

Cannulation for the *Skilled* Cannulator Self-Learning Package

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Please review the PowerPoint presentation “Cannulation for the *Skilled* Cannulator” and then answer the questions below. Once you have completed the questions, please check your responses using the answer key. Submit completed answer sheets to your VA Nurse or Renal Educator for their review with you.

In addition to completing the PowerPoint presentation and the quiz, you need to complete the following to be designated as a *Skilled Cannulator*:

- Under the observation of an advanced cannulator, successfully cannulate 3 established AVFs and 3 established AVGs designated as “moderately complicated.”
- Under the observation of an advanced cannulator, successfully cannulate 3 new AVFs and 3 new AVGs designated as “easy.”
- Under the observation of an advanced cannulator, successfully demonstrate the use of ultrasound to support the cannulation of at least one AVF or AVG.

Skilled Cannulators may cannulate established AVFs and AVGs categorized as “moderately complicated” (i.e., one cannulation complication) OR new accesses with no complications. If AVF has a buttonhole, track is well established. Uses steel or teflon needles.

Questions

1. What types of accesses may a *skilled cannulator* cannulate?
2. Describe a “moderately complicated” AVF and AVG.
3. True or false - It is appropriate to use the Allen’s test in the preoperative assessment of a patient undergoing an AVF or AVG creation/insertion.
4. How is the Allen’s test done?
5. What does a positive Allen’s test infer?
6. What is the usual minimum time required before cannulating an AVF or AVG?

7. What causes an AVF to develop and mature?
8. What are the signs of a mature AVF?
9. Why does an AVG need a minimum time prior to cannulating?
10. Who determines when a new AVF or AVG is ready to be cannulated?
11. Prior to cannulating any access, what steps should be completed?
12. Should ultrasound be used to map a site prior to cannulating?
13. What are the causes of early AVF failure?
14. Describe the needle and pump speed progression when initiating a new AVF.
15. Describe the desired needle and pump speed once cannulation has been established.
16. What potential problem could occur if the blood flow is too fast for the size of an AVF needle?
17. If an AVF is cannulated too early, there is a risk of AVF failure. What are some of the problems that can lead to AVF failure?
18. Which sign is indicative of a Juxta-anastomotic venous (outflow) stenosis?
 - a) Thrill only felt in systole.
 - b) Strong pulse felt at anastomosis only.
 - c) Often felt as severed dip in vein or shelf in vein.
 - d) Above area of stenosis, pulse is weak and vein may be small or difficult to palpate.
 - e) All of the above

19. True or false - When an AVF is stenotic, a pulse not a thrill may be detected at the arterial anastomosis.
20. Which sign is indicative of an eminent aneurysmal rupture?
- Thinning of skin over AVF, often white and shiny, skin is pulsatile
 - Ulceration or non-healing needle sites; e.g. presence of black eschar
 - Evidence of bleeding or difficulty with prolonged bleeding from a particular needle site
 - All of the above
21. What causes an aneurysm?
22. What is the difference between a *true aneurysm* and a *false* or *pseudoaneurysm*? Which type of accesses does each occur in?
23. An infection in a mature AVF may present as which of the following?
- Perivascular cellulitis with localized erythema
 - Swelling or tenderness, or as infected aneurysms
 - Abscesses from infected needle sites
 - All of the above
24. Both arterial steal syndrome and ischemic monomelic neuropathy are very painful. What are the two primary differences between them?
25. Which of the following are important assessment cues when determining the presence of ischemia?
- Skin temperature
 - Skin colour
 - Gross sensation
 - Signs of skin breakdown, tissue necrosis or infection
 - Range of motion
 - Presence and quality of radial and ulnar pulses
 - Numbness/tingling
 - All of the above
26. What is the most common site for stenosis to develop in an (a) AVF; and (b) AVG?

27. What is meant by the term “intimal hyperplasia?”
28. BC Renal Agency PVAAT guidelines recommend referral for a fistulogram when the access flow rate is:
- a) < 300 mL/min
 - b) < 500 mL/min for AVF
 - c) < 650 mL/min for AVG
 - d) Or decreased from baseline > 20% from baseline values
 - e) a, b, and c
 - f) b, c, and d
29. True or false - According to the BC Renal Agency PVAAT guidelines, q 4-6 weekly monitoring of AVFs and AVGs is recommended using an online total access flow measurement, if available.