Making anterior hip wounds a thing of the past

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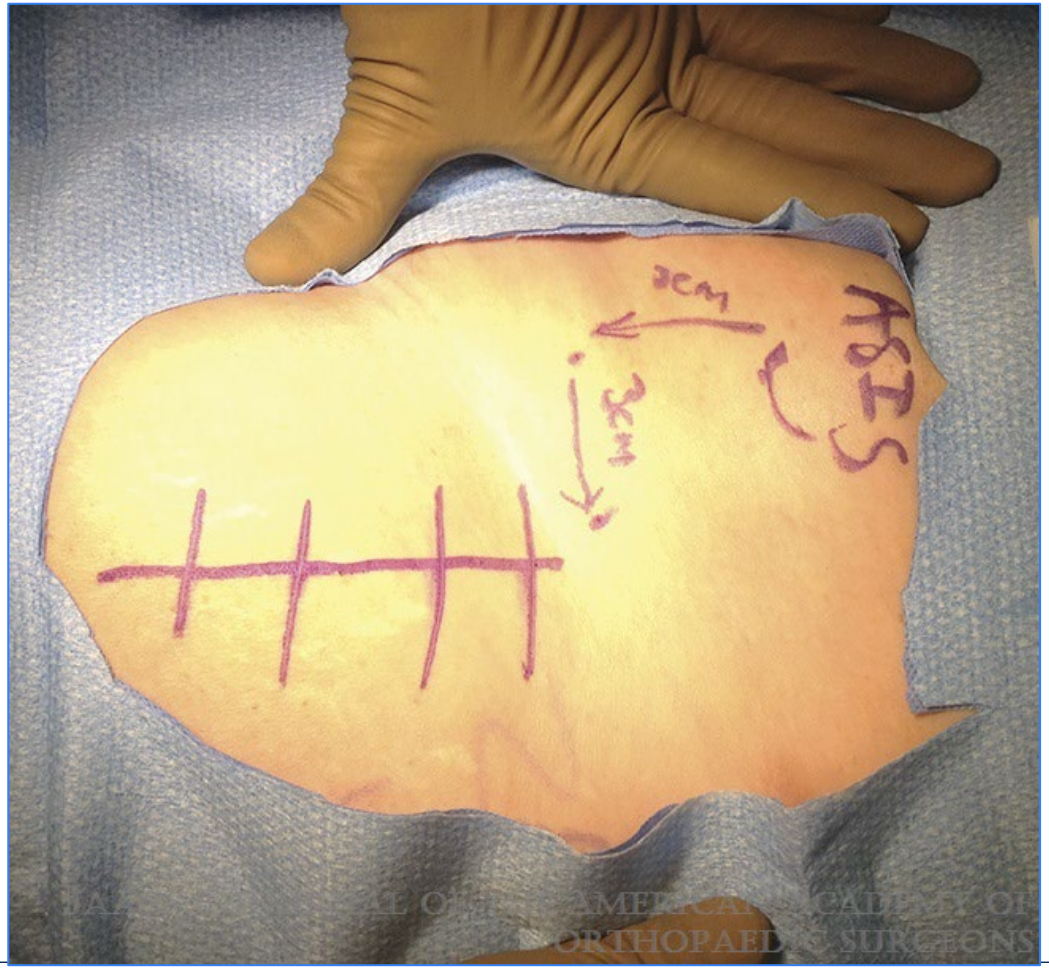
Disclosure

- Editorial Board, Journal of Arthroplasty

5 Strategies to Prevent Wound Complications

Direct Anterior Approach Total Hip Arthroplasty



Direct Anterior Approach for Total Hip Arthroplasty: Indications, Technique, and Results
Post, Zachary D.; Orozco, Fabio; Diaz-Ledezma, Claudio; Hozack, William J.; Ong, Alvin
JAAOS - Journal of the American Academy of Orthopaedic Surgeons22(9):595-603, September 2014.
doi: 10.5435/JAAOS-22-09-595

Clinical photograph demonstrating markings for the skin incision.

