

Buttonhole Cannulation

What do we know?

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Objectives

- To learn the facts
- How to develop an initiation plan
- Explain the benefits
- Review the barriers
- Examine techniques
- Know how to troubleshoot
- What are the resources

Develop a Buttonhole Team

- Able to look, listen, and feel access
- Great cannulator
- Follows procedures
- Helps develop a plan
- Educates/Re-enforces teaching



Buttonhole Technique

- This has been in use in Europe over 25 years with much success
- Used for native Fistulas only
- Uses the same site, at the same depth, at the same angle each and every cannulation creating a tunnel track like an earring hole
- Should only be used if blunt needles are available

Plan of Development

- Same cannulator until track formed (approximately 3 weeks, 4 for diabetics)
- WHAT? SAME PERSON THREE TIMES a week, EVERY week??? CAN'T DO THAT!!
- Form two sets of buttonhole tracks at the same time.
- Use one tract to initiate development of AVF

Benefits

- Less painful
- Fewer missed sticks
- Fewer infections
- Fewer infiltrations and hematomas
- Less time consuming

Technique

- Use a tourniquet in the axilla
- Determine the best two sites with best venous and arterial pressures, blood flows and areas least likely to infiltrate
- Initially use sharp needles
- Always use the same two sites
- Once track is established, change to blunt needles



Buttonhole Technique

- The needle gauge should remain the same (sharp to blunt)
- Do not direct the needle, let the needle follow the track.
- Remove the scab using aseptic technique with tweezers or lay saline-soaked 2x2 over the scab
- Don't use a needle to remove scabs

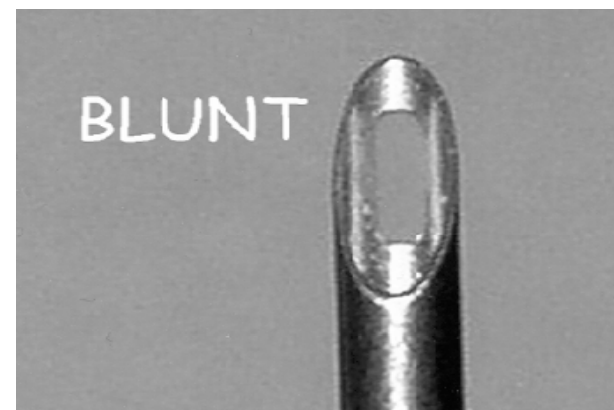
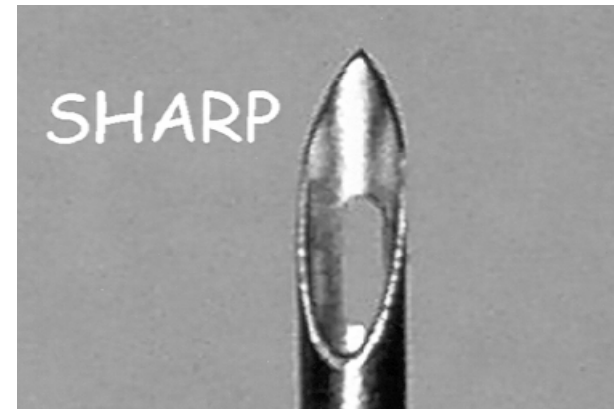


Barriers

- Need to assign same staff to cannulate until a track is formed
- Not possible in heavily scarred AVF (Old AVF, keloid formation)
- If using an older matured access to start buttonhole cannulation, scar formation may become too thin for tract.

When to Switch to Blunt Needle

- When a round hole is easily visible
- When the area is well healed
- When the resistance to needle placement is low and does not change from day to day
- DO NOT use force to advance the blunt needle



Troubleshooting

- Bleeding during dialysis
 - Trying to direct the needle during insertion
 - Needle has cut the track
- Difficult to place the blunt needle after a weekend
 - Use a sharp needle
- Site is not progressing
 - Can use a new site

Troubleshooting

- Can not advance the needle through the vein
 - Some individuals require a sharp needle all the time
- Patient is hospitalized or is temporarily dialyzing at a different unit
 - It would be fine to use alternative sites (at least $\frac{3}{4}$ inches away)



