patient, diagnoses of the risk of infection transmission, ineffective respiratory patterns, social isolation, disruption of skin integrity, anxiety and lack of information, and interventions related to these diagnoses were discussed in light of the literature.

Anahtar Kelimeler: COVID-19, child, nursing care, humidified high-flow nasal oxygen therapy

Introduction

Coronavirus disease 2019 (COVID-19), which emerged in Wuhan in China in 2019 and was declared a pandemic by the World Health Organization (WHO) on March 11, 2020 is highly contagious.[1] So far, there is no proven data on the treatment of COVID-19 in pediatric patients. Therefore, evaluations of COVID-19 treatment methods in pediatric patients are based on the treatment methods used in adult patients, which necessitates the replanning of the treatment according to the current condition of the pediatric patient.[2,3]

From the beginning of the COVID-19 outbreak until March 22, 2020, none of those aged between 0 and 9 years died. However, the mortality rate was 0.2% in children aged between 10 and 19 years. In addition, in the light of the available data, it is stated that the clinical course of COVID-19 is milder in pediatric patients. On the other hand, attention is drawn to the importance of possible side effects of drug therapies in children. Currently, separate treatment protocols are recommended for each pediatric patient.[2,4]

Humidified high-flow nasal oxygen (HFNC) therapy is an effective and safe supportive treatment method in patients with respiratory distress. HFNC therapy is used in patients who do not respond to standard simple oxygenation methods (wearing an oxygen mask, wearing a mask with a reservoir, and others).[5]

To prevent the spread of the virus in patients undergoing HFNC therapy, it is necessary to use a surgical mask and to place the patient in a negative pressure room, if possible. In the care and treatment processes of high-risk pediatric patients who undergo HFNC therapy during the COVID-19 pandemic, both parents' and healthcare personnel's compliance with isolation measures gains importance.[2]

In the literature, it is stated that improper nursing care management may have permanent and long-term adverse effects on children. Therefore, this case report was aimed to contribute to the appropriate care management by considering the care needs of and interventions undergone by infants diagnosed with COVID-19 and their parents within the framework of the literature.

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Case Presentation

Infant M aged 168 days was investigated in this case report. The mother was aged 23 years, and his father was aged 26 years. Both parents were third-degree relatives. Infant M lived with his grandparents at home. During delivery, no complications were developed in the baby who was born vaginally at term. He was administered the recommended vaccinations in accordance with the vaccination schedule. After birth, infant M was brought to the emergency room owing to the complaints of coughing and wheezing, and he received oxygen therapy. When he was aged 6 months, he was admitted to the emergency room owing to complaints of coughing, wheezing, and difficulty in breathing, and he received a prediagnosis of COVID-19. It was determined that M's grandmother and grandfather were also hospitalized owing to COVID-19. He was diagnosed with COVID-19 after a polymerase chain reaction (PCR) test was conducted with nasopharyngeal and throat swabs. On the same day, he underwent computed tomography. Ground-glass opacity on the computed tomography imaging of the lungs confirmed the diagnosis of COVID-19 (Figure 1); thus, HFNC therapy was started. Baby M was monitored for 14 days in the pediatric ward to provide treatment and care.

The physical examination findings of baby M include the following:

Weight and height: The baby weighed 9 kilograms and was 61 cm tall.
General appearance: The baby had blue lips (cyanosis), nasal flaring, and tachypnea.
Skin: The baby had ecchymotic areas caused by blood collection and intravenous (IV) interventions and erythema in the perineal area.
Head: The head circumference was 42 cm; the posterior fontanel was closed, and the anterior fontanel was 1 x 1 cm open.
Nose: The nose had a natural appearance; there were nasal flaring and nasal discharge.
Chest: Chest was retracted, respiration was 53 breaths per minute (spontaneous breathing), and oxygen saturation (SpO_2) was 93%.
Genitals: Erythema was found in the perineal area, and there were no hypospadias or epispadias.
Heart: Pulse rate >63 beats per minute.
Abdomen. This was slightly distended and soft, and bowel sounds were 3-4 per minute.
Vital signs: Vital sign results included a body temperature of 38.5°C, heart rate of 163 beats per minute, blood pressure of 82/44 mmHg, respiratory rate of 62 beats per minute, and SpO_2 of 93%.

The laboratory test results, based on blood samples taken on the first day, of the patient are shown in Table 1, and the treatment protocol of the patient is shown in Table 2.