Typically, the incision is begun approximately 3 cm distal and 3 cm lateral to the anterior superior iliac spine (ASIS), depending on the patient's size and body habitus.

Incision and Initial Exposure

Start the incision approximately 2-3cm distally and 2-3cm lateral to the ASIS and extend distally, slightly oblique and centered over the belly of tensor fascia lata (TFL) muscle. The incision length varies based on body build and commonly ranges from 8 to 14 cm. A reverse oblique, or “bikini” type skin incision can also be used in selected patients. (Image 1)

Palpate the Anterior Superior Iliac Spine (ASIS) under the skin proximally to reconfirm the location of the insertion site of the TFL at the ASIS. The TFL fascia will be incised lateral to the ASIS in line with the TFL fibers (Image 2). Utilize Volkmann’s or Hibbs type retractors to retract the superficial incision edges medially and laterally for visualization of the midsection of the TFL, which can also be identified by the direction of its fiber.

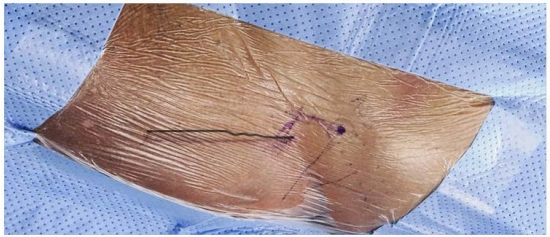


Image 1 View of Left hip. Head on Right, Foot on Left. Dot is ASIS. Incision marked 2cm distal and lateral to ASIS.

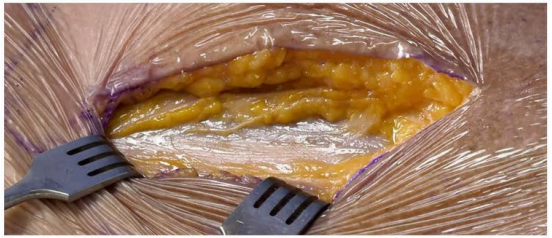


Image 2 View of tensor fascia centrally with superficial fat layers retracted.

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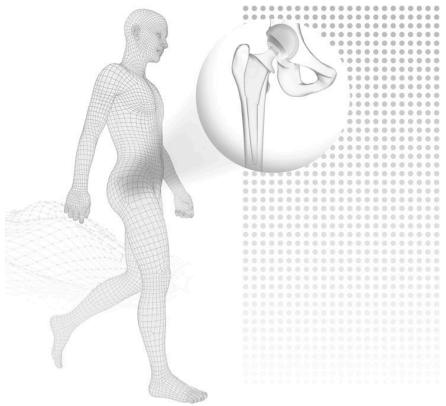
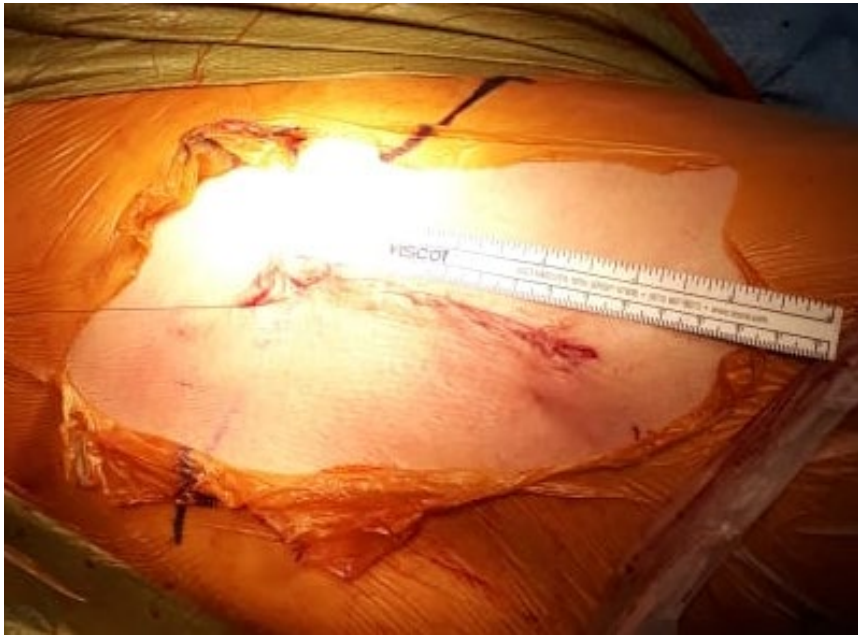
ANTERIOR ADVANTAGE™