Damaged Buttonhole



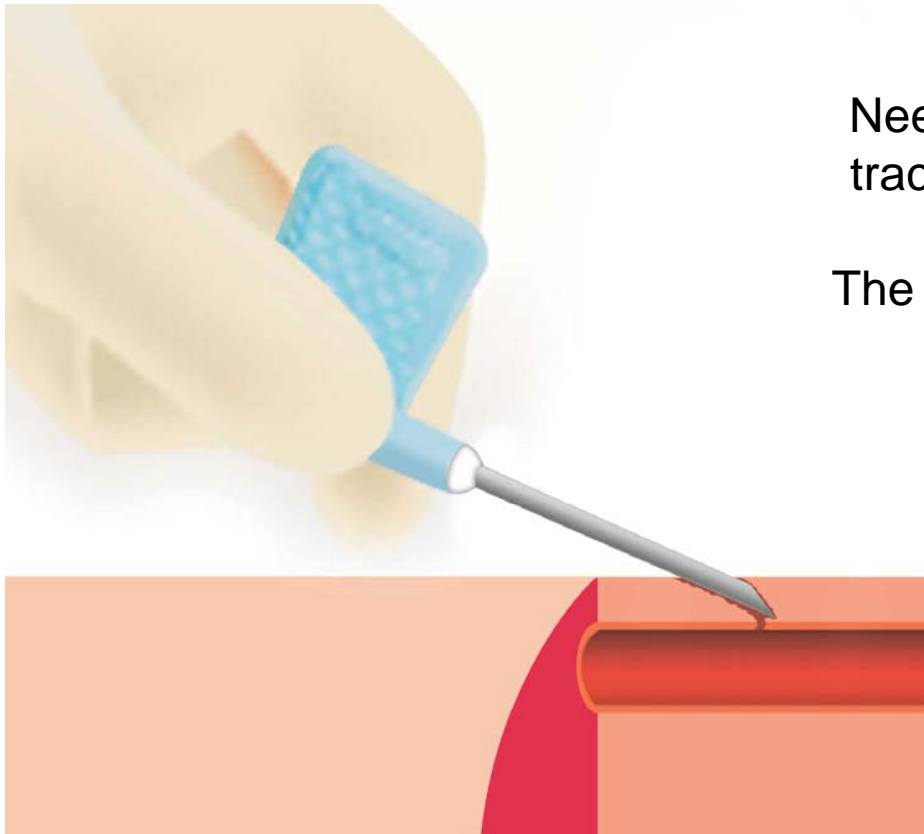
Buttonhole sites where sharp needles were used (never converted to blunt needles)

Ultrasound shows thrombus and stenosis at site.

Images courtesy of Dr. William C. Jennings, MD,
University of Oklahoma



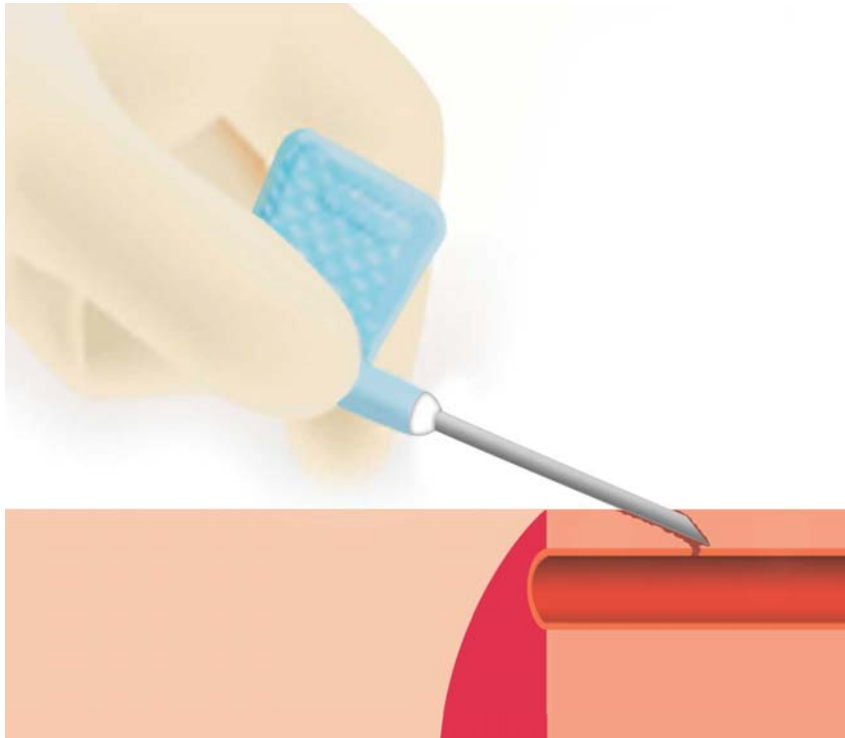
Buttonhole Wrong Angle



Needle inserted into the buttonhole tunnel track- but the angle is not aligned with the vessel flap

The needle can bounce on the vein and not displace the vessel flap

Buttonhole Wrong Angle



- Adjust angle to find the flap
- Lift up on down on the needle to readjust the angle until the needle drops into the vessel flap
- Causes: moving needle from angle used to enter the skin, arm positioning not in routine place, or patient weight gain or loss

How Do I Start

- Develop and Educate a cannulation team
- Develop a plan of who would be good candidates
- Educate all staff on Constant-site cannulation and let them know the plan of action
- Educate your clients
- Coordinate staff and client schedules
- Initiate and track success.

Use the Resources

- MARC
- Champions through MARC such as Dr. Lockridge, Dr. Schenk, and Kim Deaver
- Use resources off of other network websites
- Nephrology Nursing Core Curriculum