Case Study: Buttonhole Cannulation Technique with Keloid-Scarred Skin

Sylvia Donato-Moore, BSN, RN, CNN; DaVita at Home, Houston, TX

A Keloid scar is defined as an abnormal scar that grows beyond the boundary of the original site of a skin injury. An over abundance of scar tissue can cause stenosis to a buttonhole site. However, this case study will show that buttonhole cannulation with Keloid scared skin can be successful. Presented is the experience of a 37 year-old African-American female on six days-a-week home hemodialysis. She has extensive Keloid scarring over a well-developed fistula of 3 years. She has been on hemodialysis for 15 years and required angioplasty every 4-6 months as her historical pattern prior to using buttonhole cannulation. Thorough assessment of the arteriovenous fistula was performed for optimal primary and secondary buttonhole sites. The patient was taught to self cannulate and assess acceptable arterial and venous pressure limits <260 mmhg during home hemodialysis. The results include observations of buttonhole self-cannulation after 1 year. When cannulation became difficult or increase in venous pressure was noted, angioplasty revealed 60-70% stenosis. New buttonhole sites were created on the venous end of the fistula multiple times over the last year. Signs that a new site was needed included increase in venous monitoring pressures while on dialysis, difficulty placing the fistula needle, and a declining Std Kt/V <2.0 g/dL. This case study illustrates that experience with the use of buttonhole cannulation with patients who have Keloid scarring is a possible option. For patients on frequent home hemodialysis being able to use this technique will allow the inexperienced cannulator to maintain successful needle placement. This technique will preserve the fistula, cause less pain, and prevent infiltrates. Additionally, using back-up buttonhole sites is a requirement to reduce the need to create new sites with sharp needles less frequently.

Abstract selected for presentation at ANNA’s 40th National Symposium, San Diego, CA, 2009