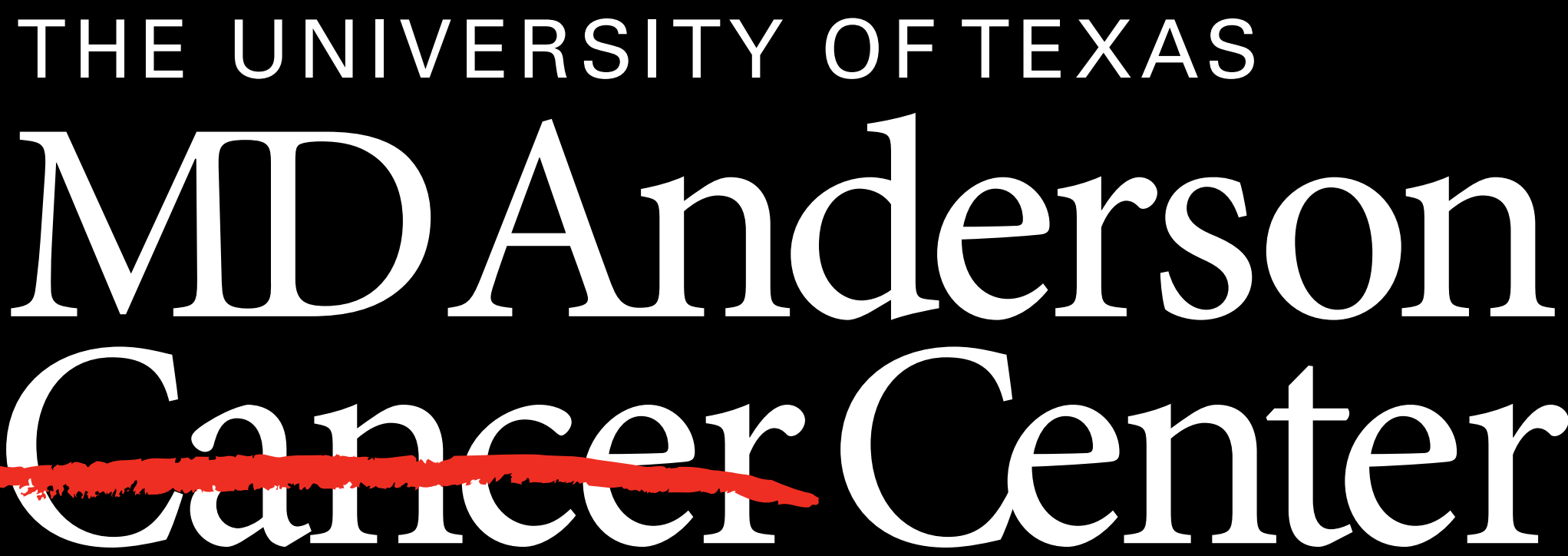




Reconstructing Soft Tissue Sarcoma Patients: Tumor Bed Excision Defects are Deceiving and Result in Higher Reoperation Rates

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Purpose

Soft Tissue Sarcomas (STS) may be misdiagnosed and/or inadequately resected, leaving behind microscopic disease that necessitates a secondary Tumor Bed Excision (TBE). Little is known about these patients’ course and outcomes given the rarity of centers treating them.

Methods

We retrospectively analyzed reconstructed cases from 2016 to 2021, comparing TBE to mass excisions (ME). Demographics, tumor characteristics, oncological treatment, reconstructive techniques, and outcomes were included. Parametric and non-parametric comparisons were employed as appropriate.

Results

In contrast to STS ME, TBE patients were mostly females, had shorter hospital stays, longer follow-up periods, and a higher rate of plastic surgery involvement ($p<0.05$). The two groups differed significantly in sarcoma locations, pathologies, and defect dimensions, with TBE being smaller than ME ($p<0.05$).

TBE had a significantly greater rates of reoperation (16% vs. 8.5%; $p=0.03$) and graft loss (38.9% vs. 15.6%; $p<0.001$), but overall complications were similar between the groups (39.6% vs. 31.3%; $p=0.13$). Univariate analyses for overall complications in the TBE and ME groups are listed in table 1.

