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Integrated Predictive Nursing Care for a Case of Imported Severe Malignant Malaria with Spontaneous Splenic Rupture

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Abstract: A case of imported severe falciparum malaria with spontaneous splenic rupture was reported in this paper. The patient, an African migrant worker, developed hemolytic anemia, sepsis, thrombocytopenia, coagulation dysfunction, liver failure, renal insufficiency, electrolyte disturbance and other clinical manifestations after returning to the local area. Plasmodium falciparum was found by peripheral blood smearscopy and was diagnosed as severe falciparum malaria. After standardized anti-malaria treatment, plasma exchange + cytokine adsorption therapy, the establishment of "forewarning–forewarning–prevention–emergency" predictive nursing management model, the establishment of an integrated nursing team, the division of medical care is clear, professional knowledge is complementary, after three months of regular follow-up, the patient has no malaria recurrence, no refire, the function of all organs returned to normal.

Keywords: Severe falciparum malaria; Imported malaria; Splenorrhagia; Integration of health care; Predictive care; Plasma exchange; Cytokine adsorption

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1. Introduction

Malaria is a parasitic disease transmitted by the bites of Anopheles mosquitoes, mainly caused by the human malaria parasite [1]. It is a significant global public health issue, especially with a higher incidence rate in tropical and subtropical regions [2]. Since 2017, China has achieved zero reports of local malaria cases. However, with the increasingly frequent international exchanges along the Belt and Road Initiative, imported malaria cases continue to rise [3]. Imported malaria usually refers to symptomatic cases with a travel history to malaria-endemic areas 1 to 3 months before the onset of the disease and with clear evidence of infection from abroad [4]. Among them, severe malignant malaria is caused by Plasmodium falciparum. It has an acute onset, rapid progression, complex clinical manifestations, and is prone to serious complications [5]. Splenomegaly is a common sign of malaria infection, but spontaneous splenic rupture is a rare and life-threatening complication [6]. The etiology of severe malignant malaria

combined with spontaneous splenic rupture is complex. It often has no clear history of trauma, which can easily lead to missed diagnosis, misdiagnosis, delayed treatment and even endanger life. Therefore, early identification, diagnosis and intervention are crucial for improving the prognosis of patients [7].

The integrated medical and nursing model, through multi-disciplinary collaboration (covering medical treatment, nursing, rehabilitation, nutrition, psychology, etc.), provides patients with all-round and full-process high-quality services, which is conducive to promoting disease recovery [8]. The construction of a predictive nursing management model of "foresight–early warning–prevention–emergency response" aims to promptly identify potential nursing risks, formulate targeted prevention and control measures, demonstrate forward-looking thinking, minimize related risks to the greatest extent, thereby improving the treatment effect of severe malignant malaria with spontaneous splenic rupture, enhancing the medical experience of patients, and strengthening the trust between nurses and patients [9].

This article reports a case of a patient with imported severe malignant malaria complicated with spontaneous splenic rupture. On the basis of plasma exchange combined with cytokine adsorption therapy, integrated predictive nursing care was implemented, achieving good therapeutic effects.

2. Clinical data

2.1. General information

The patient is a 38-year-old male. A week ago, he developed a fever without any cause, with the highest body temperature reaching 40 °C. The fever was irregular, accompanied by chills and shivering, as well as dizziness. In the past two days, he has experienced diarrhea, accompanied by nausea and vomiting of gastric contents several times. He came to the hospital on his own and was admitted to our department in the emergency department with a fever. Since the onset of the disease, the patient's spirit and appetite have been average, sleep has been poor, diarrhea has occurred (on average once every 1 to 2 hours), urination has been normal, physical strength has declined, and there has been no significant change in weight. The patient has a long history of working in Africa and denies any other medical history. Abdominal CT examination from 2008 to 2011 indicated splenic hematoma (see **Figure 1A** and **1B**). On August 13, 2020, the blood *Plasmodium* test was positive. Both microscopic examination and colloidal gold test were positive (malignant malaria). Bone marrow puncture results on August 15, 2025:32 phagocytic tissue cells per piece, with the phagocytic substances being red blood cells, white blood cells, and platelets. *Plasmodium* (see **Figure 2**). Chest CT of 08-17 shows splenic hematoma (see **Figure 3**). Liver color Doppler ultrasound on 08-20 indicated abnormal echoes in the spleen. MRI of the liver, gallbladder and spleen on 08-25 suggested subacute hematoma of the spleen (see **Figure 4**)