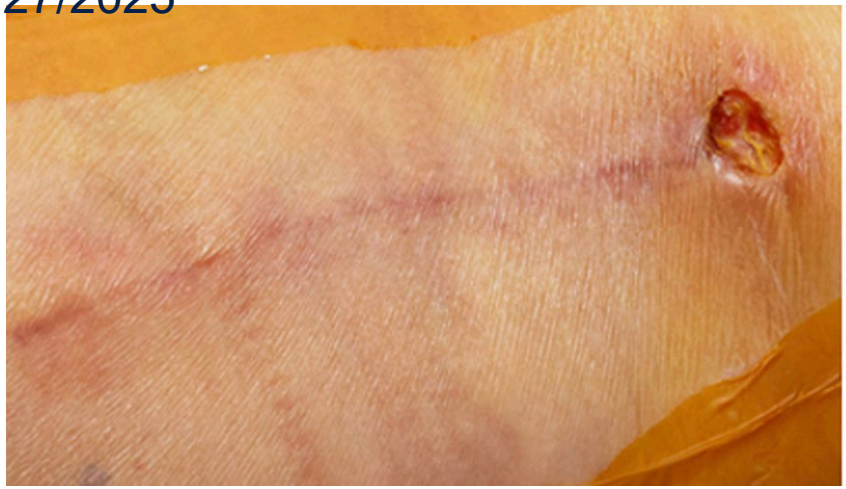
Standard Table

Surgical Technique



- I haven’t written how to manage a wound that looks like this at the end of the case to avoid that 2 week PO issue





Contents lists available at ScienceDirect

The Journal of Arthroplasty

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Greater Prevalence of Wound Complications Requiring Reoperation With Direct Anterior Approach Total Hip Arthroplasty

Christian P. Christensen, MD, Tharun Karthikeyan, MD, Cale A. Jacobs, PhD

Lexington Clinic, Lexington, Kentucky

The Journal of Arthroplasty 30 (2015) 2296–2298

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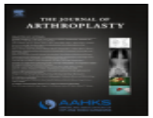

High Risk of Wound Complications Following Direct Anterior Total Hip Arthroplasty in Obese Patients

Chad D. Watts, MD, Matthew T. Houdek, MD, Eric R. Wagner, MD, Peter K. Sculco, MD, Brian P. Chalmers, MD, Michael J. Taunton, MD

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Original Research Article

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Are there more wound complications or infections with direct anterior approach total hip arthroplasty?

Christophe Tissot[1], Matthias Vautrin[1], Anais Luyet[2] and Olivier Borens[1]

DAA facts related to the wound

With the technique that I use…

- Delayed wound healing can range from 2 to 6%.
  - Notably, the rate increases to 16% in obese patients (body mass index over 30), a statistically significant difference compared to non-obese patients

Manrique, JOA 2019

DAA vs PL:
Reoperations due to wound complications

Autor	DAA	PL	Difference	Favors
Christensen, 2014	505	1288	1.4% vs 0.2%	PL
Watts, 2015	716	3040	1.7% vs 1.9%	Equal
Tissot, 2018	399	796	0.7% vs 0.7%	Equal

Overview: Some Prevention Strategies

1. Patient Optimization
2. Precise Incision Localization
3. Incision Choice
4. Soft Tissue Management & Surgical Technique
5. Evidence-Based Postoperative Care

Strategy 1: Patient Optimization

- **Key Evidence:**

• BMI ≥40 kg/m²: 6.4x higher risk of periprosthetic joint infection Wilson, JBJS 2024

• Morbid obesity: 8.1% vs 1.2% superficial wound infection rate Abrgyrou, Bone Joint Open 2022

- **Implementation:**

✓ Preoperative weight optimization when feasible

✓ Optimize diabetes, smoking cessation, nutrition

GLP-1.

