Geriatric sacral fractures

Does early ORIF improve outcome?

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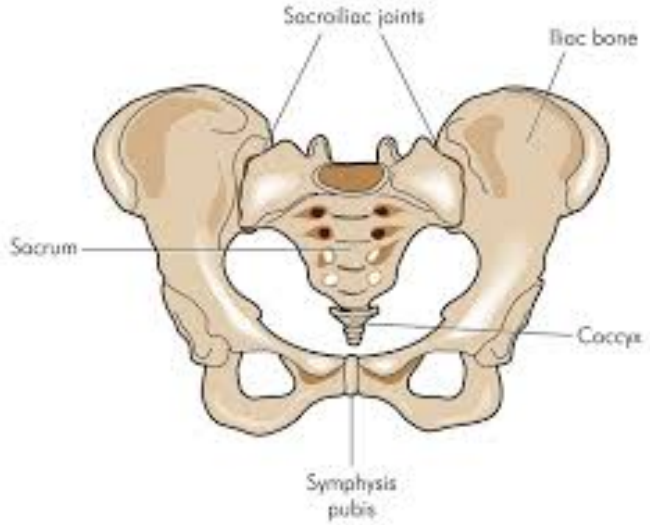
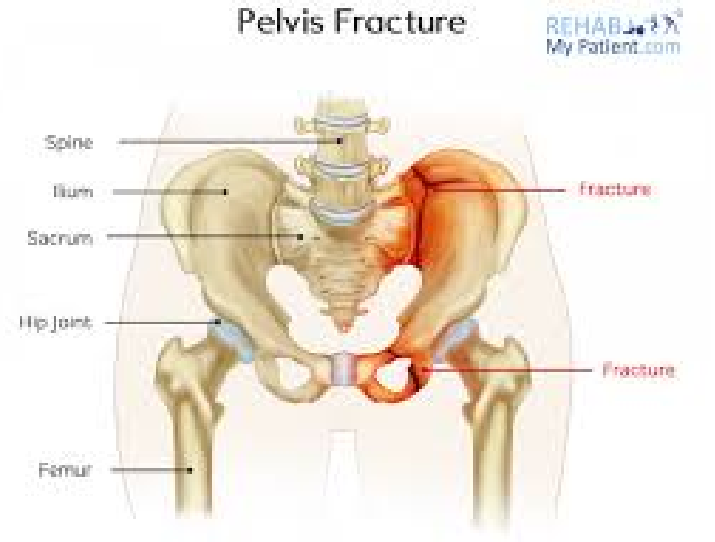
Introduction

- Very common in pelvic ring injuires
  - Occur in 30-40% cases
  - 25% with neurologic deficit
- Very common missed injury
  - 75% without neurologic injury
  - 25% with neurologic injury



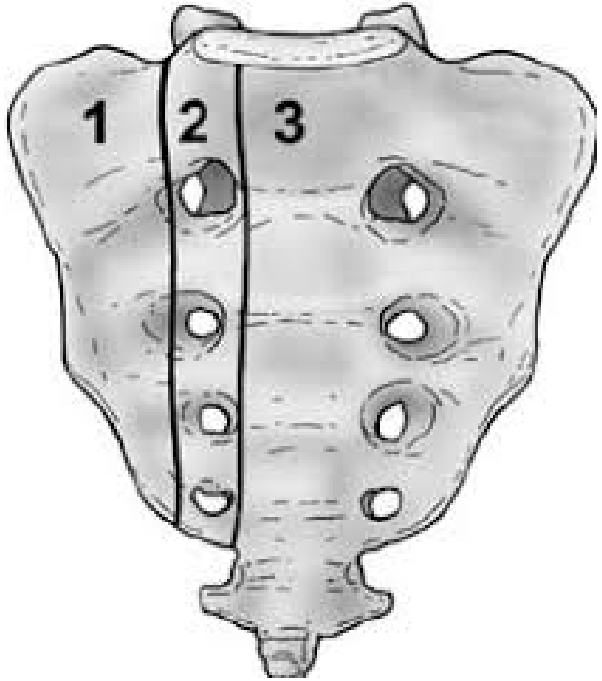
- High vs low energy mechanisms
  - In younger patients – higher energy
  - Geriatric patients – insufficiency fractures usually from low energy falls