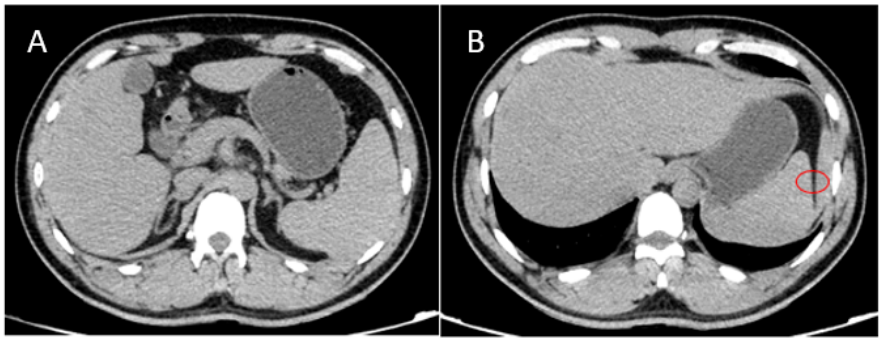

Figure 1. A. Splenomegaly. B. Suspected splenic hemorrhage.

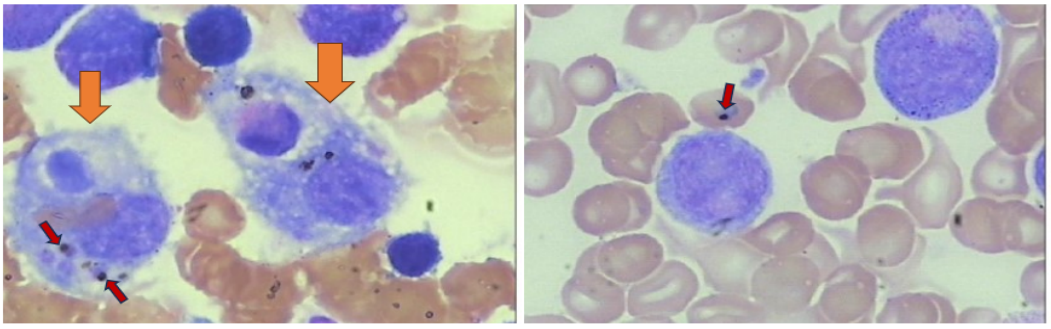

Figure 2. Bone marrow image: 32 phagocytic tissue cells per plate, with red blood cells, white blood cells and platelets as phagocytes (indicated by orange arrows); *Plasmodium* (red arrow).

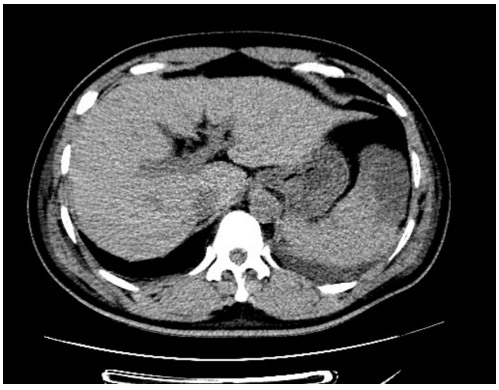

Figure 3. Splenic hematoma on chest CT.

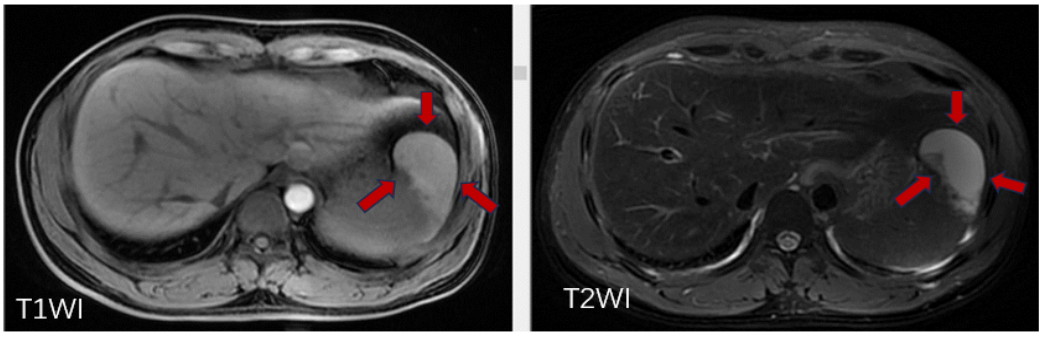

Figure 4. Enhanced MRI: The spleen is slightly enlarged, and cystic abnormal signals are shown in the spleen: hematoma? Subacute stage? (Indicated by the red arrow), both T1WI and T2WI show high signals. A low-signal septal image on T2WI can be seen within the lesion, with the lesion range approximately 6.9 cm × 3.8 cm × 3.2 cm. DWI shows unevenly high signals, and there are a few fluid signal shadows around the spleen.

