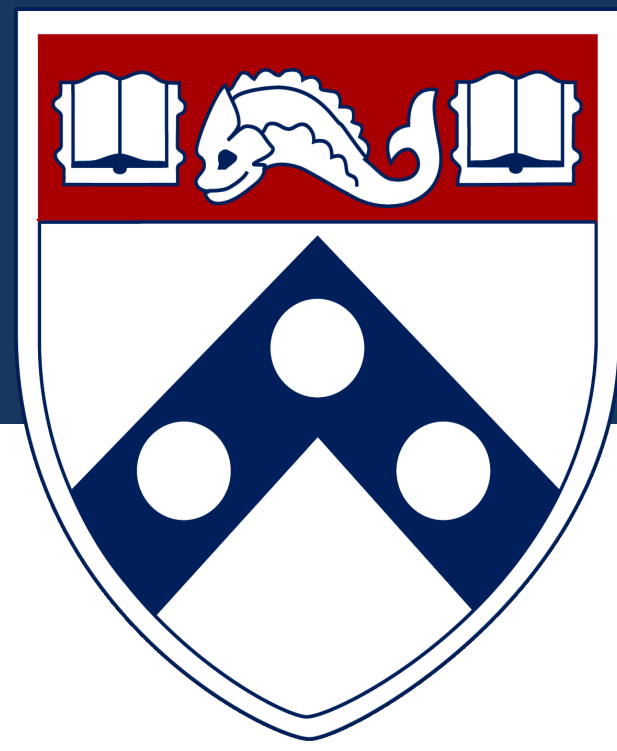




Use of Sternal Talon; an 11-year two surgeon experience



Charles C. Jehle, MD¹, Marten N. Basta, MD², Andrew Antia, MD³, Detlev Erdmann, MD³, L. Scott Levin, MD, FACS^{1,2}

¹ University of Pennsylvania Department of Orthopaedic Surgery, ² University of Pennsylvania Department of Surgery, Division of Plastic Surgery, Philadelphia, PA, USA

³Duke University Department of Surgery, Division of Plastic Surgery, Durham, NC, USA

Introduction

- 760,000 median sternotomies per year in the United States
- Sternal closure is usually performed with simple wiring.
- Patients with a sternal non-union or nickel allergy may require alternate fixation.
- The Sternal Talon is a relatively new method of sternotomy closure that uses rigid fixation.
- The device provides the compressive and locking forces for optimal fixation.
- Long term data from the use of this device is sparse.



Figure 1. (A) Sternal Talon device from above showing locking mechanism. (B) Lateral image.

Methods

- An IRB-approved retrospective chart review between 2010-2021.
- Patient history, indication for sternal Talon, and perioperative information was collected.
- Primary outcomes included:
 - Subjective pain relief
 - Chest wall stability
 - Evidence of sternal union
 - Postoperative complications

Results

Table 1. Patient Demographics and Procedures	
Variable	Number of patients (%)
Study Cohort	27 (100)
Average age	64.1y
Male sex	19 (70.4)
Hypertension	23 (85.2)
History of failed sternal recon	2 (7.4)
Diabetes mellitus	8 (29.6)
COPD	5 (18.5)
Smoking Status	
Current	4 (14.8)
Former	16 (59.3)
Never	7 (25.9)
Indication for initial sternotomy	
CABG	21 (77.8)
Valve replacement	4 (14.8)
Heart transplant	1 (3.7)
Pulmonary embolectomy	1 (3.7)
Number of Talon devices placed	
1	3 (11.1)
2	5 (18.5)
3	15 (55.6)
4	3 (11.1)

CABG = coronary artery bypass grafting; COPD = chronic obstructive pulmonary disease

Results (cont.)