- Usually associated with pelvic ring injury
- Neurologic injury
  - L5 nerve root
  - S1-S4 sacral foramina
  - S2-S5
    - Loss of sphincter tone
    - Saddle anesthesia

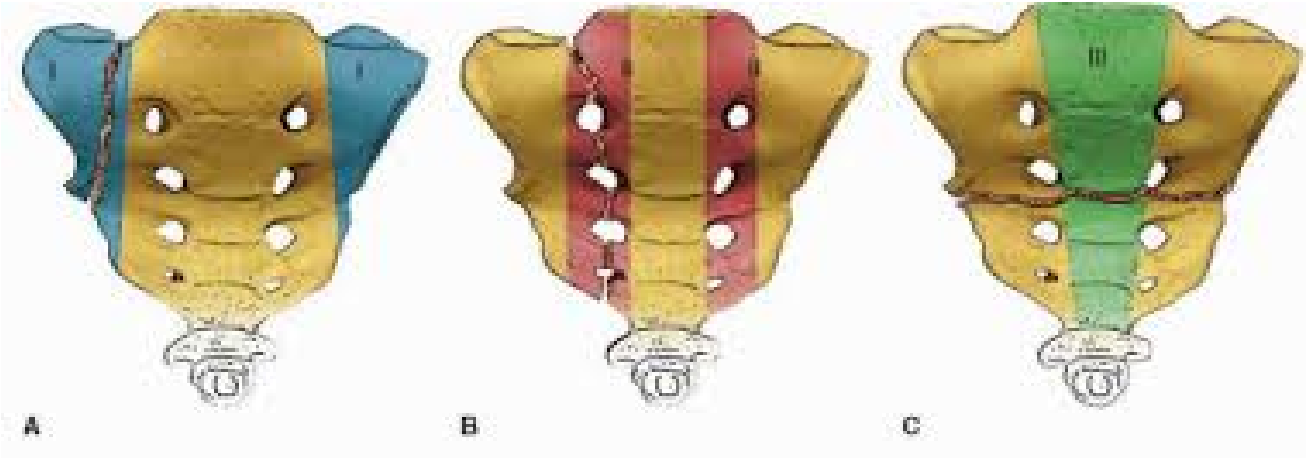


Denis classification

- Denis Classification
  - Zone 1- most common, L5 nerve root at risk
  - Zone 2- highest risk for nonunion, poor functional outcome
  - Zone 3- neurologic injury

