

Cannulation for the *Advanced Cannulator* Self-Learning Package



Please review the PowerPoint presentation “**Cannulation for the Advanced 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, it is suggested you complete the following to fulfill the criteria for an **Advanced Cannulator**:

- Under the observation of an advanced cannulator, successfully cannulate 3 AVFs and 3 AVGs designated as “complicated” that may or may not have been previously cannulated.
- 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 form a buttonhole track for an AVF.

Advanced Cannulators may cannulate all AVFs and AVGs including new accesses and accesses where buttonhole sites/tracks are being established. Advanced Cannulators also observe cannulation skills of colleagues and offer feedback.

Refer to Cannulation Learning Plan:
www.bcrenalagency.ca ► Health Professionals ► Clinical Resources ► Vascular Access ► Cannulation Teaching Tools

Direct link: www.bcrenalagency.ca/resource-gallery/Documents/Cannulation%20Learning%20Plan.pdf

Questions

1. What types of accesses may an *advanced cannulator* cannulate?
2. Describe a “complicated” AVF and AVG.
3. When should the MD or VA Coordinator be consulted regarding a specific access?
4. What are the benefits of a buttonhole track in an AVF?
5. What are the drawbacks of a buttonhole track in an AVF?
6. What patients are candidates for buttonholes?
7. What are the characteristics of a good potential buttonhole site?
8. How many cannulations are usually required to form a buttonhole track?
9. Ideally, how many buttonhole sites should be available for each patient?
10. Rank the following in order of importance when offering feedback to colleagues:

FEEDBACK TO COLLEAGUES	RANKING: 1= Most important 3= Least important
What you say	
What you don't say (non-verbal)	
The way you say it	

Answers

1. What types of accesses may an *advanced cannulator* cannulate?
All accesses including new accesses and accesses where buttonhole tracks are being established.
 - Unexplained, prolonged bleeding (>10 – 15 min) from cannulation site on 3 consecutive runs
 - Access with signs of complications

2. Describe a “complicated” AVF and AVG.

AVF: Fistula with 2 or more cannulation complications such as:

 - vein that is not easily palpable (vein deep or rolls when palpated)
 - narrow vein
 - vein with a poorly defined area of straight vein for cannulation
 - visible collateral veins that may interfere with cannulation
 - recent and repeated infiltrations or reduced access flow
 - access limb with signs of edema, bruising, or local infection.

AVG: Graft with at 2 of more cannulation complications such as:

 - difficult to palpate and/or not a uniform size (i.e., may bulge in places)
 - deep or inconsistent depth (may be flat and/or mushy to palpate)
 - limited area available for cannulation
 - signs of false aneurysm
 - recent and repeated infiltrations or reduced access flow
 - access limb with signs of edema, bruising, or local infection.

3. When should the MD or VA Coordinator be consulted regarding a specific access?
 - Access is difficult to cannulate
 - Unable to achieve a blood pump speed of >300 mL/min by week 3 or <350 mL/min in established HD in 2 consecutive runs

4. What are the benefits of a buttonhole track in an AVF?
 - Some studies/reviews report that the BH method results in fewer needling attempts, fewer hematomas, reduced number of infiltrations, reduced number of aneurysms and aneurysm size and less likelihood of “area” cannulation. Some studies report a reduction of pain with needle insertion.
 - Once established, can use blunt needles to access the AVF.

5. What are the drawbacks of a buttonhole track in an AVF?
 - Several studies/reviews reported an increased risk of infection
 - Requires a consistent cannulator(s) until the track has formed (usually 8 - 12 cannulations)

6. What patients are candidates for buttonholes?

Patients who are capable of self-cannulation and, upon assessment by the nephrologist, VA Nurse and/or Home Hemodialysis Educator, are deemed competent to manage the responsibility of BH cannulation. If these criteria cannot be met, rope ladder technique is recommended.

7. What are the characteristics of a good potential buttonhole site?
 - Straight section of fistula
 - No aneurysm in the area
 - At least 7 cm (2 – 3 in) is available between needle tips (buttonhole sites)
 - Ease of access and needle orientation for patient (if patient plans to self-cannulate)

8. How many cannulations are usually required to form a buttonhole track?
- a) 1 – 4 times
 - b) 4 – 7 times
 - c) 8 – 12 times**
 - d) More than 12 times
9. Ideally, how many buttonhole sites should be available for each patient?
Two sites, one of which is a back up site if there is a problem with the primary site.
10. Rank the following in order of importance when offering feedback to colleagues:

FEEDBACK TO COLLEAGUES	RANKING: 1= Most important 3= Least important
What you say	3
What you don't say (non-verbal)	1
The way you say it	2