Nursing Care Management

Diagnosis: Ineffective breathing pattern

Diagnostic Characteristics: These include tachypnea, difficulty in breathing, need for oxygen intake with a nasal cannula, nasal flaring, increase in secretion, and breathing not relieved with oxygen hood or oxygen mask.

Purpose: The purposes of the treatment are to maintain the airways open, provide optimum oxygenation, ensure sufficient secretion, and ensure the spontaneous breathing of the patient.

Nursing Interventions

Planning: In the HFNC therapy, SpO_2 targeted to be in the range of 92-96% is reassessed within 1 hour and followed up to prevent clinical worsening. The inhaler treatments are administered with an aerochamber or metered-dose inhaler (puff) and not with a nebulizer. To ensure nasal airway patency while the patient is receiving the HFNC therapy, nasal irrigation with saline is repeated when necessary. The patient is placed in a semi-Fowler's position. The patient's oral care is performed when necessary. When necessary, the patient is aspirated using an aspiration system. The patient's extremities are evaluated in terms of temperature and color. The patient should be frequently monitored in terms of their respiratory function.[6]

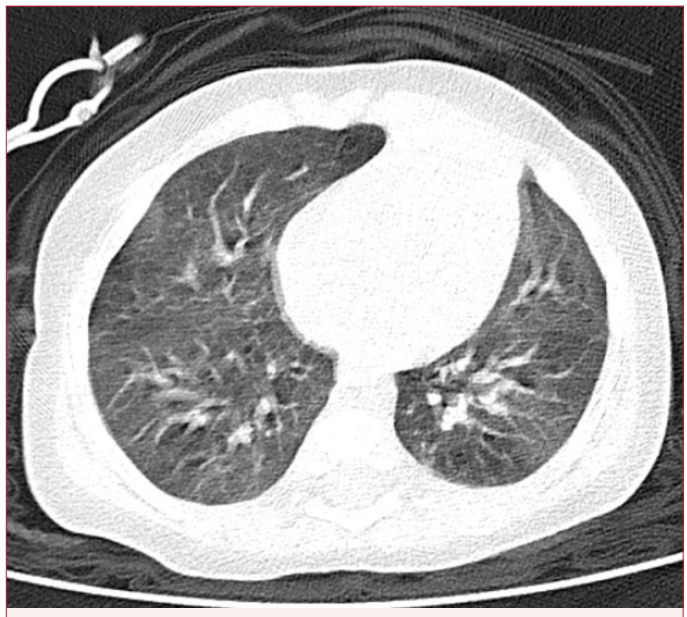

Figure 1. Case M's lung tomography

Implementation and Evaluation: The patient was monitored for 1 hour after he was referred to our clinic from the emergency department because he had difficulty in spontaneous breathing and because oxygen therapy with a mask was insufficient. Oxygen saturation was 93%, and the presence of nasal flaring and tachypnea (62 beats/minute) necessitated the start of the HFNC therapy. The patient was taken to the room closest to the nurses' station for close monitoring. Owing to the close monitoring requirement during the first 24 hours, he was followed every hour. His general condition was evaluated with laboratory findings, by physical examination, and by monitoring his vital signs. On the other days when the patient was followed, isolation measures were taken to prevent infection transmission. The patient's room was entered only during the treatment and care hours and at the request of his mother. Baby M was observed in the semi-Fowler's position. Because it is a requirement in HFNC therapy, nasal irrigation with saline was performed in the first 8 hours. Because the patient's breathing was poor, intraoral and nasal secretions were aspirated every 4 hours and when necessary in the first 24 hours. The patient's treatment plan included the use of bronchodilators. In the literature, because the use of a mask during inhaler-drug application is discouraged to prevent droplet spread in allergic children or in cases of COVID-19 complicated with secondary bacterial pneumonia,[7] a nebulizer was used during the first 24 hours owing to the poor clinical course in the patient. In the first 4 hours of the patient's follow-up, magnesium sulfate was administered intravenously at the request of the doctor because his breathing did not relieve. To prevent the risk of aspiration during the HFNC therapy, oral feeding was terminated. The patient was administered maintenance fluid (5% dextrose, 0.9% sodium chloride 900 cc for 24 hours) calculated according to his body weight. The patient underwent

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Table 1. Laboratory results of infant M