2.2. Inspection report

The diagnostic results shown in **Table 1** include abnormal laboratory values and imaging features consistent with severe malaria and splenic involvement.

Table 1. Diagnosis report

Check the category	Inspection item	Inspection result
Laboratory inspection	Blood routine examination	WBC 4.80 g/L, NE 3.97 g/L, RBC 5.08 g/L, Hb 161 g/l, PLT 11 g/L
	Liver and kidney functions, blood lipids	WBC 4.80 g/L, NE 3.97 g/L, RBC 5.08 g/L, Hb 161 g/L, PLT 31 g/L
	Coagulation function	PT 16.9 s, PTA 55%, D-Dimer 7.13 mg/L
	Inflammatory indicators	PCT 3.55 ng/mL; IL-6 123.1 pg/mL; hs-CRP 106.36 mg/L; ferroprotein 8964 ng/mL
	Screening for infectious diseases	Hepatitis B, hepatitis C, HIV and syphilis are all negative
Imagological examination	Chest CT	1. A small amount of accumulative inflammation in the lower lobe of the left lung. 2. Scattered small nodules and hard nodules in both lungs have slightly increased compared to before.
	CT full abdominal CT	Inflammation of the proximal jejunum is possible. 2. Prostate calcification foci; 3. Enlarged spleen.
	Brain CT	Calcification foci or foreign bodies on the frontal scalp.

2.3. Treatment method

Antimalarial treatment (artesunate for injection + dihydroartemisinin piperquine tablets); Anti-inflammatory Protect the liver and reduce jaundice. Protect the stomach Increase platelet count; Plasma exchange + cytokine adsorption therapy; Splenic artery embolization therapy (PSE).

2.4. Therapeutic effect

2.4.1. Microscopic examination of Plasmodium in blood

All three tests on August 15, 20, 25, 19 and 23 were negative

2.4.2. All indicators improved after treatment

From **Table 2**, it can be seen that after undergoing plasma exchange combined with cytokine adsorption therapy, the patient's indicators such as total bilirubin (TBIL), C-reactive protein (hs-CRP), and interleukin-6 (IL-6) showed a significant decreasing trend, while platelet counts (PLT) gradually recovered, indicating the effectiveness of the treatment.

Table 2. Improving of the indicators post treatment

Date	WBC (g/L)	Hb (g/L)	PLT (g/L)	TBIL (μmol/L)	ferritin (ng/mL)	Cr (μmol/L)	PCT (ng/mL)	IL-6 (pg/mL)	hs-CRP (mg/L)
8/11	4.8	161	31	120.69	-	127.2	3.55	123.1	106.36
8/12	4.93	142	10	140	8964	-	-	-	-
8/13	7.22	128	11	166.78	-	-	-	-	-
8/14	5.11	135	22	249.89	10928	89	-	-	64.35
8/15	7.16	115	41	182.93	-	58.9	1.009	11.3	65.1
8/16	8.11	107	37	88.35	4114	-	1.8	17.76	31.9
8/17	4.75	105	64	89.72	-	-	0.364	39.8	30.38
8/18	3.89	100	68	59.79	1062.1	-	0.57	30.01	-

Table 2 (Continued)

Date	WBC (g/L)	Hb (g/L)	PLT (g/L)	TBIL (μmol/L)	ferritin (ng/mL)	Cr (μmol/L)	PCT (ng/mL)	IL-6 (pg/mL)	hs-CRP (mg/L)
8/19	3.19	92	106	52.13	1585	57.45	0.243	14.5	33.55
8/23	5.09	94	172	31.42	1139	66.07	0.137	12	7.01
8/26	3.79	112	149	-	-	-	-	-	-
10/9	5.02	144	193	16.78	232.8	-	-	-	-

2.4.3. Liver ultrasound follow-up

Re-examination of liver color Doppler ultrasound indicated: No localized abnormal echoes were found.

2.4.4. Changes in total bilirubin, C-reactive protein and platelet count during the treatment process

Figure 5 clearly demonstrates the changes in total bilirubin, C-reactive protein, and platelet count during the treatment process, highlighting the positive response to therapy.

