THE ROLE OF SURGICAL DRESSING IN TOTAL JOINT ARTHROPLASTY:
LEVEL 1 RANDOMIZED CLINICAL TRIAL

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INTRODUCTION

Wound complications following total joint arthroplasty (TJA) are common. Reported wound complications, e.g. wound healing and blister rates, have been reported in up to 30% of TJA patients. Wound complications can lead to increased hospital stay, and are a known risk for periprosthetic infection. There is a paucity of literature reporting the role of surgical dressing type in minimizing wound complications. The purpose of this study was to compare the use of an occlusive antimicrobial dressing vs our standard surgical dressing in TJA.

METHODS

262 primary total hip and knee patients were randomized to either an occlusive antimicrobial surgical dressing or a standard surgical dressing. All wounds were closed in identical standard fashion. Dressings were changed per standard protocol or as needed. Outcomes included wound complications (blisters, maceration, prolonged healing etc), frequency of dressing changes, and patient satisfaction.

Figure 1: Standard Surgical Dressing

Figure 2: Occlusive Antimicrobial Dressing

Figure 3: Well-healed Incision

Figure 4: Postoperative Wound Complication

RESULTS

There was a significant (p=0.015) reduction in wound complications with the occlusive antimicrobial dressing compared with the standard dressing (Table 1 and Table 2). There was also a significant (p<0.001) reduction in the number of dressing changes in the occlusive antimicrobial dressing vs the standard dressing (0.14 vs 2.8 changes, respectively; Table 3). Patient perception of hygiene and sterility was improved with the occlusive antimicrobial dressing compared to our standard surgical dressing (Table 3). No patients in Occlusive group required readmission or return to OR for wound complications vs 2 in Control group (p=0.13). A higher proportion of patients in the control group (7%) required additional wound care (non admission) than patients (4%) in the occlusive group (p=0.27).

CONCLUSIONS

Wound complications and healing problems are associated with superficial and deep surgical site infections following TJA. The use of an occlusive antimicrobial surgical dressing showed a significant reduction in the number of wound complications, number of dressing changes (wound exposure to environment) and patient perception of sterility and hygiene was improved. Occlusive antimicrobial surgical dressing can play a role in preventing and promoting uneventful wound healing following TJA in addition to diminishing environmental exposure of the wound and improving patient satisfaction.

Table 1:
Frequency and Proportion of Wound Complications

Wound Complication			
	No	Yes	P-value
Dressing Type			
Occlusive	127 (90%)	14 (10%)	0.015
Standard	95 (78%)	26 (22%)	

Table 2:
Frequency and Proportion of Skin Blisters

Blister Complication			
	No	Yes	P-value
Dressing Type			
Occlusive	140 (99.3%)	1 (0.7%)	0.026
Standard	114 (94%)	7 (6%)	

Table 3:
Means and Standard Deviations

	Occlusive	Standard	P-value
No Dressing Changes			
	0.14	2.8	0.0001
Pain			
	14.25	11.11	0.55
Patient Satisfaction			
	92	81	0.0001

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