

Umbilical Catheter Bloodstream Infection

A premature baby is admitted to the NICU. The preemie is needing IV nutrition along with other medications that are given directly into the bloodstream. The provider has prepared herself to insert an umbilical catheter line using a sterile technique with a sterile gown, sterile gloves, and a mask. The provider cleans around the umbilical cord and the skin around it with an antiseptic solution. The UVC is placed and verified by x-ray of placement. It is then secured by sutures and left open to air to dry. It has been 7 days since the UVC was placed and is needing to be reevaluated on keeping placement or removing it. The provider has ordered to keep placement of the UVC for a couple more days. It has developed a crust around the catheter line, has redness, and had been contaminated with urine. The preemie has also spiked a temperature and has a widening pulse pressure 2 days later. It has been ordered to be discontinued and the catheter is to be sent for cultures along with blood cultures needing to be collected. Days later, the cultures came back with growth of Staphylococci. The physician is notified, and a sepsis protocol is placed.

Describe the scenario. In what way did the patient care or environment lack? Is this a common occurrence?

In the NICU many premature patients will have a UVC in place for necessary nutrition and medications. In the scenario above the patient was admitted to the NICU floor and had a UVC placed that was contaminated which led to the infection and possibly sepsis. The bacteria entered the patient's bloodstream through the access of the UVC. Patient care was lacking in keeping the catheter clean and only having it in place for at most one week along with following the protocol.

What circumstances led to the occurrence?

The circumstances that led directly to this occurrence were keeping the catheter in place for longer than it was supposed to be and with it being contaminated with urine along with the nurses not assessing the line and its characteristics. Another circumstance would be the nurse not looking at the vital signs trending up with the temperature and the widening pulse pressure.

In what way could you measure the frequency of the occurrence? (Interview nurses, examining charts, patient surveys, observation, etc.)

Within every healthcare facility there will be a constant review of all infections to prevent many other cases. Because of the severity of the infections that could happen, many have put into place preventative measures to help. One way is interviewing the nurses that have cared for the patient to develop a timeline of when the infection could have been starting and looking at the patients charts to see the trends of vitals.

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What evidence-based ideas do you have for implementing interventions to address the problem?

During insertion of the UVC, no topical ointment or creams are to be used because of the potential to promote fungal infections or bacterial resistance. Umbilical catheters should not be left in place for more than five days. Making sure the necessary protocols are enforced and proper follow-up care is given. Also making sure all nurses are giving feedback to help improve protocols as well as having more huddles before shifts to relay messages about active infections or could be infections should be implemented.

How will you measure the efficacy of the interventions?

Measuring the efficacy can be by using charts in the NICU as well as updating them with every infection noted with a UVC. These charts can be compared week to week or month to month to determine which intervention worked best when trying to prevent these infections.