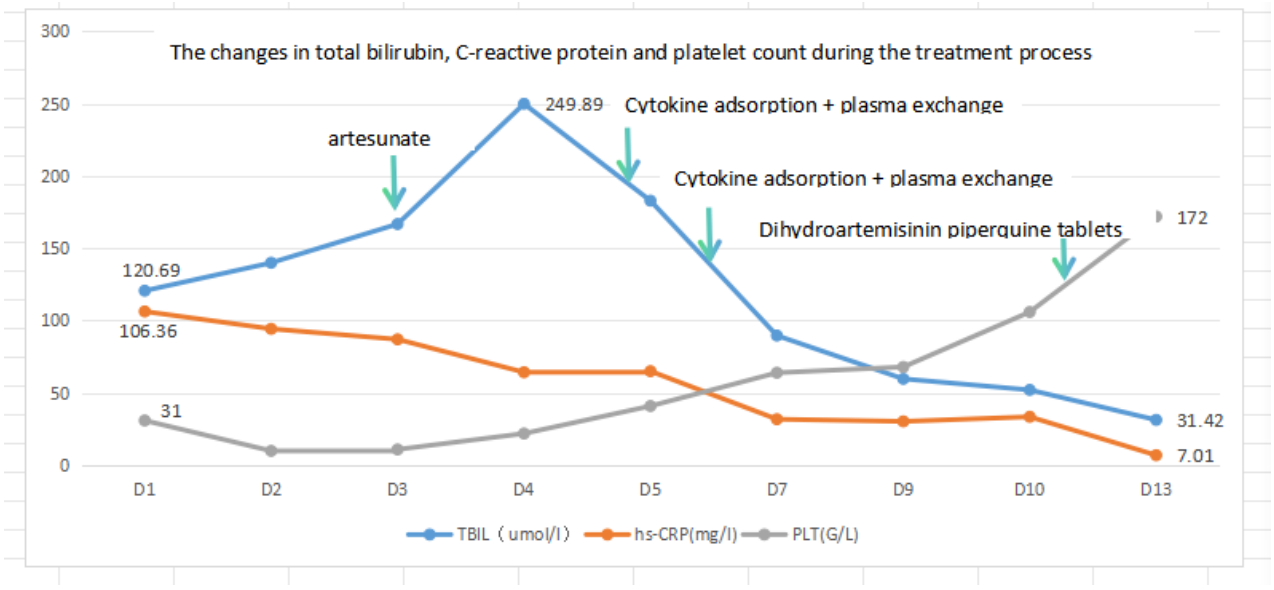

Figure 5. Changes of total bilirubin, C-reactive protein and platelet count during the treatment process.

2.5. Integrated medical and nursing predictive care

The integrated medical and nursing team is composed of one chief physician, one attending physician, one infection control physician, one head nurse, one responsible nurse, one psychotherapist and one nutritionist. The group, through multidisciplinary collaboration, jointly assesses the patient's condition and potential risks, and formulates practical and feasible care plans. Each member has clear responsibilities and works in close cooperation: The psychotherapist focuses on providing psychological counseling to the patient. Nutritionists provide personalized dietary guidance. Infection control physicians regularly organize infection prevention and control training and supervise the implementation of measures to prevent cross-infection. The head nurse serves as the leader of the nursing team. Every day, she feeds back the progress in the team work group and promptly analyzes, continuously tracks and effectively improves the existing problems. The team adheres to the

work focus of "ensuring safety, enhancing quality, improving service and increasing efficiency", and strives to build a predictive nursing management model of "prediction–early warning–prevention–emergency response", continuously deepening the connotation of clinical nursing and expanding the thickness of service, so as to achieve the goal of better nursing and more efficient service.

2.5.1. Training of predictive thinking

Through the training of predictive thinking, the awareness and ability of predictive nursing can be enhanced, potential nursing risks can be accurately and quickly identified, and relevant risk factors and expected clinical challenges can be determined.

2.5.2. Organize and carry out specialized training

Organize the study of knowledge related to malignant malaria and spontaneous splenic rupture, and cultivate the predictive thinking ability of members of the integrated medical and nursing care team.

2.5.3. Comprehensive assessment of the patient's condition

Based on evidence-based evidence, scientific and professional assessment tools are adopted, combining qualitative and quantitative predictions to conduct multi-angle, all-round and accurate evaluations of the patient. Through comprehensive analysis and precise observation of the patient's condition, changes in the patient's condition and nursing risks are predicted.

2.5.4. Accurately identify nursing risks

Clearly identify the risk points and weak points existing in the care of patients with severe malignant malaria and spontaneous splenic rupture, analyze the predictable nursing risk factors and formulate response measures, and form a standardized predictive nursing risk management operation manual. Such as emergency treatment procedures for bleeding, standard operating procedures for septic shock, key points for preventing black urine, etc.

2.5.5. Early warning

While implementing measures to reduce nursing risks, early warnings should be issued through visual and information-based means to alert medical staff and ensure they are always ready for emergencies.

