DERMABOND™ PRINEO™

Study Stats

Can hospitals improve economic efficiency without compromising outcomes by using DERMABOND™ PRINEO™ Skin Closure System instead of traditional closure following sternotomy for cardiac surgery?

A first-of-its-kind, large, retrospective cohort study compared clinical and economic outcomes of DERMABOND PRINEO System vs skin sutures with waterproof wound closure[1]

Kiaii B, Johnston S, Jang S, Elangovanraaj N, Tewari P, Chen B. Clinical and economic outcomes after sternotomy for cardiac surgery with skin closure through 2-octyl cyanoacrylate plus polymer mesh tape versus absorbable sutures plus waterproof wound dressings: a retrospective cohort study. *J Cardiothorac Surg*. 2022;17(1):212.

CONCLUSION[1]

This propensity-matched observational study of 10,676 cardiac patients showed similar incidences of wound complications with DERMABOND PRINEO System and skin sutures with waterproof dressing, but **DERMABOND PRINEO System showed a significant association with shorter length of stay and lower total hospital-borne costs.**

- Patients undergoing median sternotomy post-cardiac surgery are **particularly susceptible** to wound complications[1]
- **Successful closure of the skin layer is critical** to promote optimal healing of the sternal wound[1]

METHODS

Patient selection[1]

- The Premier Healthcare Database provided 18,676 cardiac surgery patient requiring sternotomy
- 7,901 were closed with DERMABOND PRINEO System
- 10,775 were closed with traditional skin suture and waterproof dressing

Propensity score matching[1]

- Patients were matched to adjust for baseline differences on 68 variables, resulting in 5,338 patients in each group
- Criteria included patient demographics and clinical, procedure, and hospital characteristics

Analysis[1]

- Outcomes were compared between groups using bivariate multilevel mixed-effects generalized linear models

DERMABOND™ PRINEO™ Skin Closure System

n=5,338[1]

VS

Sutures with Waterproof Dressing Group

n=5,338[1]

OBJECTIVES[1]

Primary Outcome

- 60-day cumulative incidence of diagnosis for **wound complications**

Secondary Outcomes

- Index admission hospital **length of stay** (LOS)
- Total hospital-borne **costs**
- **Discharge** to home
- 60-day cumulative incidences of inpatient **readmission and reoperation**

RESULTS[1]

Compared to skin sutures and waterproof wound dressing in cardiac surgery sternotomy, DERMABOND PRINEO System was associated with

IMPROVEMENTS	
1.4 days shorter length of stay (9.2 vs 10.6; *P*<0.0001)	**$10,353 lower hospital-borne charges** ($50,173 vs $60,526; *P*<0.0001)

SIMILAR RESULTS			
60-day wound complication rate (3.47% vs 3.47%; *P*=0.996)	**60-day inpatient readmission rate** (12.59% vs 13.64%; *P*=0.354)	**60-day reoperation rate** (10.07% vs 10.31%; *P*=0.808)	**Rate of discharge to home** (77.18% vs 75.08%; *P*=0.254)

DERMABOND PRINEO System offers advantages traditional skin suture closures do not

- DERMABOND PRINEO System is a noninvasive alternative to skin sutures and staples[2]*
- Flexible microbial barrier protection proven 99% effective against organisms commonly responsible for SSIs[3,4]†‡

For complete indications, contraindications, warnings, precautions, and adverse reactions, please reference full package insert.

*Deep dermal stitches required.
†Challenge organisms included *Staphylococcus epidermidis*, *Escherichia coli*, *Staphylococcus aureus*, *Pseudomonas aeruginosa*, and *Enterococcus faecium*.
‡As seen in vitro at 72 hours.

References: 1. Kiaii B, Johnston S, Jang S, Elangovanraaj N, Tewari P, Chen B. Clinical and economic outcomes after sternotomy for cardiac surgery with skin closure through 2-octyl cyanoacrylate plus polymer mesh tape versus absorbable sutures plus waterproof wound dressings: a retrospective cohort study. *J Cardiothorac Surg*. 2022;17(1):212. **2.** DERMABOND™ PRINEO™ Skin Closure System Instructions for Use. May, 2017. Ethicon, Inc. **3.** Su W. Study Report for in vitro evaluation of microbial barrier properties of Dermabond® Protape. 06TR071. December 4, 2006. Ethicon, Inc. **4.** Shapiro A, Dinsmore R, North J. Tensile strength of wound closure with cyanoacrylate glue. *Am Surg*. 2001;67:1113-1115.

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