Laboratory test results* Biochemistry	Normal value	Hematology	Normal value	Blood gas	Normal value
Glucose: 77 mg/dl	60-100	Hemoglobin: 8.6 g/dl	14.1-18.1	pH: 7.37	7.35-7.45
AST: 41 U/L	15-60	RBC: 3.15x10^6/Ul	4.69-6.13	pCO_2: 33.9	35-45
ALT: 40 U/L	13-45	Hematocrit: 24.2%	43.3-53.7	PO_2: 88.9	80-100
Creatinine: 0.35 mg/dl	0.4-0.7	PLT: 352x10^3/Ul	140-400	Na^+: 137 mmol/L	134-150
CRP: 0.6 mg/L	0-5	MCHC: 35.4 g/dl	31.8-35.4	K^+: 5.87 mmol/L	3.5-5.5

ALT: alanine aminotransferase; AST: aspartate aminotransferase; CRP: C-reactive protein; K+: potassium ion; MCHC: mean corpuscular hemoglobin concentration; Na+: sodium ion; pCO2: partial pressure of carbon dioxide; PLT: platelet count test; pO2: partial pressure of oxygen; RBC: red blood cell count.

Table 2. Treatment protocol of the patient

Azithromycin: 1x100 mg	10 p.m.	Salbutamol inhaler: 8x1 puff	
Oseltamivir: 2x15 mg	10 a.m. 10 p.m.	Fluticasone inhalation: 2x1 puff	12 noon midnight
Ceftriaxone: 2x500 mg	10 a.m. 10 p.m.	Methylprednisolone: 1x20 mg	10 a.m.
Paracetamol (LH): 1x9 cc		MgSO4 (LH): 1x225 mg	
5% dextrose, 0.9% NaCl: 900 cc/24 h			
(10 cc 7.5% KCl for each 500 cc)			

h: hour; KCl: potasium chloride; LH: XXX; MgSO4: magnesium sulfate; NaCl: sodium chloride.

HFNC therapy for 12 days, during which he was monitored. Administration of bronchodilators was carried out with an aerochamber on the fifth day of the monitoring. With relief in the patient's breathing, nebulization was reduced on the eighth day and terminated on the 12th day. There was a decrease in the patient's respiratory rate (40 breaths per minute), and his saturation value ranged between 95% and 100%. The patient was monitored without administering oxygen. Relief was observed in the patient's breathing, and the goal was achieved.

Diagnosis: Risk of transmitting infection

Diagnostic Characteristics: These included a diagnosis of COVID-19 transmitted by respiratory droplets and contact, which required isolation.

Purpose: To minimize the patient's risk of transmitting the disease until the infection resolves.

Nursing Interventions

Planning: Patients diagnosed with COVID-19 should be isolated in a single room owing to droplet and contact precautions. In cases of intense contact, bonnet, coveralls, and boots are used. One pair of the 2 pairs of gloves worn during airway interventions (intubation, aspiration, and others) should be taken off and put into double-layer protection bags. Contaminated tools and materials should not be taken out of the room before they are placed in double-layer protection bags. Healthcare professionals who perform HFNC therapy and interventions such as aspiration and nebulization that may cause scattering or come in contact with patients at a distance of 1 m must wear not only N95, FFP2 masks, or an equivalent mask but also personal protective equipment (PPE), such as gloves, gowns, coveralls, and safety glasses or face shield. In patients diagnosed with COVID-19 and intubated, the closed aspiration system should be used, and if open aspiration is performed, the intervention should be performed with full protection by wearing an N95, FFP2, or equivalent mask; goggles/visors, gowns, gloves, and others. Oral care should be performed according to the increase in intraoral secretion.[6, 8,12]

Intervention and Evaluation: Before entering the patient's room, healthcare personnel wore the necessary PPE, and then they performed the interventions. An isolation card was hung on the door of the patient room. PPE such as disinfectant, gloves, cap, and shoe covers were placed at the entry to the patient's room. After leaving the patient room, healthcare personnel threw infected wastes into double-layer protection bags placed at the entry to the patient room. A personal noncontact thermometer was placed in the patient room. The mother was informed that she had to wear a surgical mask when she was in the room. During the aspiration and other invasive interventions, the patient underwent, the procedure was carried out with the equipment that would provide full protection, and then all medical waste in the room was destroyed. The patient wore a surgical mask on nasal cannula during nebulization during the HFNC therapy to prevent transmission through droplets. Nebulizer sets (reservoir masks) were replaced with new ones every 24 hours. For healthcare workers to be less exposed to viral load, from the eighth day of the patient's hospitalization (with the improvement of his general condition), the number of entries into the room, treatment hours, and the number of observations of vital signs were limited. These attempts performed to prevent transmission of infection minimized the risk of patient-to-patient and patient-to-healthcare personnel infection transmission. This process was supported by limiting the entering and exiting of the clinic.