2.5.6. Sorting out risk thresholds

For common complications that malaria can cause, such as black urine fever, intracranial hypertension, nephritis, and nephrotic syndrome, a warning threshold manual should be formulated one by one, including the names of complications, life-threatening symptoms, signs, indicators, and the content of nurses' rapid emergency response, to identify them as early as possible and activate the warning immediately [10].

2.5.7. Innovate visualized risk early warning

In light of the actual needs and risk characteristics of the patients, single room admission is implemented, and prominent insect-borne transmission risk signs are made and posted at the door of the ward and the patient's bedside to clearly remind medical staff and family members to implement isolation and protection. At the same time, record popular science audio and video about the transmission routes and prevention knowledge of malaria.

The content is vivid and easy to understand, enhancing the disease awareness level of patients and their families. In addition, strictly enforce the accompanying care management system, strengthen mosquito prevention and control measures, and comprehensively reduce the risk of infection.

2.5.8. Identify the clinical signs of spontaneous splenic rupture

Spontaneous splenic rupture is a fatal complication of malignant malaria. Although it is rare, if it is not identified and treated early, it will seriously threaten the patient's life. This disease is usually characterized by sudden abdominal pain, mainly persistent dull or severe pain in the upper left abdomen, which may be accompanied by symptoms such as abdominal distension, nausea, vomiting, cold sweats or fainting. The onset of the disease often has no obvious cause, or only occurs after actions such as coughing, sneezing, vomiting, and defecation. Early spontaneous splenic rupture patients often have atypical abdominal signs, usually only mild tenderness in the upper left abdomen, without rebound tenderness or muscle tension. If abdominal distension occurs and mobile dullness on percussion is positive, it indicates that the disease is progressing. There has been a large amount of intra-abdominal hemorrhage, which can rapidly develop into shock within a few hours. Laboratory and imaging examinations are crucial in early diagnosis: dynamic monitoring of hemoglobin and hematocrit helps assess blood loss. B-ultrasound is a commonly used imaging examination method in clinical practice due to its rapidity, convenience and strong repeatability [11]. The integrated medical and nursing team used the shock index (pulse rate/systolic blood pressure) to assess the degree of shock [12]. A shock index of ≤ 0.5 indicated no shock and normal blood volume; An index of 1 indicates mild shock, with a blood loss of approximately 800 to 1200 mL, accounting for 20% to 30% of the total blood volume. An index greater than 1 indicates shock, among which a value greater than 1.5 is considered severe shock, with blood loss ranging from 1200 to 2000 mL, accounting for 30% to 50% of the total blood volume. An index greater than 2 indicates severe shock, with blood loss exceeding 2000 mL, accounting for more than 50% of the total blood volume. The shock index of this patient was 1.26. The medical team promptly established two venous access routes, followed the doctor's advice to quickly replenish fluid to restore blood volume, assisted the patient in taking the supine fovea position, and actively completed the preoperative preparations. Eventually, splenic artery embolization (PSE) was performed in a timely manner.

2.5.9. Prevention

For identified potential nursing risks, formulate targeted preventive nursing measures to reduce the incidence of risks.

(1) Prevention of bleeding

The platelet count of the patient in this case dropped to a minimum of 1×10^{10} g/L, and plasma infusion and platelet support therapy have been given. To prevent bleeding, during the nursing process, the patient's vital signs and coagulation function were closely monitored, including changes in prothrombin time, platelet count, hemoglobin and other indicators. At the same time, pay close attention to whether there are any signs of local or systemic bleeding, such as petechiae and ecchymosis at the puncture site, gum bleeding, nosebleeds, hematemesis, hematochezia, etc. In daily life care, patients should be guided to avoid bumps and knocks, not to pick their noses with their hands, not to use toothpicks to pick their teeth, and to use soft-bristled toothbrushes to brush their teeth. Strengthen the dynamic assessment of heart rate, blood pressure, blood oxygen saturation, state of consciousness, urine output and clinical manifestations. Once any abnormality occurs, take effective intervention measures immediately to minimize the existing

and potential bleeding risks of patients to the greatest extent [13].

