

## **Conference**

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## **Title**

Skin Complications Following Non-Operative Humeral Fracture — Older Adult After a Fall-Related Injury

## **Authors**

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## **History**

An 85-year-old right-handed male with atrial fibrillation (on apixaban) and atopic conjunctivitis presented after a mechanical fall, which resulted in a left humeral fracture treated non-operatively. Orthopedic surgery recommended non-weightbearing with a Sarmiento brace and sling. Physiatry advised admission to an inpatient rehabilitation facility (IRF). Three days after brace application, new symptoms arose, raising concern for infection or other complications and prompting reevaluation by the physiatrist on-call.

## **Physical Examination**

Physical examination by physiatry revealed diffuse swelling of the left arm, erythema on the dorsal forearm and multiple serous blisters above and below the elbow. Distal neurovascular and strength exam were intact. There was no tenderness or pruritus over the erythematous region, and the patient was afebrile.

## **Differential Diagnosis**

1. Fracture Blisters
2. Contact Dermatitis
3. Deep Vein Thrombosis (DVT)
4. Cellulitis

## **Test and Results**

1. Complete Blood Count (CBC): no leukocytosis
2. Aspiration of blister: sterile serous content elicited
3. DVT ultrasound: deferred (patient anticoagulated with apixaban)
4. Trial of topical corticosteroid: no improvement in erythema

## **Final/Working Diagnosis**

Fracture blisters secondary to shear stress from the Sarmiento brace and inadequate edema management. This case underscores the importance of early edema control and frequent skin assessment during immobilization to prevent skin breakdown and optimize recovery outcomes.

### **Treatment and Outcomes**

1. Sarmiento brace removed; compression wrap was applied from hand to axilla for edema control
2. Ice was applied and the limb was elevated to 90 degrees whenever possible
3. Ruptured blisters were covered with nonocclusive dressings; calcium alginate was used for drainage management
4. Skin integrity and swelling improved over several days, allowing brace reapplication and safe discharge home
5. Following discharge, home health services provided wound care support and coordinated orthopedic follow-up