Diagnosis: Fluid-electrolyte imbalance risk

Diagnostic Characteristics: Stopping the patient's oral intake and providing the patient with IV fluid support.

Purpose: To maintain the fluid-electrolyte balance in the patient and to ensure that the patient has no signs of dehydration.

Nursing Interventions

Planning: In children undergoing HFNC therapy, oral feeding is terminated to prevent the risk of aspiration and not increase retractive respiration. The amount of fluid that a patient should take daily is calculated by the physician and administered intravenously. To prevent dehydration, fluid intake and output and daily weight loss are monitored. Serum electrolytes in blood values are checked, and serum and urine osmolality is monitored. When there are vomiting, diarrhea, and fever, additional fluid losses are taken into account, and isotonic fluid loading is achieved when necessary. The patient is monitored for hypovolemia (hypotension, tachycardia, decrease in jugular vein distention, decrease in skin turgor) and hypervolemia (edema, jugular vein distention, tachycardia, increase in body weight).[6,13]

Intervention and Evaluation: Administration of IV maintenance fluid calculated according to the bodyweight of patient M was started from the first hour of his hospitalization. Oral feeding was terminated owing to the risk of aspiration. Blood glucose monitoring performed twice a day was initiated owing to methylprednisolone treatment and termination of feeding. After the methylprednisolone treatment was stopped on the fifth day, blood glucose monitoring was reduced to once a day. The patient's weight was monitored daily with the scale brought to the patient's room. Edema was monitored daily. Fluid intake and output were monitored by weighing the patient's diaper. The baby defecated and urinated every day. No signs of hypovolemia or hypervolemia were observed in the patient. From the third day of the treatment onward, patient M was fed with 8x5 cc formula per day. With a decrease in respiratory rate (40-50 breaths per minute) on the eighth day, daily fluid intake was reduced by 50%, and formula intake was increased to 12x35 cc per day. Fluid intake was reduced by 75% on the 10th day. On the 12th day of the patient's monitoring, HFNC therapy and the patient's fluid intake were stopped, and he was fed only with formula (12x70 cc). Therefore, blood sugar monitoring was also terminated. After the treatment, the patient was fed through oral intake completely, and IV fluid support was discontinued, which suggests that the goal was achieved.

Diagnosis: Hyperthermia

Diagnostic Characteristics: High body temperature due to COVID-19 (temporal path 38.5°C)

Purpose: To achieve the normal body temperature and maintain it within normal limits.

Nursing Interventions

Planning: Getting the increased body temperature under control in young children is of great importance. To reduce the fluid balance in the body and not increase the metabolic rate, 5-10 mg/kg of paracetamol can be administered orally to patients diagnosed with COVID-19. Continuation of IV fluid support is important. The room temperature is lowered, and it is important that the patient's body temperature does not exceed 39°C. In hyperthermia, it is recommended to control body temperature after the patient's clothes are removed, and the patient undergoes cold application, and if the body temperature does not decrease within 1 hour, the patient is bathed with lukewarm water at a temperature close to body temperature, and his body temperature is measured 30-60 minutes later.[14-16] The patient is evaluated for signs of infection and is closely observed for febrile convulsion.[6,17]

Intervention and Evaluation: When the patient was admitted to the service, a blood culture was done for the regulation of antibiotics, and the baby was bathed with lukewarm water before intervening to control the fever (38.5°C). Because there was no decrease in body temperature after attempts were made for 1 hour to control the fever, the patient was administered 4x9 cc paracetamol vial (10 mg/mL) (4 times at a dose of 10 mg/kg). The room was frequently ventilated to reduce the room temperature, and the patient's clothes were changed. Fever was monitored (12x1 per day), but no significant decrease was observed in the body temperature in the first 24 hours of hospitalization. Antibiotic treatment was initiated. Then it was observed that his body temperature began to drop to normal values (36.3-37.2°C). From the second day of hospitalization, the number of body temperature monitoring was reduced by half (6x1), and a plan was made to administer paracetamol when necessary, which was not administered. Body temperature was in normal course owing to the treatments applied.

Diagnosis: Risk of disruption of skin integrity

Diagnostic Characteristics: Areas of ecchymosis due to repeated IV interventions and irritation around the nose due to nasal cannula irritation.

Purpose: To prevent the disruption of skin integrity, to protect skin integrity, and to prevent secondary infection risk.