75K surgeries in 21K patients (Ann Surg 2025)

ORIGINAL ARTICLE

Association of Perioperative Glucagon-like Peptide-1 Receptor Agonist Use and Postoperative Outcomes

Seth Z. Aschen, MD, MBA, Ashley Zhang, BSE,† Gillian M. O'Connell, MD,† Sophia Salingaros, BA,* Caroline Andy, MS,‡ Christine H. Rohde, MD, MPH,† and Jason A. Spector, MD*✉*

TABLE 4. Analysis of Adjusted Relative Risk of Primary and Secondary Outcomes in Propensity Score-matched Cohort

Outcome	Adjusted relative risk ratio (95% CI)	Baseline risk	*P*	NNT (95% CI)
Dehiscence within 6 mo	0.711 (0.577, 0.877)	0.013	**0.0014**	266 (203, 391)
Infection within 6 mo	0.966 (0.768, 1.22)	0.008	0.769	—
Hematoma within 6 mo	0.440 (0.216, 0.894)	0.001	**0.0232**	1786 (652, 2416)
Bleeding within 6 mo	0.915 (0.695, 1.20)	0.005	0.529	—
Readmission within 30 d	0.883 (0.789, 0.987)	0.039	**0.0285**	219 (191, 257)

Bold values are statistical significance.

Strategy 2: Precise Incision Localization

- **Problem:**

• Inaccurate incision placement leads to proximal skin maceration

• Need for intraoperative extension may increases wound problems

- **Solution - Fluoroscopic Mapping:**

✓ Mark saddle/greater trochanter location under fluoroscopy Bascom A Today 2021

✓ Set incision line to avoid skin tension and folds

✓ Use reproducible landmarks vs fixed-distance heuristics

Strategy 3: Incision Choice

- **Leunig's Bikini (Horizontal) Incision Evidence:**
- • Follows Langer's lines (natural skin tension)
- • Lower delayed wound healing: 2.3% vs 6.1%
- • Obese patients: 0% vs 16.6% wound complications Manrique, JOA 2019

