Distress Trajectories Following Septic and Aseptic Revision Total Joint Arthroplasty

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Takeaway: Septic revision patients are most distressed *before* surgery; by 6 weeks their distress is no different from aseptic revision, screen and support them early.

Introduction

- Psychological distress was evaluated in patients undergoing septic and aseptic revision total joint arthroplasty.
- Distress may change substantially across the perioperative recovery period.
- The Distress Thermometer (DT) provides a 0–10 measure of distress; **DT ≥4** was considered clinically significant.
- We sought to characterize longitudinal distress and identify patients at risk for persistent postoperative distress.

Objective

To compare psychological distress between septic and aseptic revision TJA and to characterize its trajectory, subtype differences, and predictors of clinically significant distress (DT ≥4) over one year.

Methods

- **Prospective, IRB-approved, observational study** of septic and aseptic revision arthroplasty episodes.
- DT collected at **enrollment, 2 wk, 6 wk, 12 wk, 6 mo, and 1yr**; clinically significant distress defined as **DT ≥4**.
- Outcomes evaluated by revision type and surgical subtype.
- Group comparisons used t-tests/chi-square tests; multivariable logistic regression evaluated DT ≥4 at 2 and 6 weeks, with septic-only models for procedure type and IV antibiotic duration.

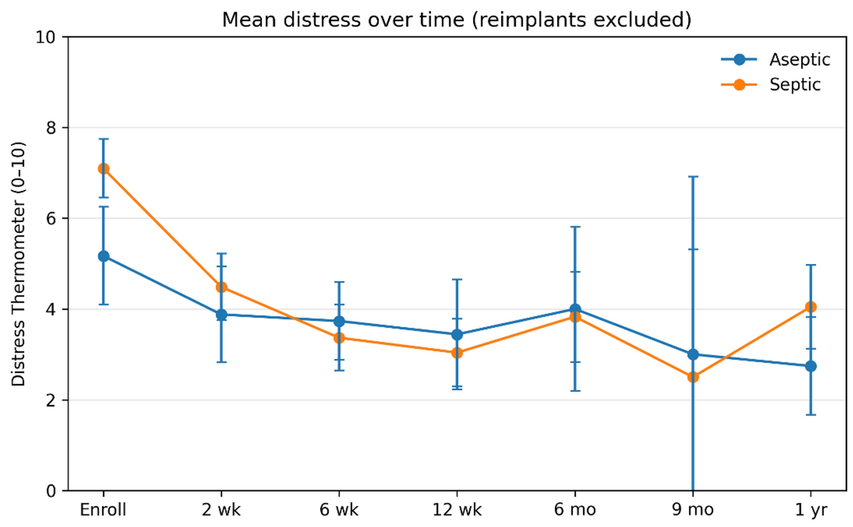

Figure 1. Mean DT declined in both groups, with initially greater distress in septic revisions and convergence by 6–12 weeks.

Baseline Characteristics	Aseptic	Septic	p-value
N	35	80	
Age, years	66.1 (10.7)	65.1 (10.0)	0.630
Female, n (%)	20 (57.1%)	36 (45.0%)	0.319
Joint			
Hip	13 (37.1%)	31 (38.8%)	
Knee	21 (60.0%)	42 (52.5%)	
DT at enrollment	5.17 (3.26)	6.67 (2.98)	**0.023**
DT ≥4 at enrollment, n (%)	23 (65.7%)	65 (81.2%)	0.117

Results

- At enrollment, septic revisions had greater distress than aseptic revisions (mean DT 6.67 vs 5.17; p=0.023)
- At 2 and 6 weeks, mean DT and the proportion with DT ≥4 were not significantly different between groups (all p>0.25), with convergence by 6–12 weeks.
- Revision type was not an independent predictor of DT ≥4 at either postoperative time point.
- In the septic-only model, female sex was associated with DT ≥4 at 2 weeks (OR 4.02, 95% CI 1.07–15.17; p=0.040); prolonged IV antibiotic therapy was not associated with early distress.

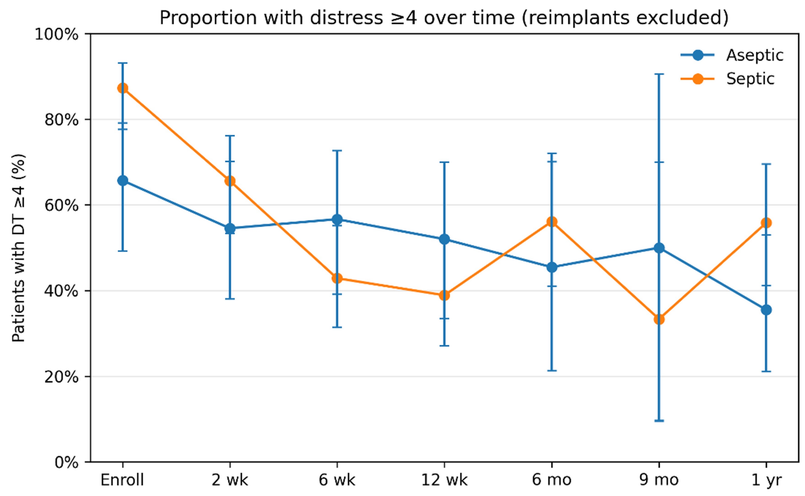

Figure 2. Clinically significant distress was more prevalent preoperatively in septic revisions; postoperative proportions were similar between groups.

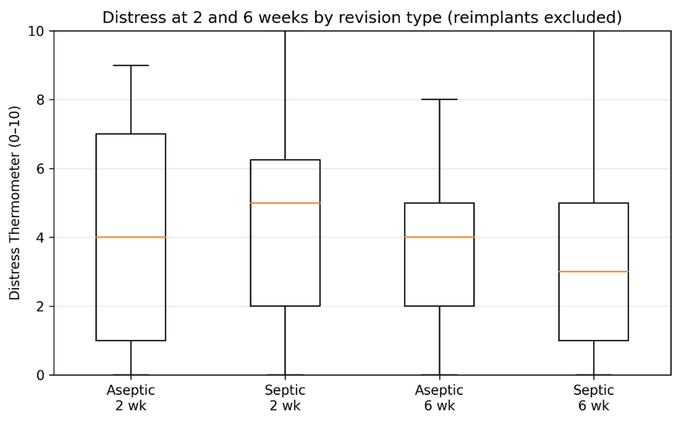

Figure 3. DT distributions were comparable between septic and aseptic revisions at 2 and 6 weeks.

- **Limitations:** Single-center cohort with attrition across follow-up. Several septic-subtype cells are small; septic-only predictors (including female sex) are hypothesis-generating and unadjusted for multiplicity. Observational design precludes causal inference.

Conclusions

- Septic revision patients experience markedly greater distress preoperatively, but postoperative distress becomes comparable with aseptic revision.
- Revision type was not independently associated with clinically significant distress at 2 or 6 weeks, and prolonged IV antibiotic therapy did not increase early distress.
- Routine behavioral health screening may help identify and support patients with persistent distress during revision arthroplasty care.