(2) Prevention of common complications of cytokine adsorption and plasma exchange

Plasma was separated using a Fresenius Kabi COM.TEC centrifugal blood cell separator and then adsorbed by a cytokine adsorption column (CA280, Jianfan Biotechnology Group Co., LTD., China), with the right internal jugular vein as the vascular access. In accordance with the requirements of the Expert Consensus on the Clinical Application of Artificial Liver Blood Purification Technology (2022 Edition), the tubing and adsorption column should be thoroughly pre-flushed, with low-molecular-weight heparin anticoagulation [14]. Before each treatment, 5 mg of dexamethasone should be intravenously injected to prevent allergic reactions to the adsorption column and tubing. To prevent hypotension, 400 mL of isoplasma was intravenously infused peripheral before the end of cytokine adsorption to maintain blood volume balance. Before sequential plasma exchange therapy, 25 mg of promethazine was intramuscularly injected and 5 mg of dexamethasone was intravenously injected to prevent plasma hypersensitivity. Continuous intravenous infusion of 10% calcium gluconate prevents hypocalcemia; During the operation, electrocardiogram monitoring and oxygen inhalation were performed throughout the process. The blood flow rate was 50 to 60 mL/min, the plasma separation rate was 25 to 33 mL/min, the plasma exchange volume was 1600 to 2000 mL (fresh frozen plasma), and the treatment duration was 2 to 3 hours. During both treatments, the patient had no adverse reactions.

(3) Prevention of black urine fever

Reduce unnecessary movement to avoid inducing heart failure. Ensure a daily fluid intake of 3000 to 4000 mL and a daily urine output of ≥ 1500 mL. In cases of acute renal failure such as anuria or oliguria, treat it as acute renal failure. Accurately record the 24-hour fluid intake and output.

(4) Prevention of complications of splenic artery embolization (PSE)

Post-embolization syndrome: Almost all patients after partial splenic embolization have transient fever, left upper abdominal pain and loss of appetite [15]. Fever is generally around 38℃, with a few cases reaching above 39℃, lasting for 1 to 3 weeks. There is moderate abdominal pain, and symptomatic treatment is sufficient. Bronchopneumonia and pleural effusion are more common on the left side, which is related to the pain after splenic embolization restricting the left respiratory movement and reactive pleurisy. It can be relieved through anti-infection and symptomatic treatment. Splenic abscess is caused by bacterial infection. Controlling the embolization range, strict aseptic operation and the application of perioperative prophylactic antibiotics can effectively reduce the incidence of splenic abscess. Once splenic abscess occurs, active anti-infection treatment should be carried out. Chen Jing and other scholars have studied the safety and effectiveness of intraluminal injection of 10% sodium chloride in the treatment of splenic abscess after PSE [16].

(5) Prevention of malnutrition

Patients with malignant malaria have persistent high fever, high energy consumption and poor appetite. Adequate calorie supply is of great significance. This patient has symptoms of nausea, vomiting and diarrhea. They have been given parenteral nutrition preparations such as fat emulsion and amino acids as prescribed by the doctor. During the infusion process, be vigilant about the occurrence of phlebitis [17]. After the treatment to regulate the intestinal flora, the diarrhea improved and the appetite improved. The nutritionist formulated a personalized diet plan and recipe for the patient. The dietary principle was light and refreshing, and it was advisable to consume easily digestible and absorbable high-protein and high-

vitamin foods.

(6) Prevention of negative emotions

Psychotherapists provide targeted psychological intervention based on the patient's personality traits and adverse psychological triggers to minimize the impact of negative emotions on the treatment outcome to the greatest extent. Adopt reasonable emotive therapy to transform patients' wrong beliefs and cognition, solve their emotional and behavioral problems, and maintain a positive attitude and belief as much as possible to correctly deal with the disease [18]. Select appropriate psychological counseling techniques such as mindfulness meditation training, aromatherapy, music therapy, etc.

(7) Prevention of adverse reactions of antimalarial drugs

Artesunate for injection needs to be properly and thoroughly dissolved. Before use, add 0.6ml of the attached 5% sodium bicarbonate injection, shake for 2 minutes until completely dissolved, then add 5.4ml of 5% glucose injection or glucose-sodium chloride injection for dilution, ensuring that each 1ml of the solution contains 10mg of artesunate, and inject slowly intravenously. Allergic reactions: Be vigilant about allergic reactions such as anaphylactic shock, urticaria, rash and pruritus. Delayed hemolysis (PADH) occurs at least 7 days after treatment and can last for several weeks. It is recommended to closely monitor the signs of hemolytic anemia within 4 weeks after treatment. Severe cases may require blood transfusion. If necessary, direct antiglobulin tests can be conducted to determine whether glucocorticoid treatment is needed.