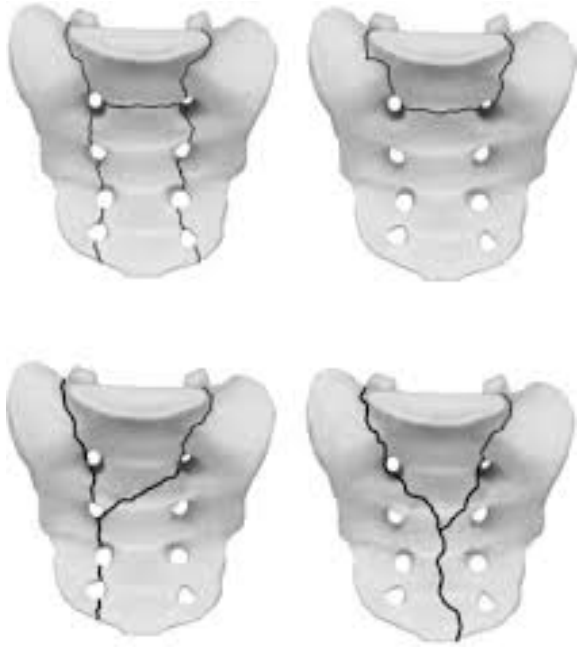


Denis classification

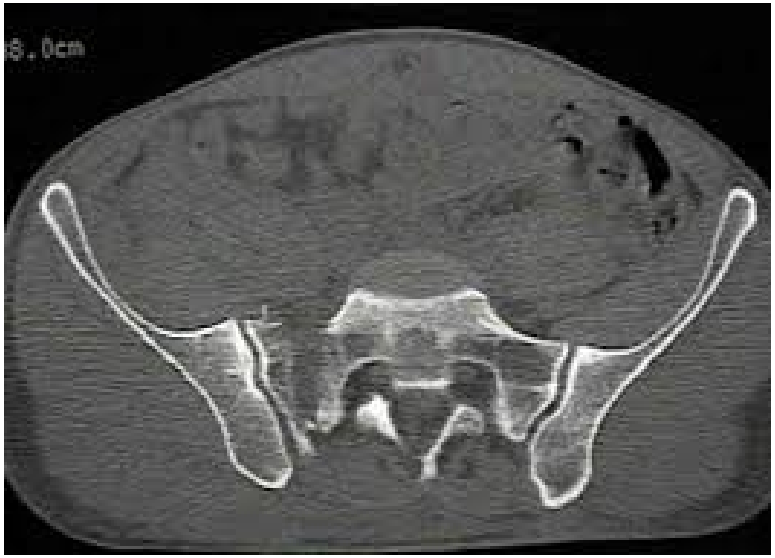


Specific facture patterns

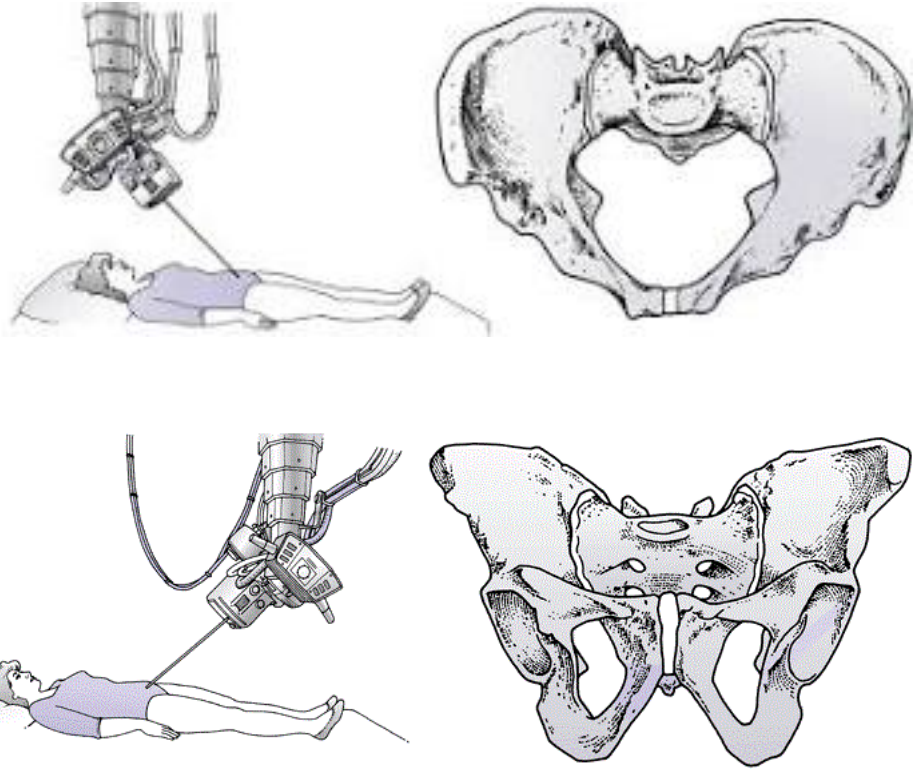
- H type
- U type
- Lambda fracture patterns



