Standard Operating Procedures

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Name of Policy:	Indications for placing a PICC line over a Central Venous Catheter	Departments:	ER, ICU, Surgery
Category & No.:	PAT 25.1	Effective by:	May 10, 2024
Version No.:	1.0	Revision History:	Original

Purpose: To create an understanding of when a Peripherally Inserted Central Catheter (PICC) is indicated, and when another kind of access should be considered.

Central Venous Access: central venous catheters have many advantages over peripheral catheters, including that they allow for longer dwell time, safer administration of hyperosmolar solutions such as TPN, blood sampling with minimal stress to the patient.

Locations for placement: Central venous catheters are typically introduced into the jugular vein but can also be readily inserted into the caudal vena cava via the lateral or medial saphenous. If inserted into the lateral or medial saphenous, they do have to be long enough to reach the caudal vena cava (this would need to be confirmed with a radiograph). If the line does not reach the caudal vena cava, then it is not considered a central line, and hyperosmolar solutions cannot be delivered through it. It can, of course, still be used for blood sampling and to have extra ports for delivering IV fluids and fluid supplements.

Advantages: Central venous catheters are available with either a single lumen or with multiple lumens, which allows for the simultaneous delivery of incompatible fluid types as is often needed in the critical patient. Central venous catheters are less likely to be affected by both patient positioning and motion at the point of insertion than peripheral catheters. Centrally situated catheters also allow for cannulation of larger vessels.

Disadvantages: longer placement time, greater expense, slight patient discomfort during placement (patient may require sedation), and longer length may make rapid fluid administration problematic. Monitoring for extravasations can be more difficult than with a peripheral catheter. It may be prudent to avoid central venous catheters in patients at risk for thrombosis, or in animals with a known or suspected coagulopathy. In addition, occlusion of the jugular vein may increase intracranial pressure during insertion, which is a relative-to-absolute contraindication in patients with head trauma or other central nervous system disturbances. PICC lines placed in hind limbs may be more difficult to keep clean compared with those in other locations.
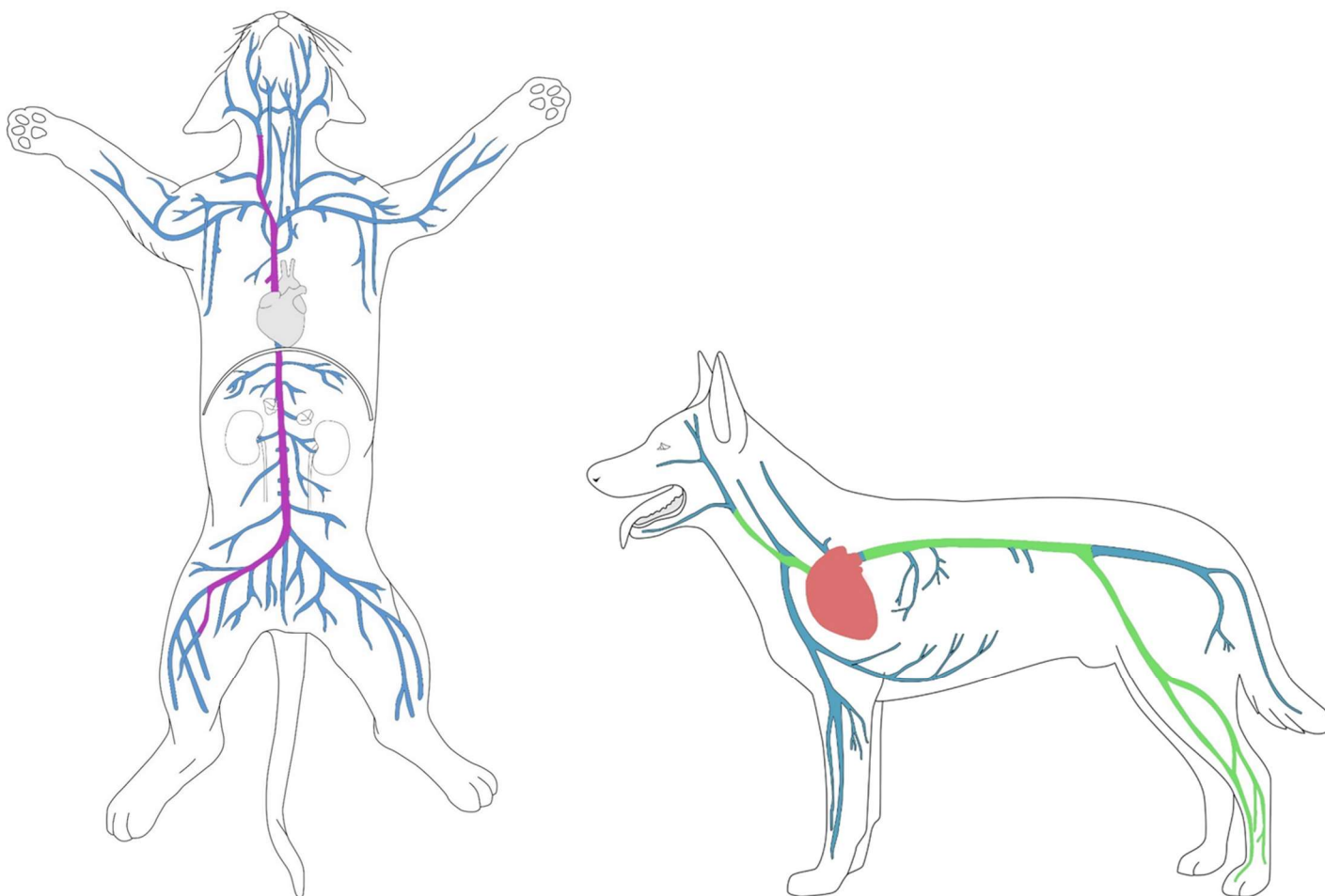
References: *Advanced Monitoring and Procedures for Small Animal Emergency and Critical Care by Jamie M. Burkitt Creedon & Harold Davis, Chapters 4, 41, 47*

How do you decide on a PICC line vs. a regular central line?

➢ For patients with low platelets (less than 50,000/ul) or a coagulopathy, a PICC line is generally preferred over a jugular catheter since the risk of bleeding is lower. Also, a PICC line may be easier to place than a jugular catheter in patients with edema or in very overweight patients. *(from an SOP written by Tony Johnson, DVM, DACVECC)*

➢ In patients requiring central venous access and whose intracranial pressure may be elevated, a PICC can instead be placed via the medial or lateral saphenous vein.

➢ Patients who are unstable, and perhaps cannot handle the sedation necessary for placement of a jugular catheter, then a PICC line in a hind limb may be a better choice.

Importance of aseptic placement and proper care of a PICC line:

➢ Choose a catheter with a length and gauge appropriate for the placement depth and patient's vessel size.

➢ A PICC line needs to be placed as aseptically as possible – clip area well, perform a sterile scrub, wear sterile gloves for placement.

➢ As with other lines and IV catheters, a PICC line should be unwrapped once a shift, the area assessed, cleaned as necessary, and retaped and bandaged.

➢ If the bandaging or tape becomes soiled or wet at all, then it will need to be replaced as soon as possible.

References: *Pictures courtesy of MILA Instruction guide*

Mount Laurel Animal Hospital
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