UCSF

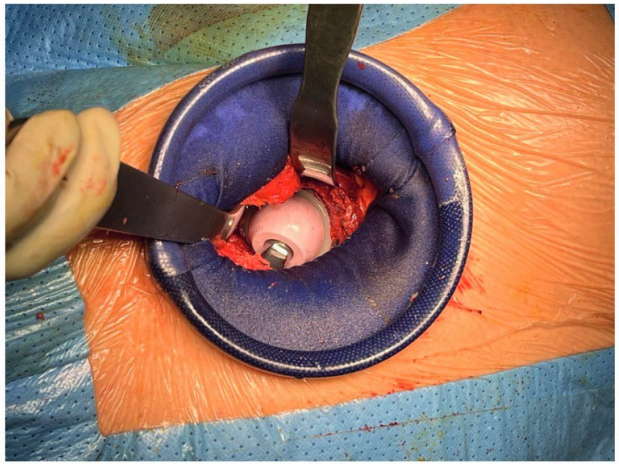
Cautionary Note

Zappley, JOA 2024

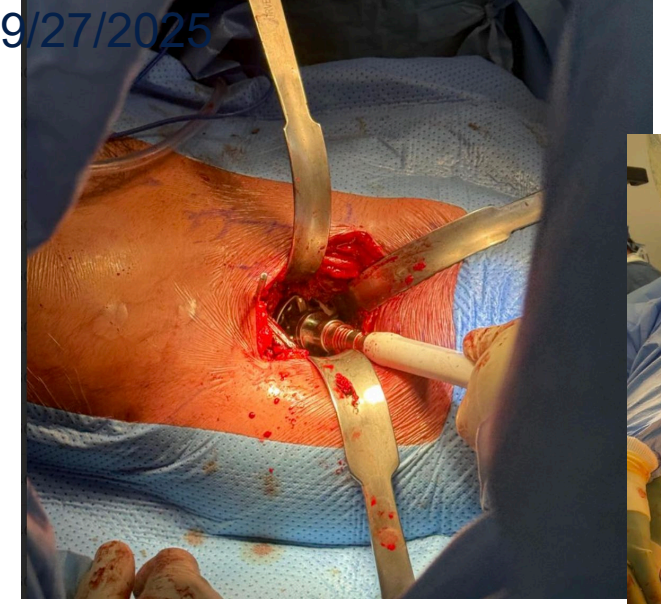
- If you have to do an Early (90 days) revision
- 65 longitudinal vs 9 Bikinis who had early revisions
- 6 over 9 bikinis required a plastic surgeon intervention
  - Extending the original incision
  - Creating a ”T” Incision
  - Additional longitudinal

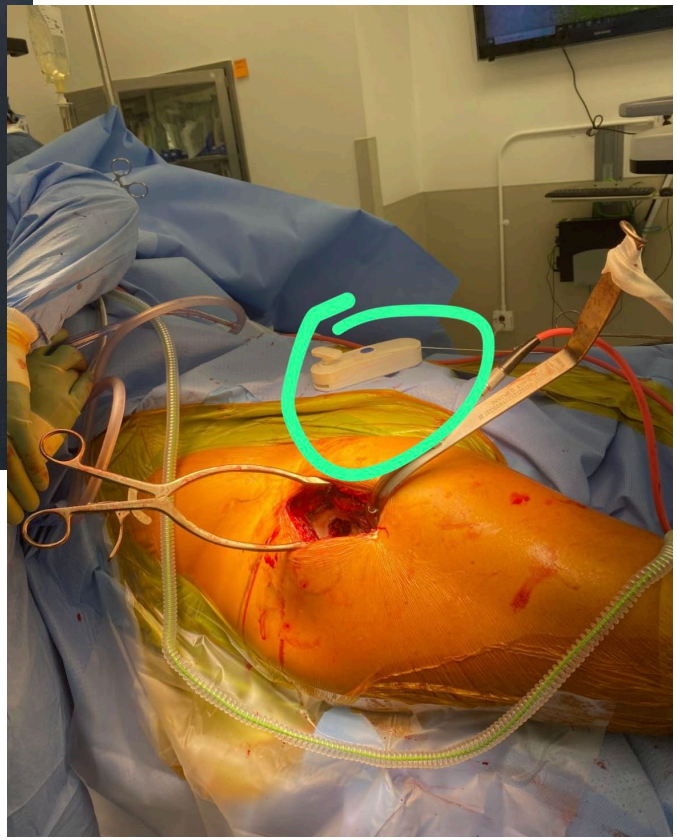
Strategy 4: Soft Tissue Management & Surgical Technique

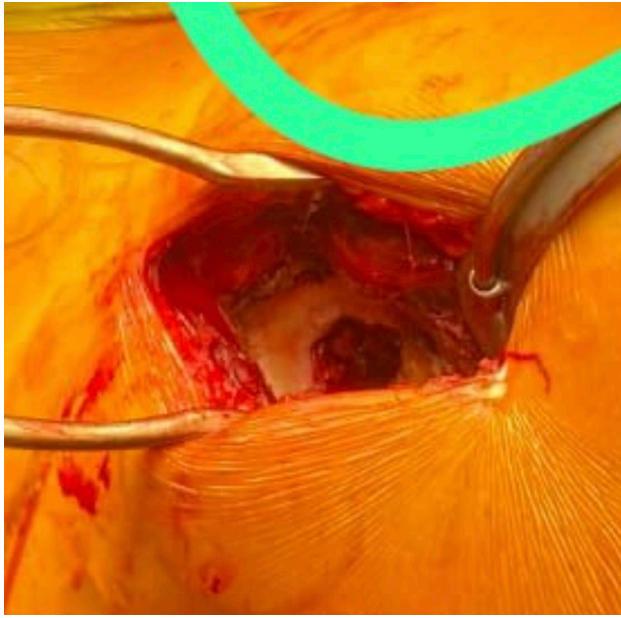
- **Gentle Tissue Handling:**
- • Minimize soft tissue trauma during exposure
- • Use femoral-release-first technique for improved exposure Xiong J Orthop Surg Res. 2023
- • Avoid excessive retraction and tissue devitalization