Nursing Interventions

Planning: Ensuring skin integrity prevents secondary infections likely to develop. IV interventions and treatments applied to patients disrupt the integrity of the skin. HFNC therapy causes an irritation in the nasal mucosa and cheeks owing to the long-term use of the nasal cannula. Applying water-based moisturizer to the cheeks after removing the nasal cannula intermittently and cleaning the nose prevents the injuries likely to occur. Areas of ecchymosis caused by IV interventions should be kept clean and dry.[6,18]

Intervention and Evaluation: Because repeated IV instead of intermittent IV interventions damaged the integrity of the skin, collective IV interventions (blood gas collection, blood collection, and others during catheterization) were performed. IV treatments and the amount of maintenance fluid were frequently checked, and the patient was evaluated for complications. During the daily physical examination of the patient, the nose was massaged with a water-based moisturizing cream for the care of the redness and lacerations caused by the nasal cannula. With the increase in urine output in the patient owing to IV fluid intake, the mother was told that she should increase the frequency of perineal care and should perform the care with lukewarm water and cotton wool, which was shown to her. Then she performed it under the supervision of the nurse. No intervention-induced IV complications were observed in the patient. It was also observed that the mother assumed the responsibility for the baby's personal care. Recurrence of lacerations and rashes in the patient was prevented.

Diagnosis: Mother's lack of knowledge about the diagnosis and treatment process of COVID-19.

Purpose: To educate the baby's mother on the diagnosis and treatment process of COVID-19, to improve her compliance with the hospital, and to inform her about the isolation measures.

Nursing Interventions

Planning: Educating parents who give care to their babies is very important both for the baby and for the healthcare personnel. Parents should know what COVID-19 infection is and what isolation measures should be taken. It is important for parents to cooperate with healthcare professionals in terms of the implementation of strict isolation measures. This cooperation not only facilitates compliance with treatments but also minimizes the risk of infection transmission.

Intervention and Evaluation: The mother was told why her baby was hospitalized, and she was informed about the rules to be obeyed in the service. She was also told that her baby would be isolated and that neither would she be allowed to leave the room nor would visitors be allowed into the room. The mother was asked that she should air the room and that she and the baby should wear the surgical mask just before the medical staff entered the room. She was also told that she should stay away from the healthcare staff (social distancing) while the baby underwent the interventions and that if she had to call out to the staff, she should call out to the staff without leaving the room. She was informed about the importance of HFNC therapy her baby received and that the nasal cannula should not be removed. She was also told that she should wash her hands frequently owing to the infection risk and was informed about the importance of providing frequent oral care to the baby and cleaning his bottom frequently.[6] The mother's lack of knowledge was improved. It was observed that the mother and her baby wore masks during all the interventions performed in the patient room and that she adhered to hand hygiene protocols.

Diagnosis: The mother difficulty in communicating due to social isolation.

Diagnostic Characteristics: Having been diagnosed with contagious COVID-19.

Purpose: Enabling the mother to express the loss of her strength and social support resources.

Nursing Interventions

Planning: An infectious disease necessitates the isolation of the patient and his or her parent. The fact that patients' relatives are prohibited from entering and leaving the service is stressful for the family. Supporting the caregiver and patient's communication with other members of the family during the isolation process is important. Appropriate technologies such as video calling and teleconferencing can be used as communication support.[19]

Intervention and Evaluation: The mother was informed about the reasons for the isolation, and she was encouraged to share her thoughts with the healthcare personnel and ask them questions. She was also told that isolation measures would continue even if the result of the PCR test was negative. The reasons and importance of these isolations were discussed with the mother, her feedback was obtained, and a suitable environment was provided for her to express herself. She was also told that patients could video chat with the other members of the family because no visitors were allowed to the service. The necessary information and information about the course of the disease were provided to the patient's relatives by telephone. At this stage, technology (telephone-video chat, computer) was used. Because the mother was able to communicate with her family, her compliance with visitor restriction increased. It was observed that her anxiety decreased.

Diagnosis: Parents' experience of anxiety

Diagnostic Characteristics: Enabling the parents to verbally express their inability to adapt to this new situation, which emerged owing to the acute diagnosis of COVID-19, and express their fears of losing their babies

Purpose: To minimize parents' anxiety levels.

Nursing Interventions

Planning: Hospitalization due to the COVID-19 outbreak causes anxiety and fear in the patients and their parents. Strict isolation measures cause stress to the family. The parents should be informed about the treatments to be performed and the treatment process.[20]

Intervention and Evaluation: The mother's concerns about her baby's condition were listened to, and her questions were answered appropriately. She was informed about the treatments and the treatment process. The mother's adaption to the hospital, the treatment (HFNC therapy), and other routines was ensured over time. She was told that her being away from the other members of the family was a temporary process, and her concerns were resolved.

