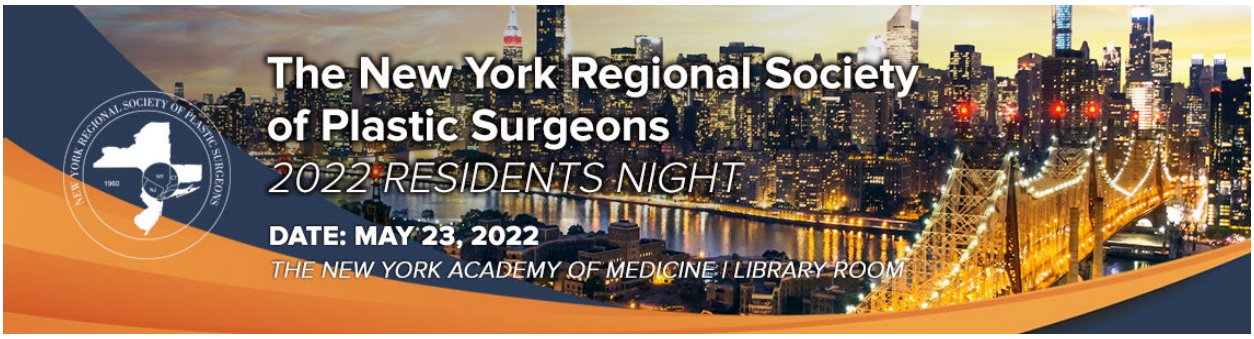

52284-Weisberger

52284: Perineal Reconstruction after Radical Pelvic Surgery: A Cost-Effectiveness Analysis

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Background: Radical resection of pelvic and low rectal malignancies lead to complex reconstructive challenges. Many pelvic reconstruction options have been described including primary closure, omental flaps, and various fasciocutaneous and myocutaneous flaps. As a consensus on which flap is the preferred for these defects has not been reached, clinical decision making often dictates reconstructive sources. Little consensus exist in the literature on which of the various options in the reconstructive armamentarium provides a superior outcome. The authors of this study set out to determine the costs, and quality of life outcomes and effectiveness of different reconstructive method between primary closure (PC), Vertical Rectus Abodomins Muscle flap (VRAM), Gluteal thigh flap (GTF) and Gracilis Flap (GF) to aid surgeons in identifying an optimal reconstructive algorithm.

Methods: A decision tree analysis was performed to analyze the cost, complications, and QoL associated with reconstruction by PC, GTF, VRAM flap, and GF. Costs were derived from Medicare reimbursement rates(FY2021), while quality adjusted life years(QALYs) were derived from the literature. The robustness of our findings were further assessed with one-way and two-way sensitivity analyses.

Results: GTF were the most cost-effective treatment strategy with an overall cost of $62,078.28 with 6.54 QALYs and an ICER of $5,649.43. GTF were always favored as the most cost-effective treatment strategy in our one-way sensitivity analysis. GF became more cost-effective than GTF, in the scenario where GTF complication rates increased by roughly 4% higher than GF complication rates.

Conclusion: Our data suggests when available GTF should be the first-line option for reconstruction of pelvic defects as it provides the best quality of life at the cheapest cost. However, further studies directly comparing outcomes of GTF to VRAM and GF are needed to

further delineate superiority and situations where each flap type is most optimal. We recommend GTF if the patient specific factors, size of defect, and anatomy are appropriate due to our findings. Furthermore, this study identified situations where GF was most cost-effective due to changes in complication rates which are dependent on patient-specific factors and local expertise. As such, these elements should also be considered in the clinical decision-making framework.

	Cost ($)	Increased Cost (S)	QALYs	Increased QALYs	Cost/Effect	ICER
VRAM	60,201.17	-	4.0849	-	14,737.41	-
Primary Closure	61,071.62	870.45	6.3591	2.2742	9,603.81	382.75
Gluteal Flap	62,078.28	1,006.66	6.5373	0.1782	9,496.02	5,649.43
Gracilis (dominated)	64,762.24	2,683.96	6.4507	-0.0866	100,039.62	-30,982.67