Randomized study
Wound scores and patient satisfaction with scar appearance were similar between groups. “Our results suggest no improvement in wound cosmesis with use of this retraction device.”
Alvarez-Pinzon, Am J Ortho 2015







Strategy 5: Active Postoperative Care

- **Standard Protocol:**

• Apply sterile dressing with early inspection (Best dressing for DAA?)

• Follow institutional SSI prevention recommendations

• Extended oral antibiotics?, glucose control, normothermia

- **High-Risk Patient Monitoring:**

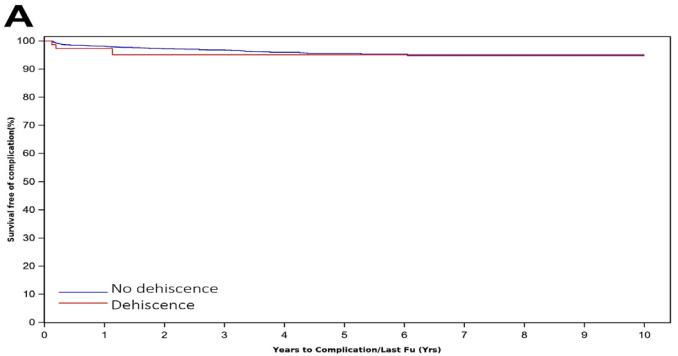
✓ Early follow-up and low threshold for intervention

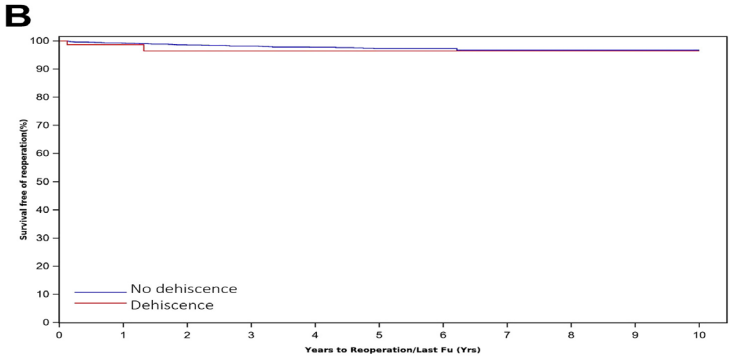
✓ Note: Incisional NPWT not consistently beneficial (P=.42) Tyagi Orthopaedics 2019

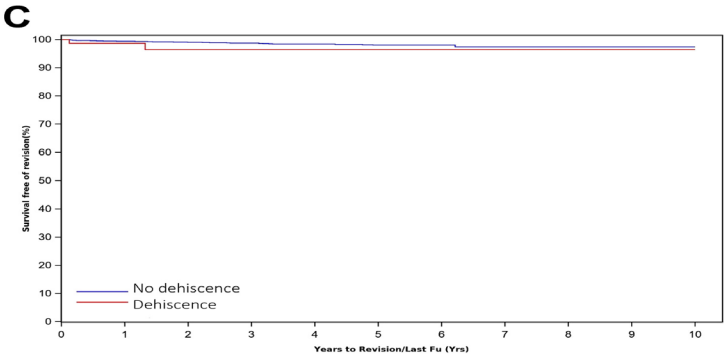
Act rapidly if you have to (don't procrastinate)

- 3,687 patients who underwent a primary DAA THA between 2010 and 2019. Mean FU 4 years