Discussion

In this case report, the problems that should be addressed in the nursing care of baby M who received HFNC therapy owing to the diagnosis of COVID-19 and the nursing interventions aimed at solving such problems were discussed on the basis of pertinent literature.

There are no adequate data yet on why COVID-19 infection is less common in children or why severe cases of COVID-19 are less common in children.[11] Owing to HFNC therapy and COVID-19, healthcare professionals are included in the high-risk group. The most severe risk in patients with a definite diagnosis of COVID-19 is the infection transmission risk.[22] Direct contact with the patient, contact with the materials that the patient has come in contact with, and contact with the patient's parents are the leading ways of cross contamination. Negative pressure chambers are an important part of controlling the spread of infectious diseases in hospitals. To prevent the risk of transmission, patients diagnosed with COVID-19 should be followed up in negative pressure rooms.[23] In our case, isolation was provided only in single rooms owing to inadequate clinical conditions. To minimize the risk of infection transmission during HFNC therapy, surgical mask was worn on the patient during drug administration performed with a nasal cannula and nebulizer. Unnecessary aspiration was avoided. Some guidelines recommend that the administration of aerosol drugs through nebulizers should be limited to reduce the risk of infection.[24] Switching from nebulizers to metered-dose inhalers is preferred. Nebulizers are preferred only if the patient does not respond to the treatment with a metered-dose inhaler.[25] In our case, the desired treatment response was not obtained with a metered-dose inhaler; therefore, the treatment was performed with a nebulizer. Because the patient benefited from HFNC therapy, he did not need mechanical ventilation support. He was provided with IV fluid support to establish fluid-electrolyte balance. The General Directorate of Public Health published the "Infection Control and Isolation Guidelines" on June 1, 2020. In this guideline, the health personnel who would come into contact with patients with COVID-19 at a distance <1 meter are recommended to wear an N95 or FFP2 mask and face shield and to use alcohol-based hand antiseptic. In cases when contacts are intense, health personnel are also recommended to wear equipment such as coveralls and bonnets.[26] Because our case received aerosol therapy and underwent aspiration when necessary, health personnel took precautions by wearing high-level protective equipment. To protect themselves from getting infected, the healthcare personnel wore PPE while providing care and treatment. Nurses are trained on using protective equipment in infection control, and they are at the forefront in this regard.[27] Access to the patient room was restricted to reduce infection spread. The interventions to be performed were planned in accordance with the treatment hours. The mother was given information about what the alarms of the devices in the patient room mean. She was also taught how to measure body temperature. Such procedures reduced frequent access to the patient's room. To minimize the healthcare professionals' exposure to the virus, nurses entered the rooms alone and one after another. Social isolation brought about anxiety. Establishing effective communication with

patients relieves anxiety.[28,29] To enable the mother to cope with anxiety, she was acquainted with technology. The phone calls and video calls made by the mother with her relatives were highly motivational. Likewise, healthcare professionals minimized the risk of transmission by communicating with patients' relatives using technology.

Difficulties Faced in the Provision of Healthcare

The clinic's lack of a nurse-call system made the treatment and care process difficult. In addition, the uncertainty of the disease process caused both the healthcare professionals and the mother to suffer anxiety and fear, which made compliance with treatment difficult.

Conclusion

The course of COVID-19 infection varies from person to person, and the lack of a drug whose effect on the infection is not definite necessitates symptom management in treatment. Therefore, nurses play an important role in the care and treatment of patients with COVID-19. In this case report, the importance of appropriate nursing care in ensuring the effectiveness of HFNC therapy was emphasized. As in our case, pediatric nurses' cooperation with parents and sharing of responsibility with them reduce the risk of infection transmission, which may contribute to the shortening of the treatment period. In addition, the importance of parents' use of technology for the provision of care and the establishment of communication during the pandemic process became obvious. In this process, not only patients' needs but also their parents' needs should be taken into account.

Informed Consent: Informed consent was obtained from case M.'s mother F.N. who participated in the study.

Peer-review: Externally peer-reviewed.

Author Contributions: Concept – S.K., A.A.; Design – A.A., S.K.; Supervision – S.K., A.A.; Literature Search – S.K., A.A.; Writing Manuscript – S.K., A.A.; Critical Review – A.A., S.K.

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