(8) Disease prevention

Mosquito prevention and control, avoiding mosquito bites, is the most important means of preventing malaria. When traveling to malaria-endemic areas, one should take personal protective measures, such as wearing long-sleeved shirts and long pants, using mosquito nets and other physical protective measures, using repellents, mosquito coils to repel mosquitoes or taking preventive drugs and other chemical protective measures, and reduce or avoid going outdoors during the peak mosquito activity periods of dusk and night. If symptoms such as chills, fever, sweating, diarrhea, and joint pain occur within one month after returning from a short-term trip to an epidemic area or within two years after returning from a long-term stay in an epidemic area, medical attention should be sought promptly. When entering the country and seeking medical treatment, one should proactively inform the doctor of their travel history to enhance the timeliness of diagnosis and reduce misdiagnosis and missed diagnosis. After being diagnosed with malaria, one should take antimalarial drugs in full and in the prescribed dosage as directed by a doctor to prevent recurrence and drug resistance. Emergency response: Enhance the emergency handling capabilities and teamwork levels of the members of the integrated medical and nursing care team, quickly initiate emergency response procedures, and smoothly complete remedial measures.

2.5.10. Medical and nursing assistance in emergency drills

Regularly carry out integrated medical and nursing emergency drills and training for spontaneous splenic rupture, refine the process measures for each link, assign specific responsibilities to individuals, identify loopholes and shortcomings, continuously optimize emergency plans, and enhance practical combat capabilities.

(1) Develop various potential risk emergency procedures. Members of the integrated medical and nursing care team used the brainstorming method to develop various potential risk emergency procedures based on the actual condition of the patient, such as hemorrhagic shock and black urine fever, requiring everyone to be

aware of the risks and be capable of responding to emergencies.

(2) Diversified interactive extended services. Reduce the incidence of complications. Establish a diversified interactive wechat group to regularly push disease health care knowledge through text, voice, pictures, videos, etc. Follow up at frequencies of 2 weeks, 4 weeks, 8 weeks, and 12 weeks. Group members build a guiding and cooperative relationship with the community hospital where the patient is located, forming a positive interaction [19]. Ensure the effective continuation and operation of the care model, and integrate each piece of feedback information and patient suggestions to adjust the home management plan.

3. Summary

The patient's condition was extremely critical. The successful emergency treatment was attributed to the following three aspects.

3.1. Collaborative role and efficacy of the integrated medical and nursing team

In the integrated medical and nursing team, all members work closely together, both recognize their job responsibilities, divide the work, and strive to achieve the common goal [20]. Medical staff jointly observe the patient's condition, detect potential risks early, and can identify the signs of spontaneous splenic rupture at an early stage. They also pay attention to the patient's subjective feelings and psychological state. Increase the trust between medical staff and patients, and enhance patients' confidence in defeating the disease.

3.2. Advantages and efficacy of the predictive nursing management model

The predictive nursing management model of "foresight–early warning–prevention–emergency response" helps nurses to be well-informed and targeted in their nursing work. Through pre-assessment and analysis, nurses can promptly identify and address potential issues, thereby reducing the incidence of nursing deficiencies. By closely observing and thoroughly understanding the dynamic changes in patients' conditions, they can make patients feel the psychological need to be respected and cared for. Predictive thinking and the ability to handle emergencies on the spot help nurses make correct judgments and actions quickly in emergency situations. Ensure the medical safety of patients [21].

3.3. Technical characteristics and clinical effectiveness of the CA280 cytokine adsorption column

CA280 cytokine adsorption column with nano-scale three-dimensional pore size adjustment technology, specifically adsorbs cytokines. It can be precisely designed based on the molecular structure and size of cytokines, and selectively removes cytokines such as IL-6 and TNF-α. At the same time, hydrophilic molecule graft coating was utilized to comprehensively optimize the hydrophilicity of the resin while maintaining its effectiveness, enhance blood compatibility, and protect blood cells and beneficial components. After two sequential plasma exchange sessions of cytokine adsorption in this patient, total bilirubin, ferritin, interleukin, IL-6, and C-reactive protein all decreased significantly. This patient was complicated with liver failure and severe infection. The effect is remarkable.

In conclusion, the causes of severe malignant malaria with spontaneous splenic rupture are diverse, the onset is insidious, and the mortality rate is extremely high [22]. The development of new cytokine adsorption technology

and the application of the integrated predictive nursing management model of medical care and nursing can significantly improve the prognosis of patients and enhance their quality of life. However, due to the limited number of cases, some related technical specifications are still unclear. How to build a scientific, systematic and complete prevention and treatment system as soon as possible poses new challenges for future development.

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Disclosure statement

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References

[1] National Center for Infectious Diseases Writing Group, Li L, Zhang W, et al., 2022, Guidelines for the Diagnosis and Treatment of Malaria. Chinese Journal of Parasitology and Parasitic Diseases, 40(4): 419–427.

[2] Wang R, Ma S, Qiu D, et al., 2024, Clinical Application and Effect Evaluation of Nursing Models in Imported Severe Falciparum Malaria. Journal of Jilin Medical College, 45(2): 123–126.

