

Safety & Efficacy of Microsurgical Pedicle Extension in Free Flap Reconstruction

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Intro

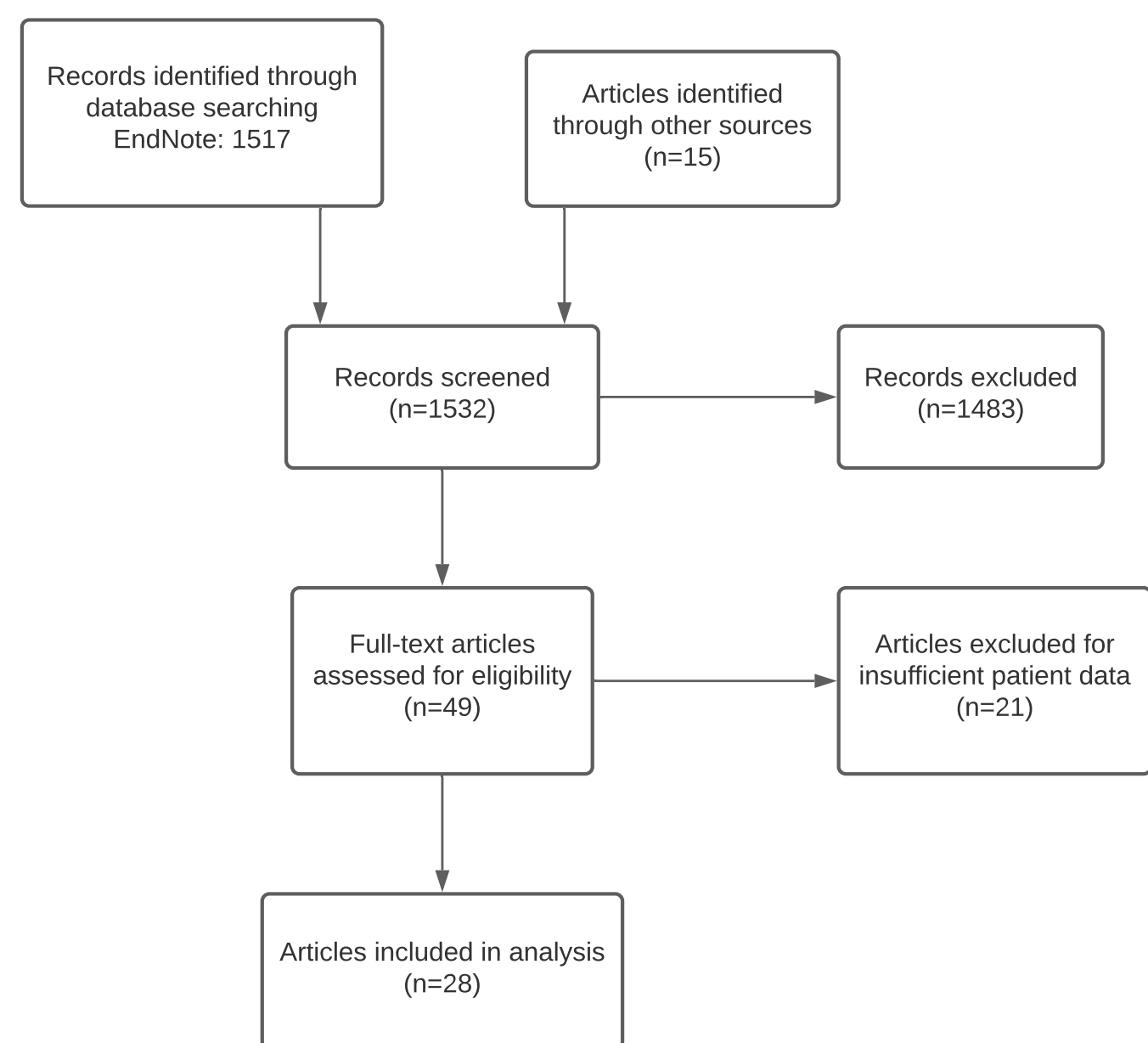
- Soft tissue defects that are preceded by prior infection, radiation, soft tissue trauma, etc. may require reconstruction with free flaps. Often these high risk reconstructive cases need vascular pedicle extension to form a clear anastomosis.



- The objective of this study is to systematically assess the literature about outcomes of pedicle extensions with arteriovenous loops (AVL), arterial grafts, and vein grafts in free flap reconstruction.

Methods

- 28 retrospective studies totaling 855 procedures from 2007 to 2021 were included in this review.



Recommendations

This systematic review strongly suggests that pedicle extensions of free flaps in high-risk complex settings are practical and elective options.

There may be a benefit to using arterial conduits when clinically appropriate. Nonetheless, further examination is warranted given the small number of reconstructions reported in the literature.