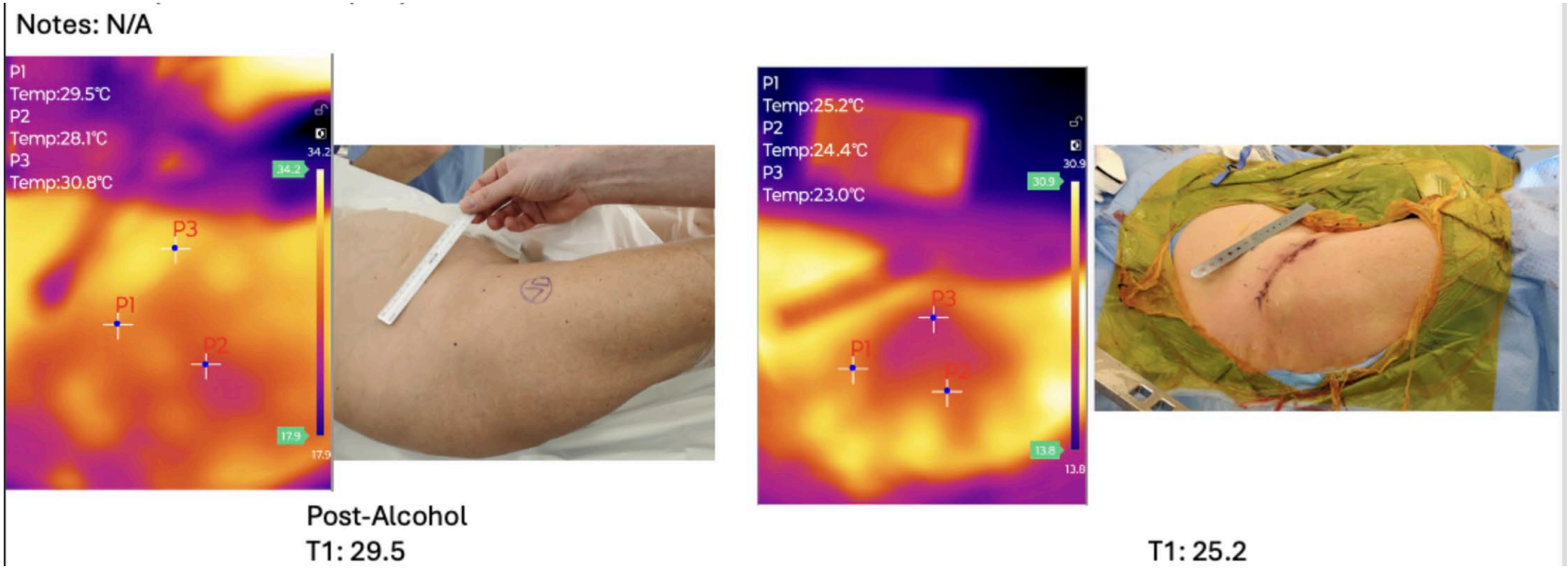
- 98 patients (2.7%) developed a superficial wound dehiscence requiring clinical intervention.
- All occurred early and were noted at a median of 27 days postoperatively (2 to 105 d)
- No higher risk of complications, reoperation or revision


A
Survival free of complication(%)
100
90
80
70
60
50
40
30
20
10
0
0 1 2 3 4 5 6 7 8 9 10
Years to Complication/Last Fu (Yrs)
No dehiscence
Dehiscence


B
Survival free of reoperation(%)
100
90
80
70
60
50
40
30
20
10
0
0 1 2 3 4 5 6 7 8 9 10
Years to Reoperation/Last Fu (Yrs)
No dehiscence
Dehiscence


C
Survival free of revision(%)
100
90
80
70
60
50
40
30
20
10
0
0 1 2 3 4 5 6 7 8 9 10
Years to Revision/Last Fu (Yrs)
No dehiscence
Dehiscence

Ongoing research. (Xiao and cols)



Summary

- DAA is still associated to wound complications in some patients
- Possibly the #1 issue we face…it is not a thing of the past