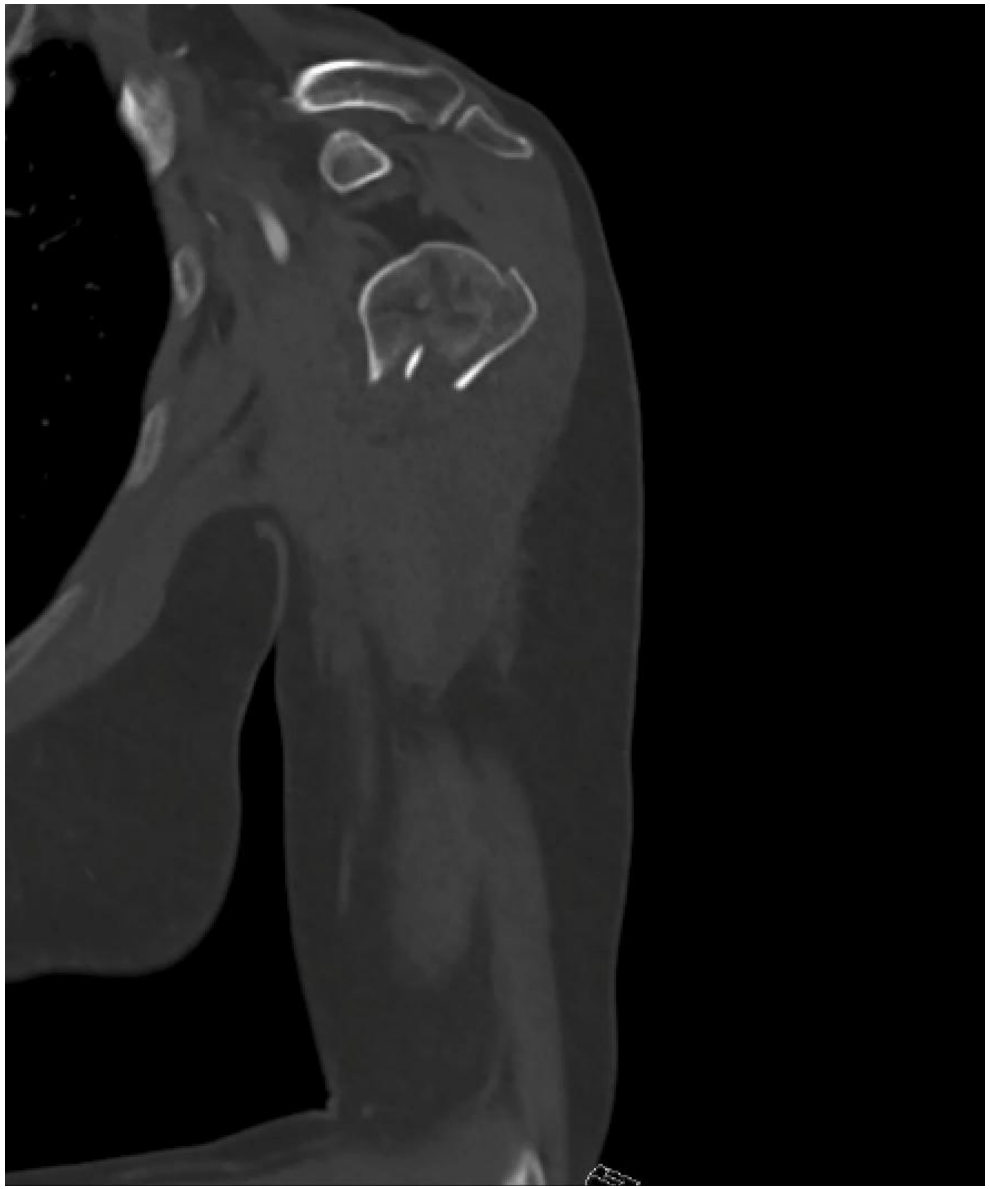