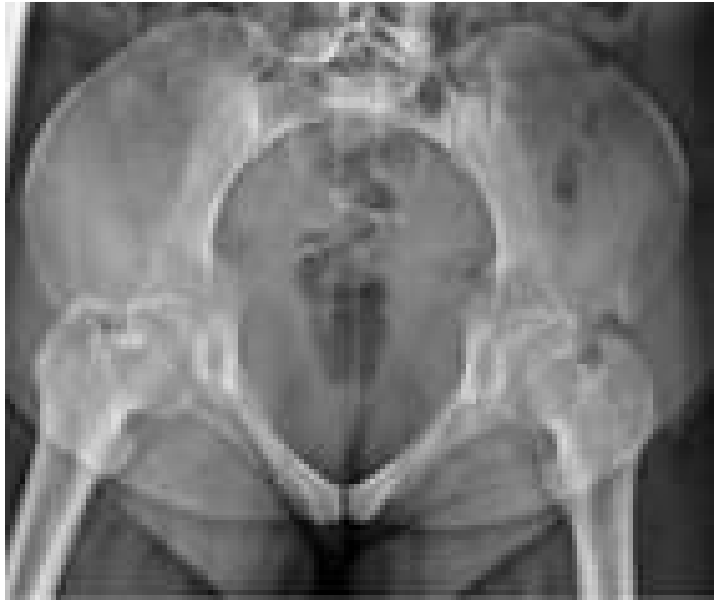
- Lower back or posterior pelvic/buttock pain
- Posterior tenderness palpation
- Tenderness with pelvic compression
- Examination of lower extremities is not sufficient

