

Causes and nursing countermeasures in pediatric PICC catheter complications

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Abstract: To analyze the complications and nursing countermeasures of PICC (Peripherally Inserted Central Catheter) catheters. using children PICC catheter technique 40 cases, complications were observed, and analyze the original causes, in order to propose a solution. There were 10 cases of catheter blockage, 5 cases of catheter infection, 6 cases of phlebitis, 5 cases of puncture difficulties, 2 cases of poor feeding tube, 2 cases of bleeding puncture site. with the continuous exploration and research of nursing intervention, the production of clinical complications from PICC has been used in children were greatly reduced.

Keywords: Children PICC catheter; complication; causes; counter measure.

INTRODUCTION

Peripherally inserted central catheter referred to PICC, namely by the week Vein central venous catheter, which has a longer retention time, reduce children each Piercing pain, quick and easy operation nurses, and does not limit daily activities of children. It can effectively protect children vessels, and reduce various drugs on Adverse reactions in children with blood vessels. PICC has been widely used in clinical practice. So PICC provides a painless infusion channel (Gu JF *et al.*, 2012). However, With PICC Widely used in clinical technology, PICC complications arising rapidly followed with new questions and problems. In order to minimize the occurrence of complications, central venous line placement method and infusion techniques should be researched more in-depth. In addition, the complications of nursing interventions should also be strengthened appropriately. So that complications can be foreseen and adequate preventive measures (Qing GB *et al.*, 2013).

CLINICAL DATA AND METHODS

Clinical data

Selected 40 cases of children admitted to Pediatric Nursing Department of the First Affiliated Hospital of Zhengzhou University, Zhengzhou, China from August 2012 to August 2014 period, including 26 males and 14 females, aged 2 years old to 13 years old, PICC tube indwelling time of two months to one year. Mention hospital name, city, country and also department name

MATERIALS AND METHODS

Selected PICC tube made from US BD produced by PICC Puncture kits, model 3Fr, applicator 10 × 12cm. Choose 8 cases of children of left venous catheterization, 32 cases of children of the right cubital vein catheterization.

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RESULTS

Catheter blockage has occurred in 10 cases; there are 5 cases of catheter infection, 6 cases of phlebitis, 5 cases of puncture difficulties, 2 cases of poor feeding tube, 2 cases of bleeding puncture site.

The cause and nursing countermeasures of resulting complications

The Reason of PICC complications are: Catheter blockage, catheter infection, quiet Vein inflammation, puncture difficulties, poor feeding tube, puncture site bleeding and so on.

Catheter blockage and infection caused complications

Catheter blockage

In a variety of complications, the incidence of catheter blockage caused complications is the highest. The longer time of the catheter, the higher incidence of complications. Reasons: a sealed tube and flushing pipe method is not correct are the mainly reasons, or catheter tube due to the emergence of a regular punch discounts, distortions. In addition, the formation of blood clots may also cause conduit clogging. Nursing Strategy: When blockage occurs, firstly, detailed examine of the external factors. See whether exist the phenomenon of catheter prolapse and discount; the existence of thrombosis and drug precipitation; Then checked correction of sealed tube, red tube; finally, checked whether you have entered the higher concentration of the liquid. When you use the method to plug the catheter thrombolysis treatment: firstly, tee End connectivity and an empty syringe through using of the PICC. Then close urokinase end, Withdrawing with an empty syringe to make a negative pressure within the lumen PICC; secondly, close the empty syringe end, connect urokinase end, suction urokinase into the catheter through negative Action pressure of the inner lumen of PICC; thirdly, after thrombolysis 30min, Withdrawing the catheter with a

syringe containing 0.9% NaCl solution. Observe whether it becomes clear, if one cannot make it thrombolysis smooth, it needs to be repeated several times.

In addition, inject 5000 u/ml urokinase in patients in the catheter lumen monthly. Use 0.9% NaCl solution for catheter flushing after 30 min. After use TPN or PICC transfusion therapy, use NaCl solution to rinse luminal thoroughly and timely. When patients stop the infusion, flush the lumen 1 time at least every 24 h, in order to avoid clogging the catheter appears. After washing is completed, pay attention to its sealed tube processing.

Catheter infection

PICC postoperative catheter infection, patients can easily cause serious complications of secondary infection and sepsis. most of the venous catheter infection secondary to central venous catheter, improper maintenance of aseptic catheter after patients go home with catheter is the main cause. Nursing Strategy: details inform parents of children that a tube length of stay in the body, the replacement operation method and time dressings and sealed tube of PICC before discharge pipe with PICC. In addition, asked the families of the children to keep the skin clean and dry, change dressings timely and correctly. go to the hospital to replace the applicator every week; go to the hospital to red tube regularly. Limb cannot bend over and do intense exercise. Guide the children do not play with the exposed part of the catheter, and inform parents should observed in children with puncture point regularly. Once discover unusual, go the hospital to deal with in time.