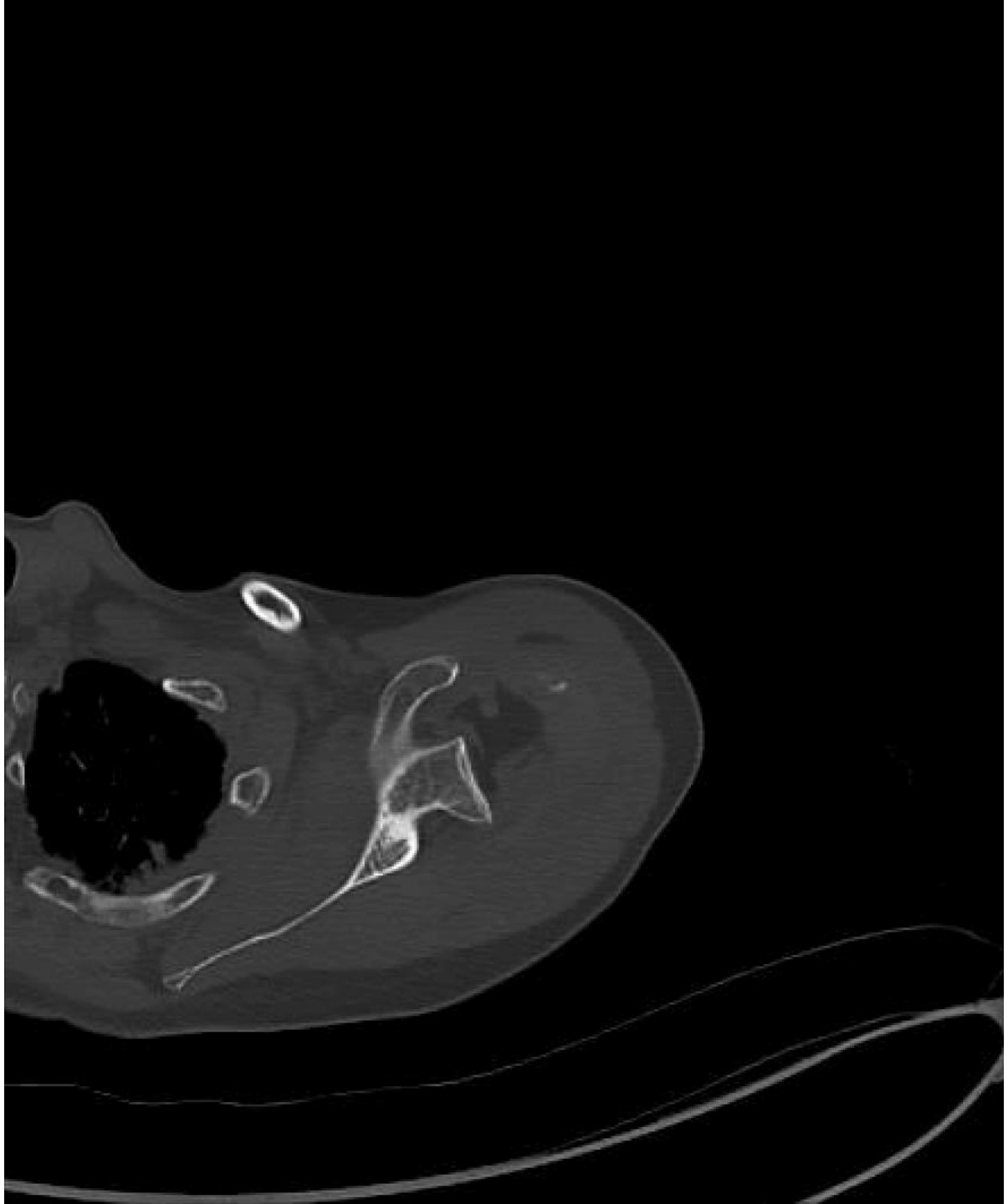