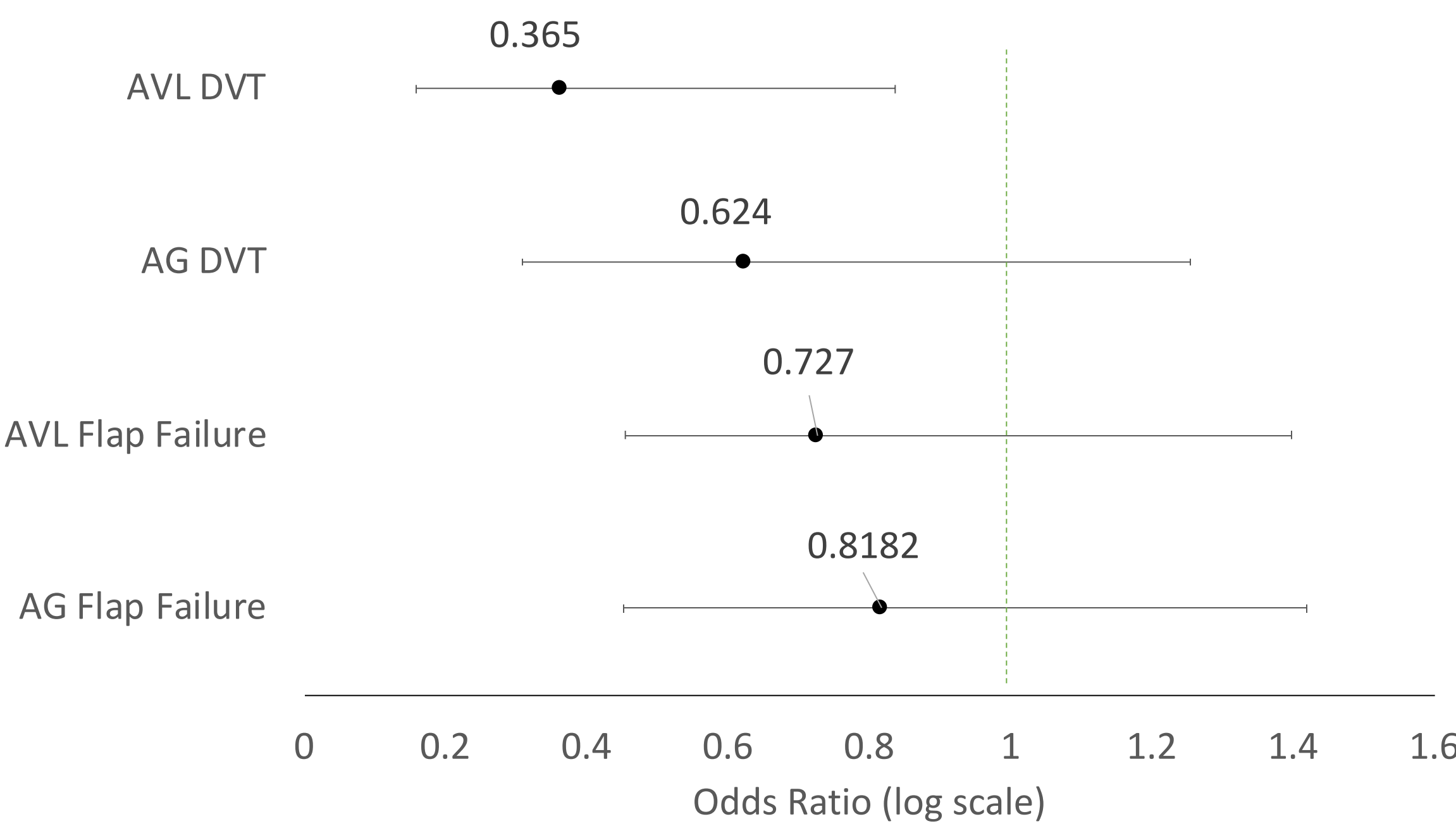
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Results

Table: Reported complications by pedicle extension method.

Parameters	VG N=426	AG N=208	AVL N=221	Total N=855
Overall Complication Rate, N (%)	88 (20)	25 (12)	38 (17)	159 (17)
Flap Failure, N (%)	45 (11)	18 (9)	19 (8)	82 (10)
Thrombosis, N (%)	35 (8)	11 (6)	12 (5)	58 (7)

Forest plot: Risk of DVT and free flap failure in AVL & AG extensions compared to VG extensions



- Arteriovenous loop extension resulted in a 63% *decrease* in the odds of venous thrombosis and a 27% *decrease* in the odds of free flap failure when compared to venous graft extensions (P<0.05)
- Arterial graft extension resulted in a 25% *decrease* in the odds of venous thrombosis and a 19% *decrease* in the odds of free flap failure when compared to venous graft extensions (P<0.05)