Phlebitis resulting vein complications

Vein inflammation is also one of the main reasons produced complications: Mild: Children infusion site redness, or not accompanied by pain. Moderate: Children infusion site pain, and accompanied by edema and redness, cords form, palpable cord-like vein. severe: Children infusion site pain, redness and swelling associated with the formation of cords, palpable cord-like vein, the length is greater than 2.5cm, which have pus out. Its complications is divided into the following two:

Phlebitis Cause by puncture site infection

Reason: Bacteria on the catheter at the skin relocate to the outer chamber through subcutaneously tunnel tube, causing puncture site infection. Nursing Strategy: make a thorough decontamination to the children of the local skin before puncture. And strictly follow aseptic practices, the infusion device should be replaced every day; If puncture is successful, replace dressing for the children in the first 24h. In intermittent treatment and the treatment period, replace dressing weekly. When change dressings, you should observe whether there is the phenomenon of bleeding, pain, swelling and secretions in the local availability of children. If children with systemic infection

and unexplained, you should check if there catheter infection phenomenon. Remove the catheter, cut catheter tip for bacterial culture, relax and raise the limb at the same time. Give water bottle with hirudoid cream coated to the children with mild hot, give 25% magnesium sulfate solution with local moist heat hirudoid cream coated to the children with moderate and severe.

Mechanical phlebitis

Reason: children's vascular diameter is relatively small; the blood vessel wall development is not perfect; if affected by the entry and floating hose, the wall will be subject to certain stimuli, causing blood vessels spasm and caliber narrow. In tube feeding process, excessive force causing the blood vessel wall intima damage. Wear wrong and more, penetration at the same place will cause the blood vessel wall inflammation. Nursing Strategy: When children admitted to hospital, the responsibility of nurses adequately assess children with vascular conditions. Combined with the specific situation of children develop appropriate vessels use plans; select the appropriate catheter model in the principle of catheter-caliber thickness and vascular suitable; Strengthen puncture technical training. flush talcum powder on gloves clean before touching the catheter. Send tube in uniform rate, and the best is that 0.3~0.6 cm each delivery pipe velocity; avoid significant activities within the catheter three days.

Puncture difficulties and complications caused by poor feeding tube

Puncture difficult

Reason: younger children were not with the operation of medical staff and the limitation of blood vessels and a choice of length. Nursing Strategy: Focus on the education of children and their families, strengthen psychological counseling, in order to reduce psychological stress in children.

Feed pipe

Reason: smaller vessels, veins spasm, the obstruction of venous blood vessel, made the catheter get into the wrong place. Nursing Strategy: choose the right vein before catheter. You should choose your vein, then select median cubital vein. Try not to venipuncture in the head. If encounter resistance in the catheter insertion process, you should suspend the tube. Then, you should inject into the amount of 0.9% NaCl solution. While the resistance reducing to a certain degree, you can continue to guide tube fed.

Complications cause by bleeding at the puncture site

Reason: the selection of Vascular and the method of puncture are error. Coagulation disorders, hyperactivity or puncture site bleeding occurred Nursing Strategy: Firstly, conduct scientific assessments about children with the disease before the puncture, and understand whether there

is a history of heart for children. Analyze its platelet count, and consider whether catheter carefully; secondly, cover the small side yarn after completion of the puncture and pressing carefully. And partial coverage transparent stickers with elastic bandage after 1 to 2 days. and placed weight salt bags or sandbags in puncture site proper to oppression 4 hours; thirdly, in order to reduce the stimulation of blood vessel wall, the operated action must be slow and gentle as extent as possible in operating time. When bleeding is more, the dressing should be replaced timely, and press the puncture above the pressure points after each dressing.

In a world, since clinical application of PICC complications in children were greatly reduced with the continuous exploration and research nursing intervention. Though resolve PICC complications still have a long journey, we have reason to believe that the "wisdom of human society will continue to overcome all kinds of disease and create our splendid planet civilization"(Wei 2013).

DISCUSSION

Quality care for patients played a key role in the treatment of patients. Quality care can improve the patient's recovery and cure rates, and reduce a waste of time and money of the patient, which caused by improper care on. Implementation of quality care can help build a relationship of trust between doctors and patients. Enthusiasm, initiative and patient care services can

effectively relieve mental disorders, enhance trust and improve patient satisfaction.

The Core of quality care is patient-centered. Make patient care as all the starting point and destination. In short, we need to run through "patient-centered" service concept in clinical care. Take care of every one of our hemodialysis patients with love and responsibility. Strengthen the "people-oriented, all patient-centered" care philosophy to improve the overall quality of care. Improve the relationship between doctor and patient; improve the clinical diagnosis and treatment success rate; make which as fundamental purpose. Implementation of quality care, you can change the current limitations of nursing work; and improve patient recovery. At the same time, it is also an important part of hospital services. And it is the main task of the current health care system in depth. So clinical application is worth of promoting.

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