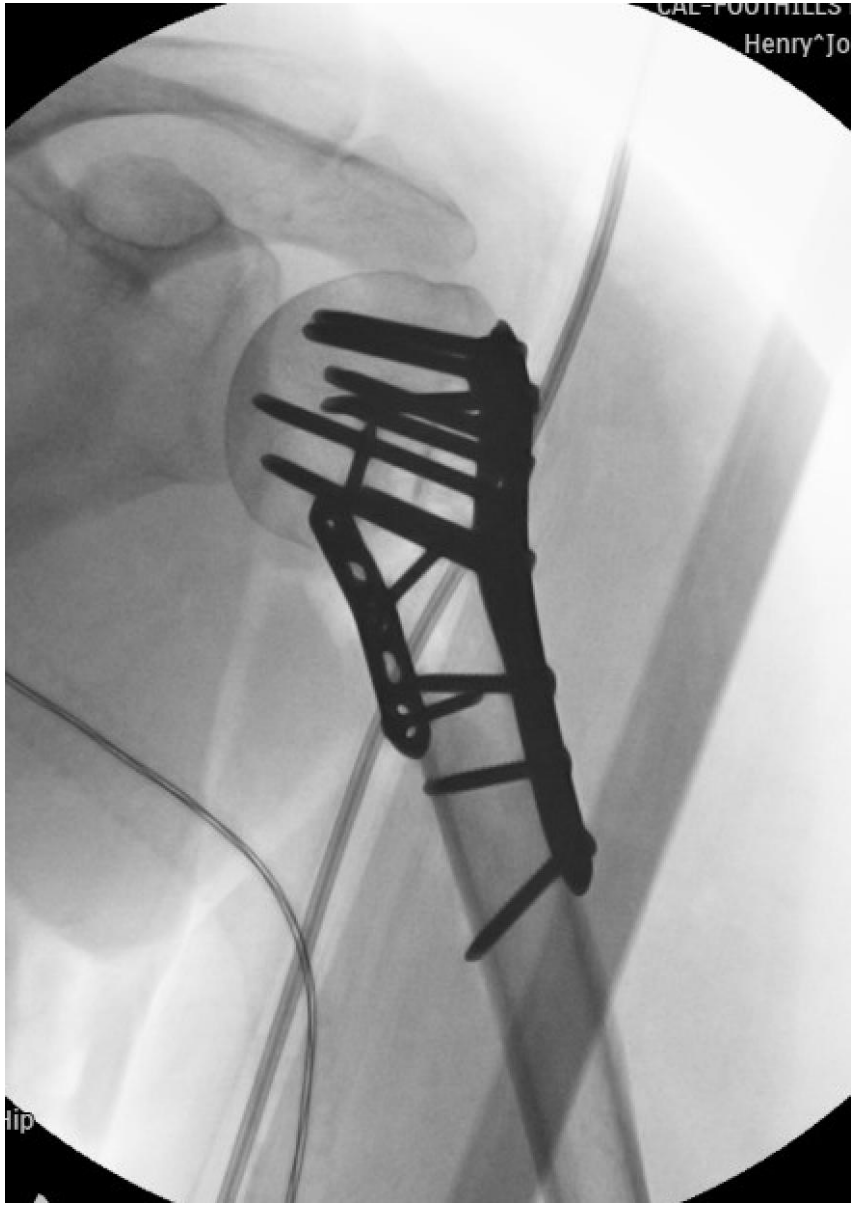
63 y.o female
MVC
Healthy

