

Hybrid Arteriovenous Grafts; An Alternative Approach to Traditional Hemodialysis Access Creation

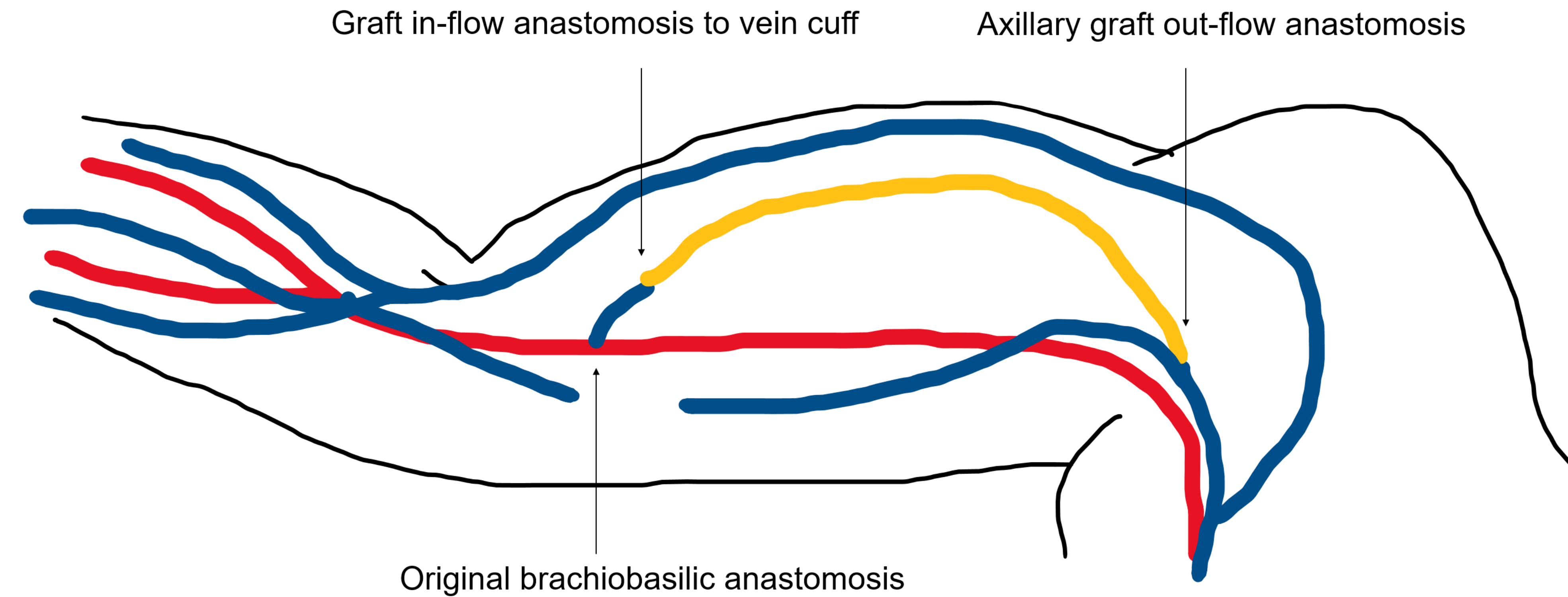
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INTRODUCTION:

- Propose a two-step approach focusing on the basilic vein for creating access
- First step brachio-basilic arteriovenous fistula (AVF) is created regardless of vein size
- Basilic vein is then transposed if fistula has matured, otherwise a brachio-axillary graft can be anastomosed to the vein cuff for inflow rather than directly to the artery



DISCUSSION:

- Strengths
 - More people get chance at autologous access
 - Original AV anastomosis may be protective against steal
- Limitations
 - Potential waste of distal sites
 - Longer waiting time to use

CONCLUSIONS:

- Similar maturation rate and 1 year patency compared to historical data with lower incidence of steal syndrome

METHODS:

- Retrospective review
- Single private vascular surgery practice at 1 hospital
- Patients who underwent brachio-basilic AVF creation
- Between January 1, 2014, to December 31, 2019
- 113 patients collected

POPULATION	
Age (Avg + SD)	62 + 14
Sex (% Male)	58
BMI (Avg + SD)	27 + 7
Race (%)	52% black 42% white 6% other
Diabetic (%)	60
PAD (%)	25
Catheter first (%)	94

RESULTS	
Maturation rate (%)	70.3 (60-68)
Primary patency at 1 year (%)	63 (43-80)
Steal Syndrome incidence (%)	4.7 (5-20)
Average time to use (weeks)	16
Required additional catheter (%)	28

RESOURCES:

- Anton N. Sidawy, MD, MPH, Lawrence M. Spengel, MD, Anatole Besarab, MD, Michael Allon, MD, William C. Jennings, MD, Frank T. Padberg Jr, MD, M. Hassan Murad, MD, MPH, Victor M. Montori, MD, MSc, Ann M. O'Hare, MD, Keith D. Calligaro, MD, Robyn A. Macsata, MD, Alan B. Lumsden, MD, and Enrico Ascher, MD The Society for Vascular Surgery: Clinical practice guidelines for the surgical placement and maintenance of arteriovenous hemodialysis access (J Vasc Surg 2008;48:2S-25S.)
- Bram M. Voorzaat, Cynthia J. Janmaat, Koen E.A. van der Bogt, Friedo W. Dekker and Joris I. Rotmans; on behalf of the Vascular Access Study Group Kidney360 September 2020, 1 (9) 916-924; DOI: <https://doi.org/10.34067/KID.0000462020>
- Erratum Regarding "KDOQI Clinical Practice Guideline for Vascular Access: 2019 Update" (Am J Kidney Dis. 2020;75[4][suppl 2]:S1-S164). Am J Kidney Dis. 2021 Apr;77(4):551. doi: 10.1053/j.ajkd.2021.02.002. Erratum for: Am J Kidney Dis. 2020 Apr;75(4 Suppl 2):S1-S164. PMID: 33752805.
- Malik J, Tuka V, Kasalova Z, Chytilova E, Slavikova M, Claggett P, Davidson I, Dolmatch B, Nicholls D, Gallieni M. Understanding the dialysis access steal syndrome. A review of the etiologies, diagnosis, prevention and treatment strategies. J Vasc Access. 2008 Jul-Sep;9(3):155-66. PMID: 18850575.
- Stoumpos S, Traynor JP, Metcalfe W, Kasthuri R, Stevenson K, Mark PB, Kingsmore DB, Thomson PC. A national study of autogenous arteriovenous access use and patency in a contemporary hemodialysis population. J Vasc Surg. 2019 Jun;69(6):1889-1898. doi: 10.1016/j.jvs.2018.10.063. Epub 2018 Dec 21. PMID: 30583903.