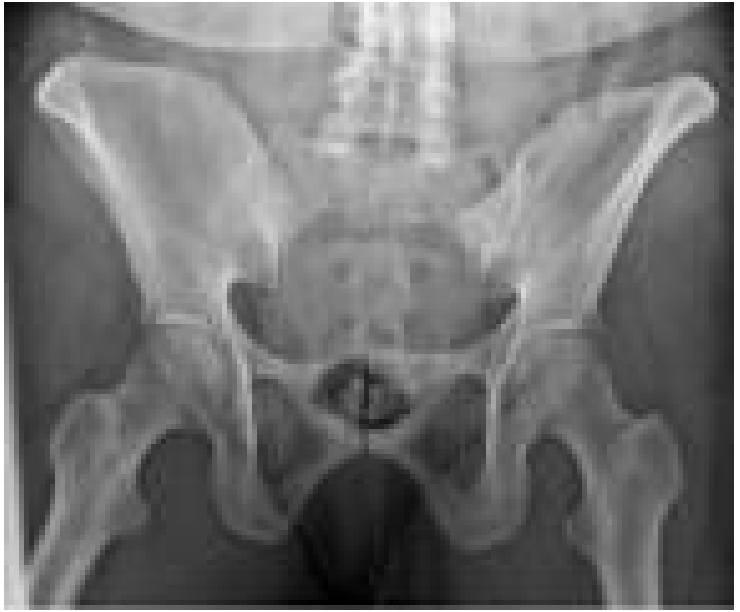


- Anteroposterior (AP) view
- Inlet view
- Outlet view

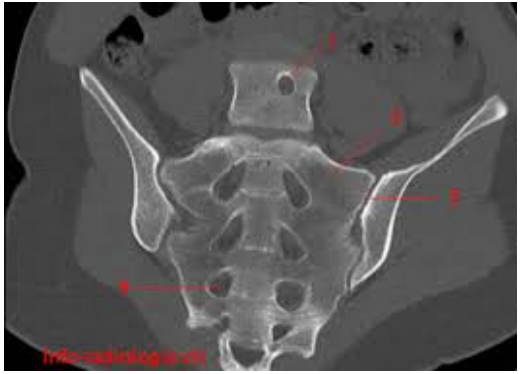


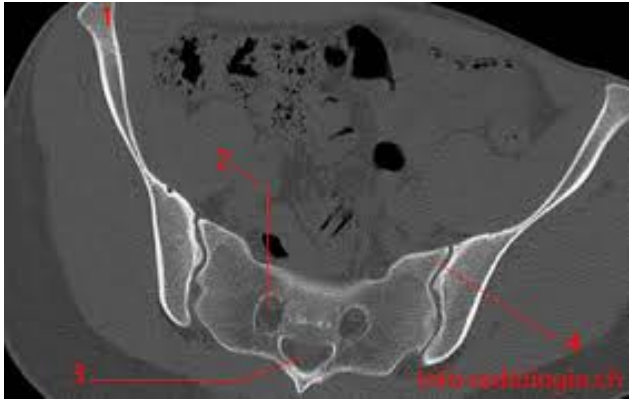
Pelvic inlet and outlet radiography

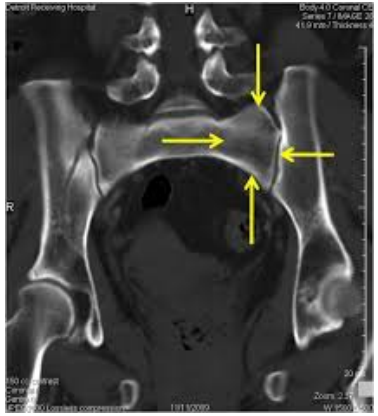


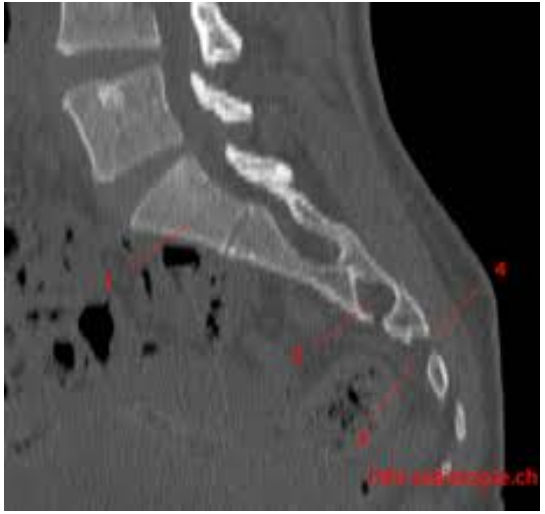


CT scan

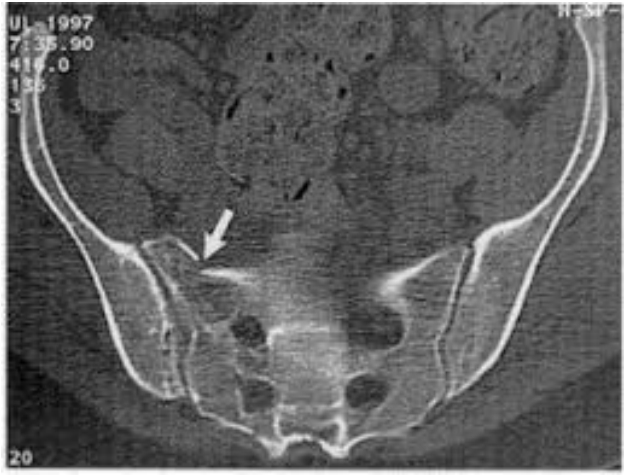