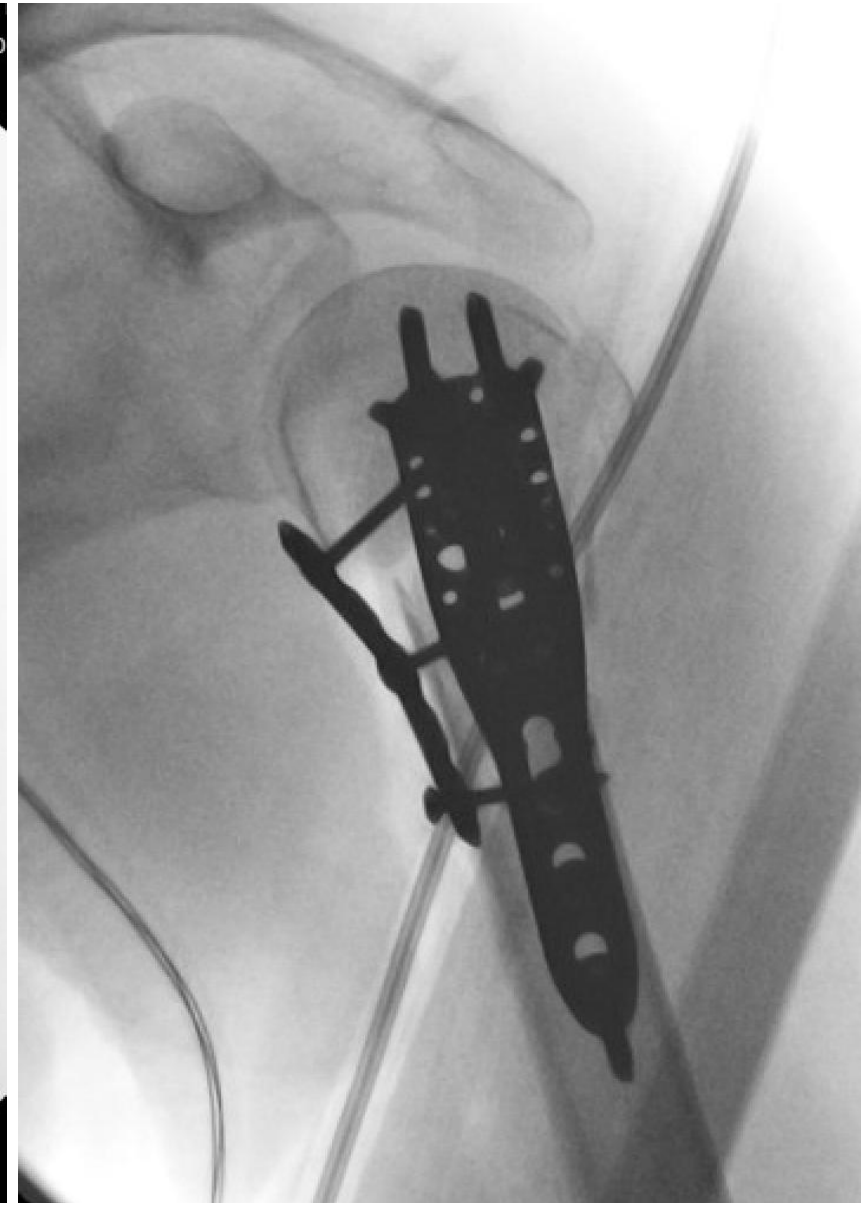
Polytrauma
- Left PHF
- Right Ankle
- Left Hand