Table 2. Outcomes	
Variable	Number of patients (%)
Study Cohort	27 (100)
LOS	6.0d
Follow Up	
mean	44.2mo
median	8.4mo
Postop Complications	
Wound Infection	3 (11.1)
Re-operation	3 (11.1)
Hematoma	1 (3.7)
Seroma	0 (0)
Sternal Nonunion	0 (0)
90 day mortality	2 (7.4)

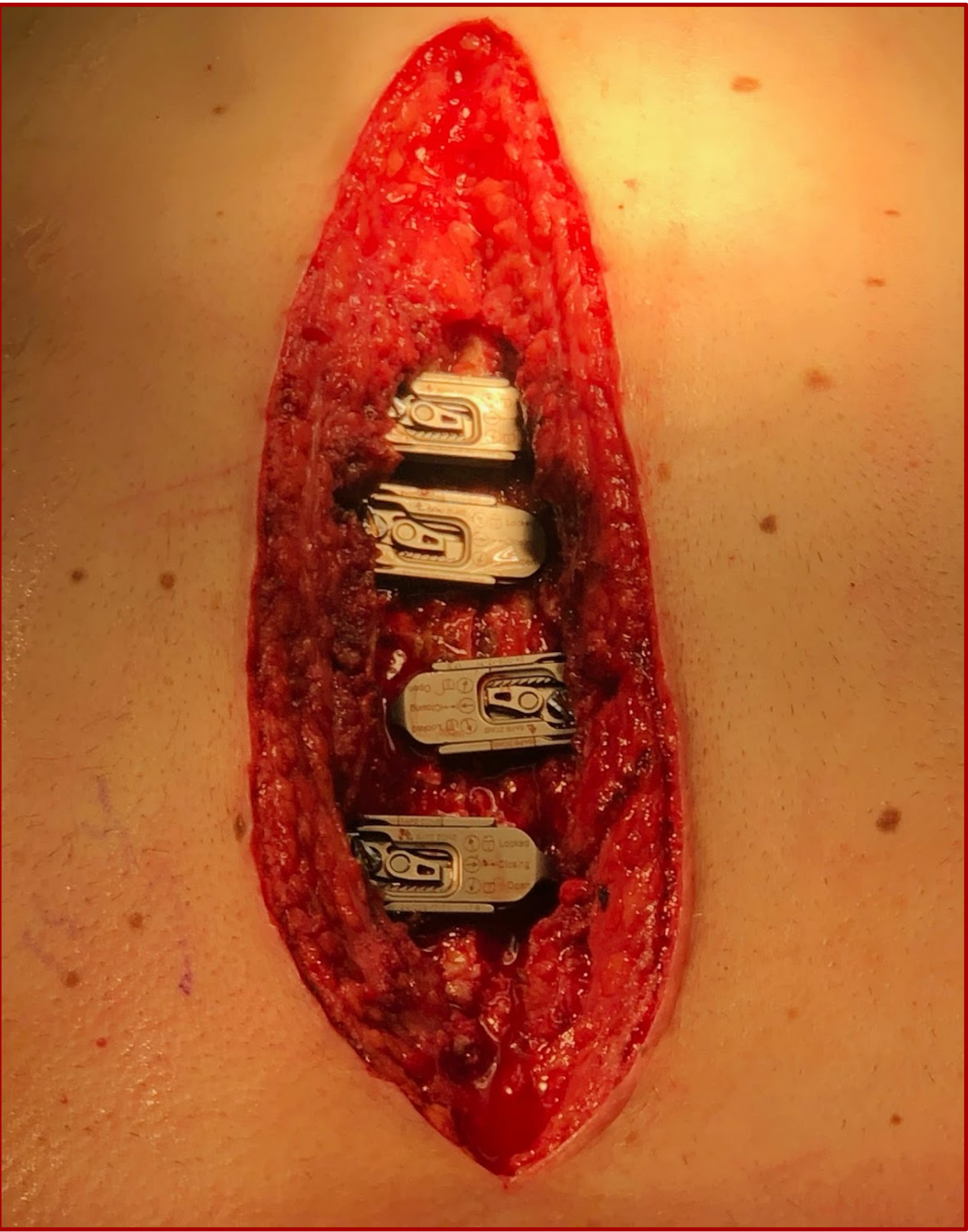


Figure 2. (A) Sternal Talon devices in situ

Discussion/Conclusions

- Secondary closure of patients with sternal non-union is challenging.
- Sternal Talon is on method for achieving fixation.
- Most of these patients progressed well and did not require further intervention after the placement of the Sternal Talon.
- Overall, a 15% complication rate was observed
- The last 11 years at our institution use of the Sternal Talon device, while rare, has been a reliable method of achieving sternal union with an acceptable side effect profile.