Abstract

Is Hydrostatic Dilation to Increase Vein Size Useful in Haemodialysis Vascular Access Construction

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Introduction:
Vessel diameter during construction has been reported to be associated with maturation and function of native haemodialysis arteriovenous fistulae. In our endeavour to enhance vein size, and thence enhance maturation & subsequent function, we undertook hydrostatic dilation of the vein prior to construction of the anastomosis. A study was undertaken to evaluate them.

Patients and Methods:
Design: Retrospective and Review and telephone interview.
Inclusion: Patients will had hydrostatic dilation of the basilic vein during single stage brachiobasilic fistula construction with basilic vein superficialisation (BBF,BVHD, BVS)
Controls: Patients who had two stage brachiobasilic fistula construction and subsequent basilic vein superficialisation (no hydrostatic dilation (BBF, BVS)

Results:

	Single stage BBF, BVHD,BVS	Two stage BBF, BVS	p
Evaluated patients (Number)	52	42	-
Fistula matured for function	40 (76.9%)	29 (69.0%)	p= 0.39
Mean Maturation period (wks)	5.7	16.8	<0.005
Functional patency (12 months)	69.7%	49.8%	p= 0.07
Complications			
Haematoma	3 (58%)	3 (7.1%)	p= 0.787
Skin flap necrosis	2 (3.8%)	2 (4.8%)	p= 0.827
Wound infection	7 (13.5%)	6 (14.3%)	p=0.908
Lymph leak	3 (5.8%)	0 (0%)	p=0.114
Venous hypertension	4 (7.7%)	4 (9.5%)	p= 0.252
Arterial steal	2 (3.8%)	6 (14.3%)	p=0.086

Discussion & Conclusion:
Although the sample and followup is somewhat modest, the results indicate that the mean maturation period was shorter (5.7 vs 16.8 wks) and, although statistically non significant, the proportion of fistula maturing was larger (76.9% vs 69.0%) and functional patency was longer (67.9% vs 49.8%) for the hydrostatic dilatation group illustrating that the strategy is helpful. This may indicate that hydrostatic dilation of the vein is useful in haemodialysis vascular access.