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30th Global: Vascular and Endovascular Issues, Techniques and Horizons™

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Vascular Bridge Grafts of the upper extremity have been in use for more than 25 years. Many different conduits have been employed; investigators have continually searched for a graft with superior properties. We described a prospective randomized study comparing the new Slider Graft (Atrium) with the Hybrid PTFE Graft (Atrium); the latter has been used for a number of years. The Slider Graft is also made of PTFE. For this study, both grafts were 6 mm in diameter and 40 cm in length. The Slider Graft has a low friction polyethylene sheath over its entire length. This sheath expedites the passage of the graft through the tunnel. At one end, the graft and the polyethylene sheath are attached to a metal tip. This tip has male threads, which may be inserted firmly into a Kelly Wyck (Atrium), or any standard non-sheath tunneling system. This alleviates graft separation, turning, and slipping during tunneling.

The primary objective of this trial was to determine the safety and efficacy of the Slider Graft as compared to the Hybrid PTFE Graft in vascular access surgery. The secondary objective was to evaluate how tunneling effects graft performance. We randomized 60 subjects for this study

with two equal arms. During surgery we measured various parameters including ease of tunneling, tunnel bleeding, anastomotic bleeding, graft sweating, and immediate patency. To assess arm edema we measured circumference 7.5 cm and 20 cm above the wrist prior to surgery and in follow-up visits at 1 week, 1 month, and 3 months. Long-term patency was also assessed at these visits and at 6, 9, and 12 months.

Our results show tunneling with the Slider Graft is easier to accomplish ( $P=0.0001$ ) with reduced tunnel bleeding ( $P=0.0047$ ) and anastomotic bleeding ( $P=0.042$ ). Further, the Slider Graft virtually eliminated the complication of graft sweating and seroma development ( $P=0.0005$ ). This may be due to reduced stretching during insertion. At 180 days the Slider Graft demonstrated improved primary patency, which was statistically significant ( $P=0.047$ ). At 360 and 720 days the Slider Graft continued to demonstrate a trend toward improved primary patency ( $P=0.160$ ).

In summary, we feel the Slider Graft has significant advantages when compared to the Hybrid PTFE Graft, and tunneling is an important factor in creating vascular access grafts.