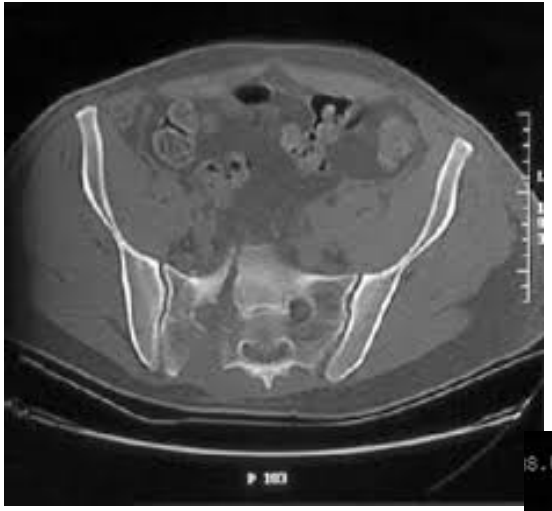


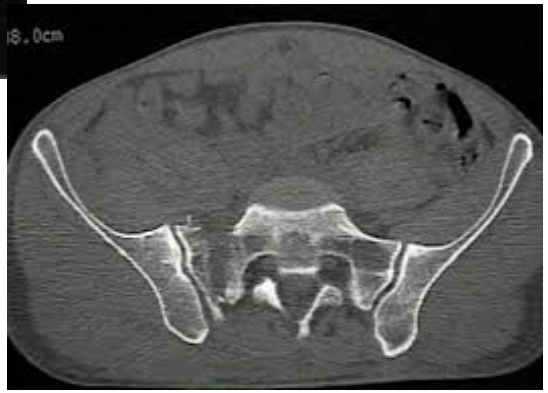
Non-operative



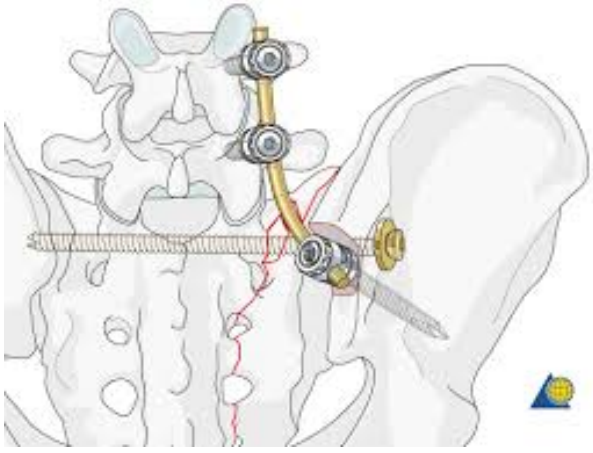
- Non-displaced fractures
- No posterior ring instability
- No neurologic injury

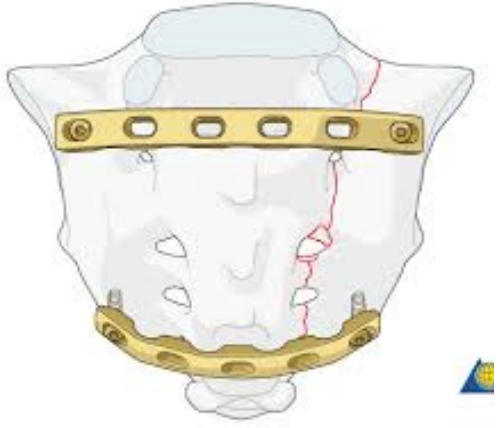
- Operative
  - Displaced sacral fractures
  - SI joint disruption
  - Posterior pelvic ring instability

