Incidence of Allergic Contact Dermatitis to Dermabond Prineo in Total Joint Arthroplasty

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INTRODUCTION:

Wound complications in total joint arthroplasty put patients at high risk of possible prosthetic joint infections. Surgeons continue to investigate what the best materials are to use for skin closure to minimize wound complications and potential infections. The Dermabond Prineo skin closure system combines a chemical liquid adhesive and polyester mesh directly over the wound to form a waterproof microbial barrier. Allergic contact dermatitis (ACD) has been reported in the literature as a complication of Prineo use. Previous studies have shown that the incidence of ACD with Prineo use in orthopedic surgery ranges from 0.5 to 2.5%. The purpose of this study is to investigate the incidence of Prineo associated ACD in total joint arthroplasty at a high-volume tertiary referral center.

METHODS:

Retrospective chart review of patients undergoing primary total hip arthroplasty (THA) or total knee arthroplasty (TKA) at a single tertiary referral institution from October 2021 through November 2023, with one primary surgeon.

RESULTS:

One hundred and eighty-six TKA and 154 THA procedures were performed utilizing Prineo for skin closure. Overall incidence of ACD associated with Prineo Dermabond was 4.7% (16/340). Incidence of ACD in TKA was 4.8% (9/186) and 4.5% (7/154) in THA. All skin reactions were recognized at first post-operative visit. Patients were treated with a combination of medications including topical and/or oral steroids, oral antihistamines, and oral antibiotics, though there was no one regimen used for all patients. All skin reactions resolved at the time of 2nd post-operative visit. None of the patients with ACD have yet developed PJI or required surgical intervention for wound complications.

DISCUSSION AND CONCLUSION:

Allergic contact dermatitis is a known complication of Prineo use. These reactions can sometimes be very severe and appear similar in nature to a prosthetic joint infection. Previous studies have indicated that the incidence of these reactions is between 0.5% and 2.5%. Our data indicate a slightly higher incidence of 4.7%. While these incidents appear concerning, they predictably can be treated with routine use of steroids, antihistamines, and antibiotics. There is no evidence of increased risk of PJI in patients that had a Prineo reaction.

	Suspected Dermabond Prineo Reactions (N = 16)	Number of Days Until Symptom Resolution
Treatment		
Topical Corticosteroids	3 (18.8%)	16.7 ± 27.5
Oral Corticosteroids	8 (50.0%)	26.5 ± 27.6
Both Topical and Oral Corticosteroids	4 (25.0%)	24.0 ± 36.7
No Corticosteroids	1 (6.2%)	11 ± 0
Additional Treatment		
Oral Antihistamines	7 (43.8%)	
Oral Antibiotics	9 (56.2%)	