[3] Lin J, Liang Y, Huang Y, et al., 2024, Analysis of Imported Malaria in China from 2011 to 2021. Chinese Port Science and Technology, 6(z1): 55–58.

[4] Luo F, Zhou S, Yuan Y, et al., 2021, Epidemiological Characteristics of Imported Malaria in Chongqing from 2016 to 2019. China Tropical Medicine, 21(1): 74–78.

[5] World Health Organization, 2021, World Malaria Report 2021. Geneva: WHO.

[6] Ribeiro L, Paulo J, Araújo P, et al., 2023, Spontaneous Splenic Rupture Due to Falciparum Malaria Successfully Treated with a Conservative Approach. Parasitology International, 94: 102736.

[7] Chen T, Liu Y, Tian T, et al., 2024, Nursing Study of a Patient with Severe Falciparum Malaria Complicated by Spontaneous Splenic Rupture in a Chinese Level II Hospital in the Democratic Republic of the Congo. Journal of Joint Logistics Military Medicine, 38(9): 802–804.

[8] Pan L, Tan X, Jing X, et al., 2024, Effect of Integrated Medical and Nursing Model on Vertigo Symptoms and Negative Emotions in Patients with Peripheral Vestibular Vertigo. Nursing Research, 38(12): 2213–2217.

[9] Zhao Y, 2024, Application Effect of Predictive Nursing Management Model in the Care of Patients with Acute Left Heart Failure in CCU. Clinical Nursing Research, 33(9): 208–210.

[10] Li Y, Zheng Z, Zhang Y, et al., 2023, Research Progress on Cardiovascular Complications of Malaria. China Journal of Chinese Materia Medica, 48(18): 4902–4907.

[11] Wang X, Shuai Q, Wu Y, et al., 2024, Nursing Care of a Patient with Lymphoma Complicated by Hemophagocytic Syndrome and Spontaneous Splenic Rupture. Chinese Journal of Emergency and Critical Care Nursing, 5(10): 934–936.

[12] Wei Y, Liu H, 2024, Application Effect of Nursing Guided by Shock Index in Patients with Traumatic Liver and Splenic Rupture and Hemorrhage. Chinese Journal of Medical Health, 36(9): 159–162.

[13] Han Y, Gao Y, Liu Y, et al., 2023, Research Progress on the Application of Predictive Nursing Based on Risk Warning Concept in Patients with Acute Upper Gastrointestinal Bleeding. Modern Medicine and Health, 39(19): 3325–3328.

[14] Severe Liver Disease and Artificial Liver Group of the Chinese Society of Hepatology, Bai L, Chen Y, et al., 2022, Expert Consensus on the Clinical Application of Artificial Liver Blood Purification Technology (2022 Edition). Journal of Practical Hepatology, 25(3): 457–468.

[15] Li T, Shi S, 2023, Research Progress on the Management of Post-Embolization Syndrome after Hepatic Artery Chemoembolization. Chinese Clinical Nursing, 15(11): 713–715 + 719.

[16] Chen J, Cao L, Zhang Y, et al., 2023, Clinical Efficacy of 10% Sodium Chloride Intracavitary Injection in the Treatment of Splenic Abscess after Partial Splenic Artery Embolization. Journal of Medical Imaging, 33(10): 1836–1839.

[17] Yao T, Gao Y, Xu Y, et al., 2024, Summary of Best Evidence for the Prevention of Complications in Hospitalized Patients Receiving Parenteral Nutrition Support. Chinese Journal of Nursing, 59(11): 1360–1367.

[18] Chen Y, Chen Y, Tian W, 2023, Effect of Rational Emotive Therapy Combined with Mirtazapine on Patients with Depression. Chinese and Foreign Medical Research, 21(2): 86–89.

[19] Ji F, Wang Q, Zhang C, 2024, Application of a Diversified Interactive Extended Service Model in PICC Catheter Maintenance for Patients with Advanced Tumors. Chinese Medical Innovation, 21(27): 90–94.

[20] Li Q, Gu S, Abula A, et al., 2024, Application of Nursing Intervention Based on the Concept of Medical-Nursing Integration in the Perioperative Period of Patients Undergoing Daytime Laparoscopic Surgery. Chinese Medical Herald, 21(27): 174–178.

[21] Xu Y, Wang W, Li M, 2023, Observation of the Effect of Predictive Nursing Intervention on the Care of Complications in Patients with Nephrotic Syndrome. Minerva Gastroenterology, 69(3): 425–430.

[22] Du Y, Lin Y, Peng K, et al., 2021, A Case Report of ANCA-Associated Vasculitis Complicated by Spontaneous Splenic Rupture. Practical Clinical Journal of Medicine, 18(3): 227–228.