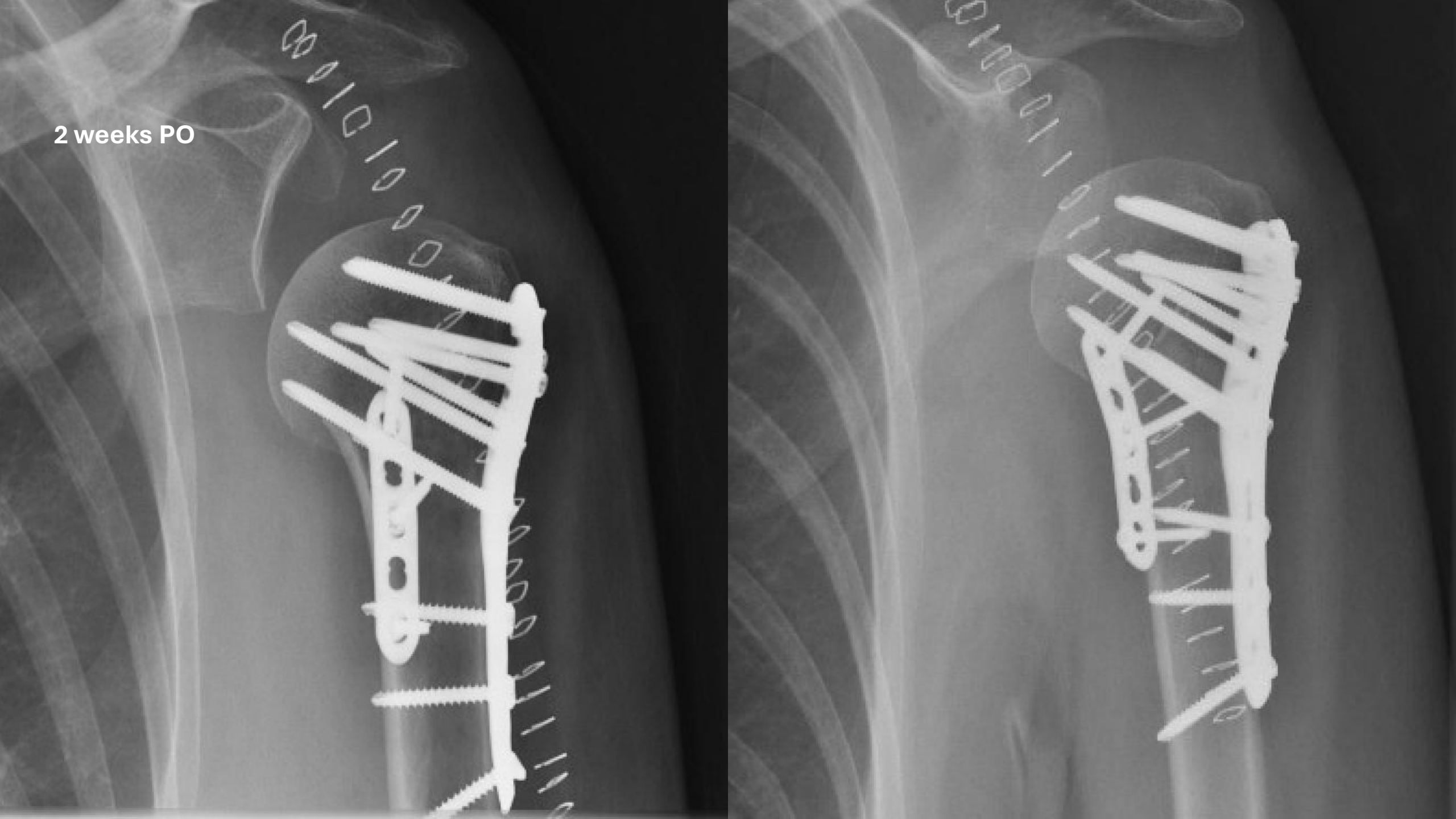


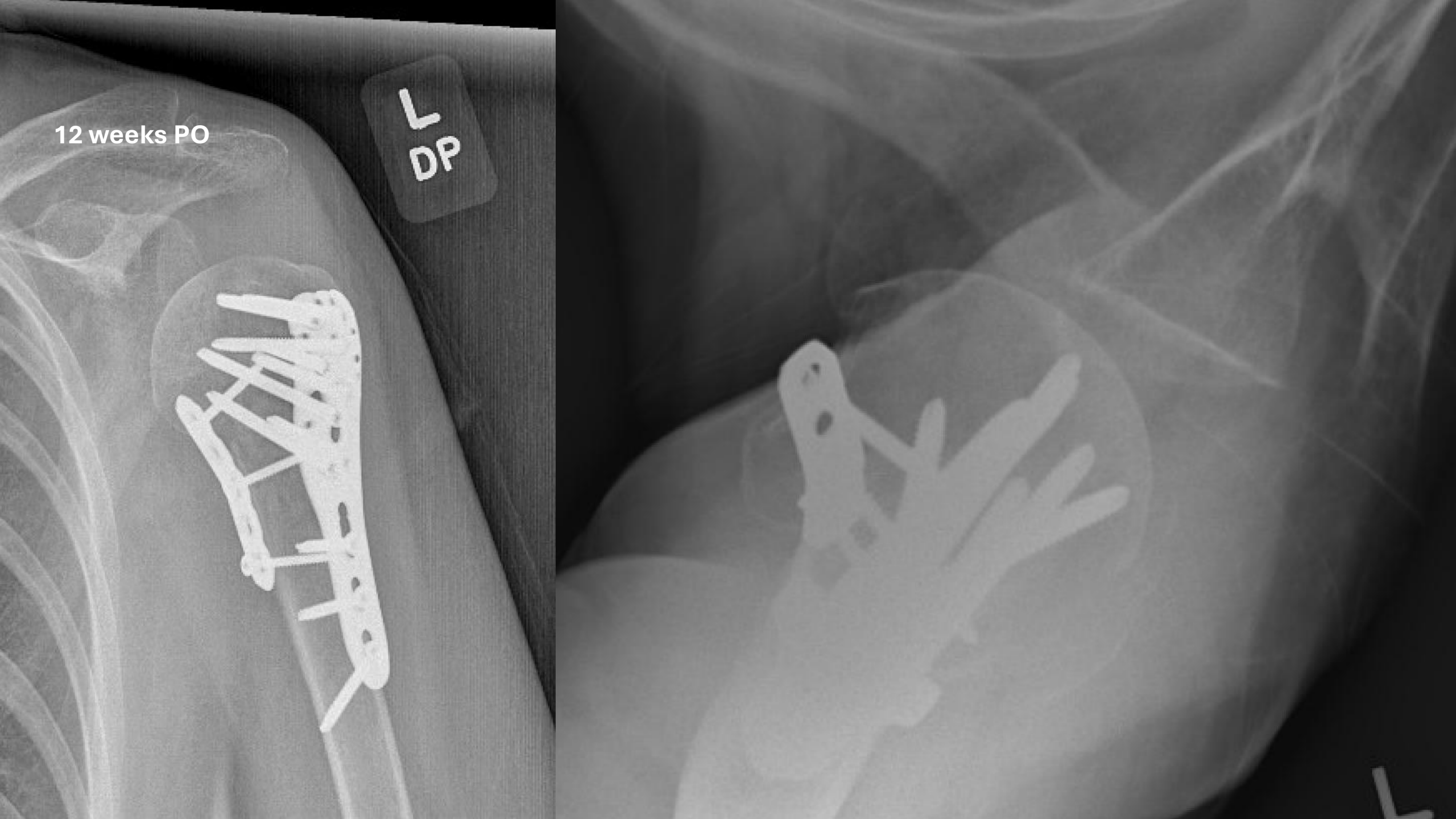


Intraop films

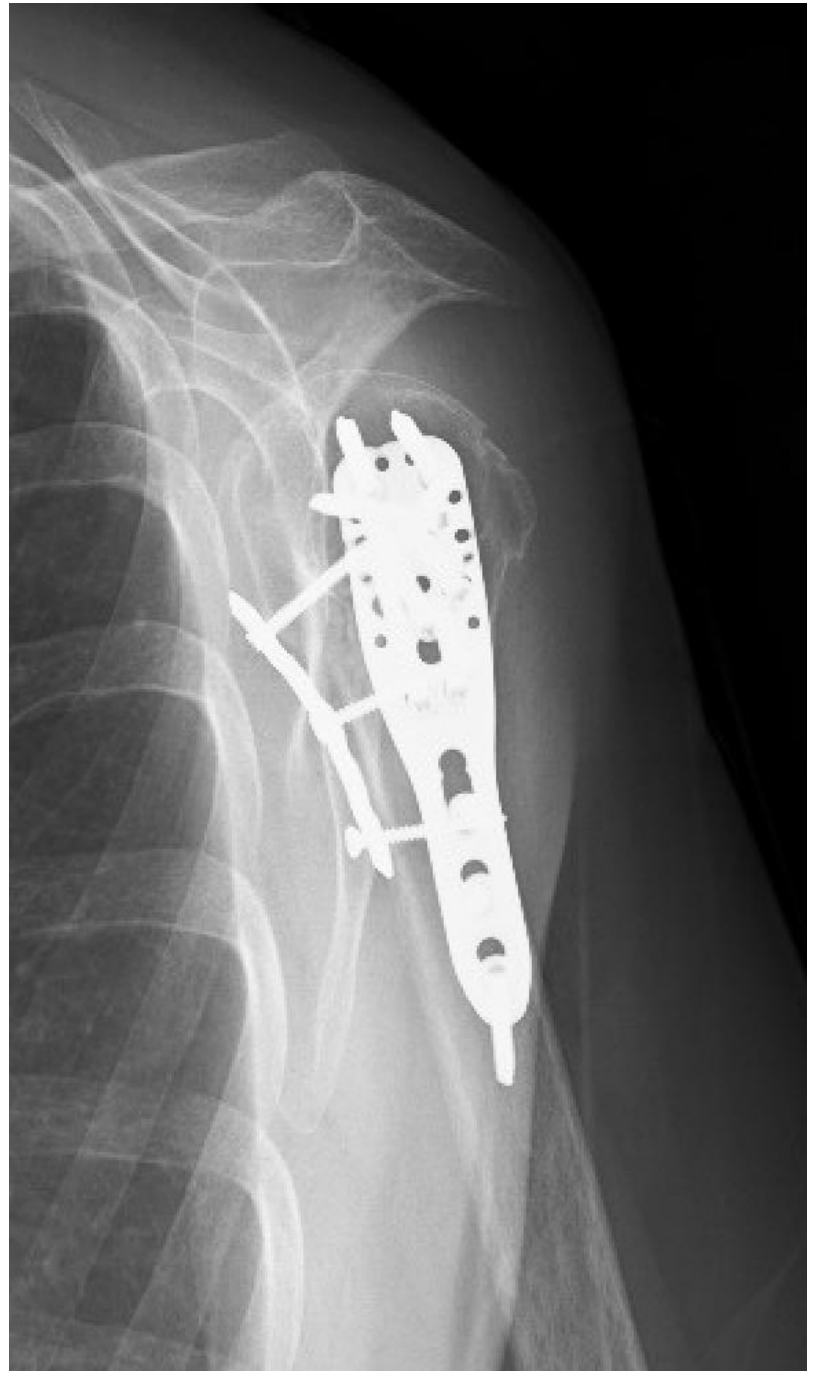





2 weeks PO


12 weeks PO
L
DP


16 weeks PO



Proximal Humerus Fractures With Associated Axillary Artery Injury

Robert Thorsness, MD, Christopher English, MD, Jonathan Gross, MD, Wakenda Tyler, MD, Ilya Voloshin, MD, and John Gorczyca, MD

- Journal of Orthopaedic Trauma, 2014
- **1 intraoperative death**

- **High risk patterns:**
- **2-part surgical neck fractures with medialization of the shaft fragment**
- **3- to 4-part anterior fracture-dislocations**

McLaughlin et al. (1998)

- **84% occurred in patients older than 50 years**
- **53% were associated with brachial plexus injury**
- **21% resulted in upper extremity amputation**

Nerve lesions in proximal humeral fractures

Cornelis P. J. Visser, MD,[a] L. Napoleon J. E. M. Coene, MD,[b] Ronald Brand, PhD,[c] and Denes L. J. Tavy, MD,[b] *Leiderdorp, The Hague, and Leiden, The Netherlands*

