The Royal Wolverhampton NHS Trust

Specialist Clinical Practice Renal Sub-committee

Practice Reference:	**SNCP04**
Title:	Procedure for Insertion of Arterio – Venous Fistula Needles
Date of Implementation:	**October 2009**
Version:	**5**
Review dates:	**March 2015**
Date of Next review:	**March 2018**
Authors Title:	Renal Advanced Nurse Practitioner
Practice Location:	Renal Unit Specialist Clinical Practice Folder/ Trust Intranet

1.0 Practice Statement:

1.1 To safely cannulate an Arterio – Venous fistula (AVF) and minimise potential risks of infection and extravasation

1.2 To be undertaken by a registered nurse with a renal qualification, or an RN with training from a renal nurse who has been assessed and has evidence of competence.

2.0 Equipment:

- Dressing Trolley
- Personal Protective Equipment (PPE) non sterile gloves, plastic apron, visor.
- Fistula Needles (14g – 17g dependent on maturity of fistula) 1 Arterial 1 Venous for double needle or 1 single needle. 2 x blunt needle for button hole.
- Tourniquet
- Pillow and case
- 2 x sterile towels
- 1 x pack sterile gauze swabs
- 1 x Chloraprep Frepp 1.5ml®
- 2 x 5ml syringes
- 1 x 10mls 0.9% Saline for injection
- Ethyl chloride spray (optional)
- Roll of Tape (per patient requirement)
- Sharps Box
- 1 x Blue Needle 23g

3.0 Detailed Action:

3.1 Provide patient with explanation of procedure and obtain consent.

3.2 Advise patient to prepare the arm or leg by washing with soap and water and drying thoroughly, removing any dressings if in place.

3.3 Ensure the patient is comfortable with access limb resting on a pillow if preferred.

3.4 Decontaminate hands with soap and water and dry thoroughly.

3.5 Apply PPE

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3.6 prepare for cannulation by priming the needles with 0.9% Normal Saline. Leaving the syringe attached to the needle, as per ANTT.

3.7 Assess fistula thrill and suitable sites for cannulation.

3.8 Clean fistula with Chlorhexidene 2% and Isopropyl alcohol 70% (Chloraprep one step Frepp 1.5ml) for 30 seconds and allow to dry for 30 seconds

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3.9 Place sterile towel under limb with the cleaned fistula.

3.10 Administer ethyl chloride anaesthetic spray to the chosen cannulation sites of fistula if required.

3.11 Apply tourniquet as required. Take primed fistula needle with the clamp open and insert into AVF with the bevel of the needle facing upwards. Test the flow of blood by flushing with saline and turning or repositioning the needle as required.

3.12 Secure the needle with tape.

3.13 Repeat steps 3.8 – 3.10 for Double Needle

For Button Hole technique refer to appendix 1

3.14 Access is now ready for commencement of haemodialysis treatment (SNCP06)

3.15 Commence dialysis treatment as per patients' dialysis prescription ensuring all pre dialysis observations have been recorded.

3.16 Remove PPE. Dispose of relevant equipment in appropriate waste bag.

3.17 Wash hands with soap and water and dry thoroughly.

4.0 Financial Risk Assessment

4.1 Following a Risk assessment of this clinical practice no financial risks have been identified.

5.0 Equality and Diversity Risk Assessment

5.1 Following an Equality and Diversity risk assessment of this clinical practice, no equality and diversity risks have been identified.

6.0 Maintenance

6.1 This clinical Practice will be reviewed and kept up to date by the Renal ANP and the Specialist Clinical Practice Renal Sub- Committee workgroup will recommend changes and amendments.

7.0 Training

7.1 All staff undertaking this practice must have received training to include:

Demonstration of practice
Supervised practice

All staff undertaking the procedure must have been competency assessed and deemed competent in the procedure by a competent practitioner.

8.0 References

Thomas N Renal nursing 4th Edition 2014 Bailliere Tindall

Levy, J. Morgan, J. Brown, E. Oxford handbook of Dialysis 3rd Edition 2009. Oxford University Press.

Saving Lives: reducing infection, delivering clean safe care. Revised edition: October 2007 Department of Health

Davies A.H, Gibbons, C.P, Vascular Access simplified. March 2003 tfm Publishing.
Levy, J. Morgan, J. Brown, E. Oxford handbook of Dialysis 2001. Oxford University Press.

NKF KDOQI Guidelines National Kidney Foundation Inc. 2006

Appendix 1

Addition to current clinical practice no SNCP04

Button Hole Needling Technique

Button hole refers to a cannulation technique for fistulas, whereby the exact same spot is needled at every dialysis session. By using the same hole, over time, a tract will develop. It is thought that this method makes the needling experience easier for patients and causes fewer traumas to the vein.

Only patients that have been swabbed for Staph Aureus and are negative are suitable for Buttonhole needling technique due to the increased risk of infection and subsequent bacteraemia with this technique.

Any patient who is already on buttonhole who becomes Staph Aureus positive should be converted to Rope Ladder technique. If this causes problems with their vascular access please discuss with the Advanced Nurse Practitioner regarding risk assessment for particular circumstances.

For buttonhole to be performed a tract needs to be formed using regular sharp needles, which takes about two weeks or 6 sessions. It is important that the same nurse develops the tract for the initial two weeks because the needle has to be inserted in the same hole using the same angle and depth each time. After the tract has formed, blunt needles can then be introduced.

The nurse will be able to identify when the blunt needles can be introduced by the needling experience, the needle, will go very easily into a tract and the flashback of blood will ensure the needle is in the vessel. It is important to introduce the blunt needles as soon as the tract is developed to prevent trauma to the tract from sharp needles. In most people a tract will develop in approximately 6 sessions.

ANTT should be used to minimise the risk of infection.

Equipment extra to usual clinical practice SNCP04:

Chlorhexidine solution 0.5% in

Chlorhexidine soaked sponge – 2% Chlorhexidine / 70% alcohol – (Chloraprep Frepp 1.5ml applicator)

'Steripick'/ White19g needle

Blunt buttonhole fistula needle

Method

- The patient will wash their fistula arm using soap and warm water and dry well.
- The nurse will assess fistula as per usual protocol/care plan
- The nurse will wear their personal protective equipment.
- If the scab from previous needling is still present after washing the nurse will soak a piece of sterile gauze in Chlorhexidine and clean the area.
- Ensuring the Chlorhexidine has fully evaporated, the nurse will remove the scab with a sterile white needle or a steripick using a downward 'sweeping' motion, taking care not to break up the scab or injure surrounding skin
- Once scab is removed the nurse will clean fistula once more with a 'Chloraprep' sponge.
- Ensuring the cleaning solution has fully evaporated, the nurse will then insert the needles in the exact same hole as before.
- The needles will be securely fastened using tape.
- The above method remains the same before and after tract formation, the only difference will be the introduction of blunt needles after approximately two weeks.

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