

Safety and Effectiveness of Catheter Repair in Home Parenteral Nutrition

Abstract:

Background:

Patients with chronic intestinal failure (CIF) who require long-term parenteral nutrition rely on central venous catheters (CVCs) for access to nutrition and hydration. With prolonged use, complications such as central line associated blood stream infection (CLABSI), damage to CVC, and central venous thrombosis (CVT) can threaten the availability of life-preserving access. Due to this, all efforts should be made to preserve CVC with techniques such as catheter salvage in case of CLABSI and catheter repair when damaged. The present study was conducted to evaluate the effectiveness and safety of catheter repair in our patient population.

Methods:

We conducted a retrospective review in 1253 adult patients who received Home Parenteral Nutrition (HPN) at Mayo Clinic between 9/1/1997 and 4/30/2018. The incidence of CLABSI and CVT were determined in patients who underwent CVC repair in that period.

Results:

A total of 55 CVC repairs were done in 36 patients whose mean age at catheter placement was 57.05 ± 16.96 years and 64% were female. Most common indication for HPN was short-bowel syndrome (53%). Median duration a catheter in place was 1552 days (interquartile range 905-2413). During the study period, a total of 14 catheters (25.45%) were complicated with 24 episodes of CRBSI; we observed the CRBSI rates before and after CVC repair to be 0.23/1000 catheter days and 0.21/1000 catheter days respectively. Organisms isolated in blood cultures comprised of Gram negative bacilli (23%), coagulase negative *Staph.aureus* (20%) and others. Most common indications for eventual catheter replacement were mechanical damage (32%), infection (32%) and switching to alternate mode of nutrition (24%). We had a 100% success rate of catheter repair procedure and no post procedural complications were present.

Conclusion:

Catheter repair can be an effective alternative to replacement in damaged catheters, without increasing the risk of CLABSI. It would not only decrease the socio-economic burden of placing a new catheter, but also decrease the risk of compromising future vascular access.