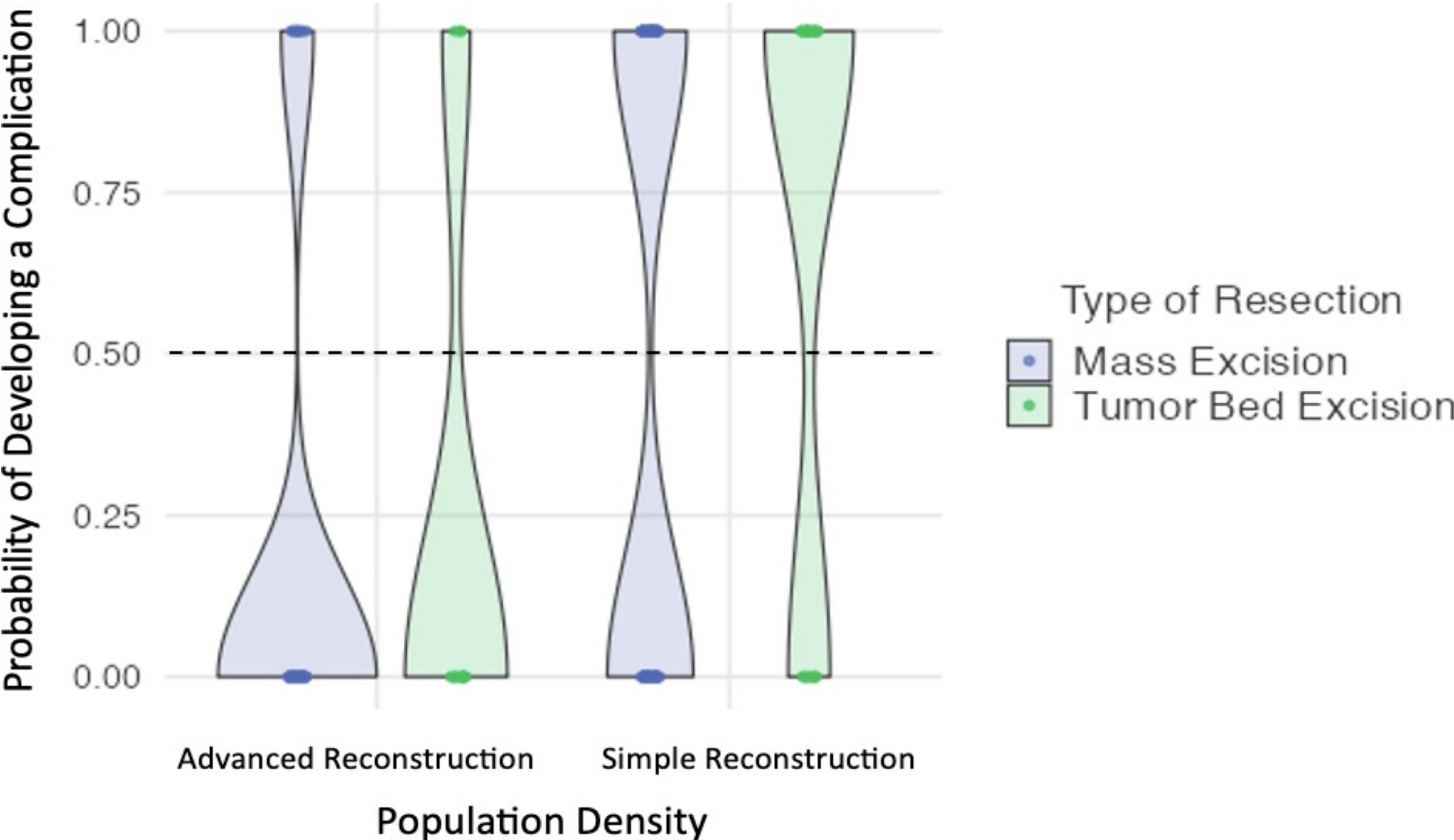


Figure 1. Violin and dots visualization of kernel densities of complications stratified by resection and reconstruction types. Wider violins represent more frequent events.

Conclusions

Although TBE defects are significantly smaller, they have a greater reoperation rate. While both TBE and ME defects stem from STS excisions, our results demonstrate that they are different clinical entities from a wound healing perspective. Plastic surgeons should consider more advanced reconstructive options, especially for TBE defects.

	OR (95% CI)	p
Tumor Bed Excision (n=106)		
Male	2.3 (1.05-5.1)	0.03
Medial thigh	5.7 (1.7-19.2)	0.002
Local Flap	3.5 (1.1-11.2)	0.03
Full Thickness Skin Graft	3.5 (1.1-11.2)	0.03
Pedicled Flap	0.3 (0.12-0.89)	0.02
Free Flap	0.2 (0.06-0.89)	0.02
Neoadjuvant Chemotherapy	0.08 (0.01-0.66)	0.004
Mass Excision (n=274)		
Tumor Thickness	1.1 (1 – 1.1)	0.005
Medial thigh	2.6 (1.4-4.7)	0.002
Complex Repair	2.8 (1.6-4.9)	0.001
Free Flap	0.38 (0.15-0.96)	0.03
Hypertension	1.8 (1.1-3.1)	0.02
Preoperative Radiotherapy	2.7 (1.3-5.7)	0.005

Table 1. Univariate Analysis for Overall Complications.

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