Central Venous Jugular Catheters

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In the Literature

Reminga CL, Silverstein DC, Drobatz KJ, Clarke DL. Evaluation of the placement and maintenance of central venous jugular catheters in critically ill dogs and cats. *J Vet Emerg Crit Care (San Antonio)*. 2018;28(3):232-243.

FROM THE PAGE ...

Placement of central venous jugular catheters (CVJCs), which use the over-thewire modified Seldinger technique, can be labor-intensive.¹ CVJCs require sterile placement, daily cleaning and disinfecting, and radiography to confirm proper placement. Benefits of CVJCs include the ability to leave the catheters safely in place for several days, easier blood sampling, and the ability to deliver multiple fluid types or medications, including difficult-to-administer infusions (eg, high-percent dextrose). Catheters range from single to triple lumen and may be placed in a pelvic limb vessel if the length is sufficient to place the catheter tip into the caudal vena cava.

This prospective study of 27 dogs and 20 cats in a veterinary intensive care unit aimed to describe problems noted during CVJC placement, conditions associated with unsuccessful catheterization, and complications of CVJC maintenance. Daily assessment, inspection, and cleansing (with dilute chlorhexidine solution) of the insertion site were performed. The overall success rate for catheter placement was 91.5%, with most catheters successfully placed on the first attempt. Older patients and those with low BCS or weight were more likely to require more than one attempt. No complications were associated with catheter use in 67.4% of patients. Most complications were mechanical obstructions (eg, venous thrombosis, kinking, malposition) and irritation (eg, skin redness, local bruising, bandage-related cervical swelling). Inflammatory complications (eg, sterile phlebitis, catheter-related infections) were the least common. The majority of complications were minor and did not necessitate catheter removal. Level of staff experience and occupation of catheter placer (eg, veterinarian vs veterinary nurse) were not found to affect the number of complications.

... TO YOUR PATIENTS Key pearls to put into practice:

It is worthwhile to become trained in proper CVJC placement to prepare for patients hospitalized for prolonged periods. Use of multilumen catheters can help decrease the number of peripheral blood sticks and overall number of catheters needed.

Sterile placement of single-lumen intracatheters can be used in lieu of CVJCs. Single-lumen intracatheters are more common in general practice, come in a variety of lengths, do not require use of the modified Seldinger technique for placement, and can be placed in jugular veins or pelvic limb vessels to allow for repeated blood sampling and IV infusions.

Daily unwrapping and cleansing
of any catheter sites—peripheral
or central—along with the use of gloves and hand-washing
between patients can decrease catheter-related infections and should be an important part of hospital protocol.²

References

- Campbell MT, Macintire DK. Catheterization of the venous compartment. In: Burkitt Creedon JM, Davis H, eds. Advanced Monitoring and Procedures for Small Animal Emergency and Critical Care. Ames, IA: Wiley-Blackwell; 2012:61-68.
- Sitzmann JV, Townsend TR, Siler MC, Bartlett JG. Septic and technical complications of central venous catheterization. A prospective study of 200 consecutive patients. *Ann Surg.* 1985;202(6):766-770.

Read more about central venous catheter placement with the modified Seldinger technique at cliniciansbrief.com/ modified-seldinger-technique