- 143 consecutive proximal humeral fractures due to low-velocity trauma using EMG
- **Nerve injury occurred in 67% of all fractures (96 of 143 patients)**
- Non displaced fractures (59%), Displaced fractures (82%)
  - **Axillary nerve: 58% (83 of 143 patients)**
  - **Suprascapular nerve: 48% (69 of 143 patients)**

Humeral head inferior subluxation in proximal humerus fractures

Stefano Carbone[1,2,3] · Matteo Papalia[4] · Valerio Arceri[5] · Stefano Placidi[5] · Andrea Carbone[6] · Riccardo Mezzoprete[5]

- Retrospective study of 150 surgically treated PHF
- Evaluation: Preoperatively, 3 months post op and 12 months post op.
- Preoperative subluxation was present in 11.3% -> 14.6% at 3 months postoperative
- By **12 months, only 7 cases showed persistent inferior subluxation**

Risk factors

- **Preoperative subluxation** correlated significantly with:
  - **Complex fracture patterns** (p=0.045)
  - **Female** (p=0.038)
  - **Age >70 years** (p=0.003)
  - **Obesity (BMI >30)** (p=0.03)
  - **Local osteoporosis** (p=0.002)

Risk factors

- **3-month postoperative subluxation** correlated with:
  - **Female** (p=0.04)
  - **Age >70 years** (p=0.002)
  - **Obesity** (p=0.02)
  - **Pin or screw articular surface perforation** (p<0.001

Risk factors

- **12-month persistent subluxation** correlated with:
  - **Age >70 years** (p=0.032)
  - **Obesity** (p=0.041)
  - **Screw joint perforation**
  - **Lower Constant Score** (p<0.001)

Natural history

- **Spontaneous resolution** of inferior subluxation in most cases (92% by 6 weeks) due to **temporary muscle dysfunction rather than permanent structural damage**

- **Persistent subluxation at 12 months** likely represents either **early avascular necrosis** or **irreversible rotator cuff dysfunction** from severe soft tissue injury or malunion