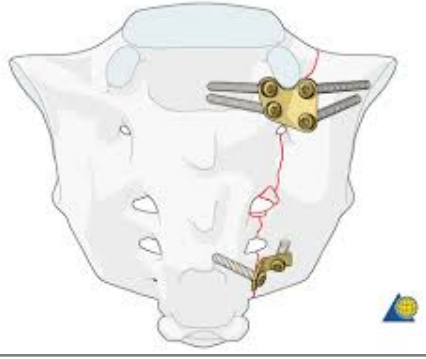


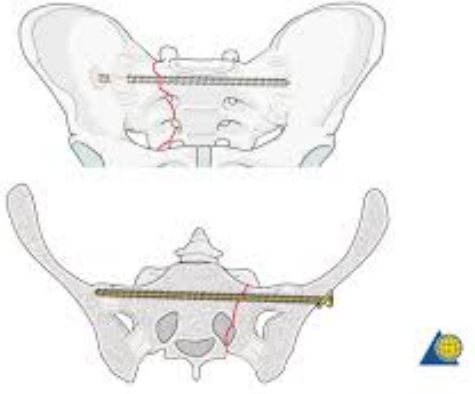


Operative treatment

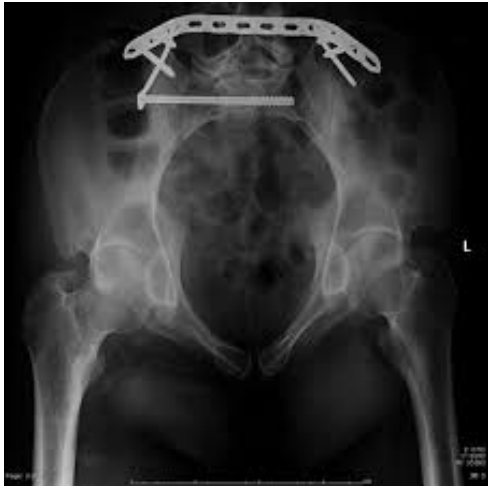


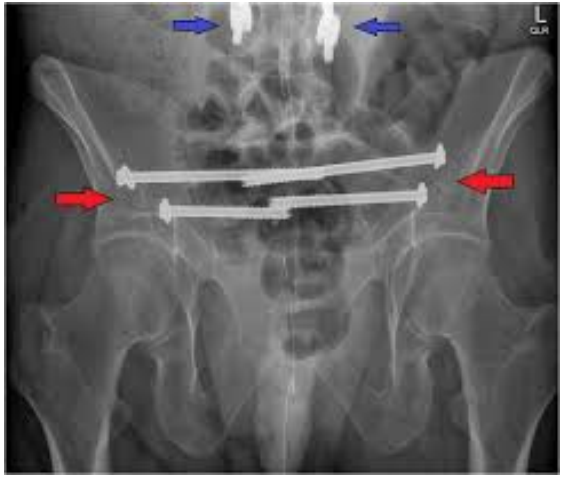


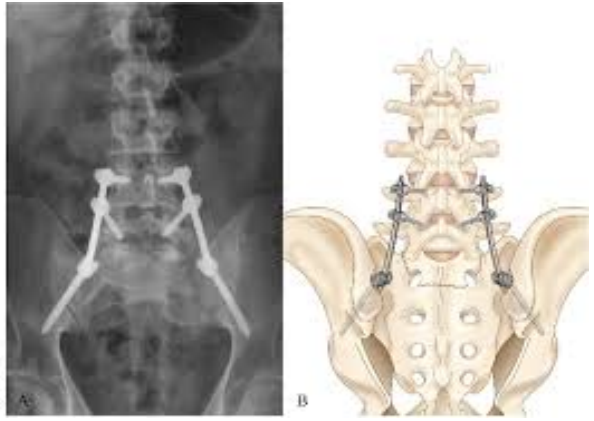




Sacral fixation







- Which is better?
- Does early surgery help?

Functional outcomes

Joint Bone Spine
Volume 70, Issue 4, August 2003, Pages 287-289

Original article

Mortality and functional outcomes of pelvic insufficiency fractures in older patients

Jean Taillandier, Fabrice Langue, Martine Alemanni, Elodie Taillandier-Heriche

- 60 patients
- At discharge, 50% of patients had not recovered their former level of self-sufficiency and 25% had to be institutionalized. The 1-year mortality rate was 14.3%.

Functional outcomes

Journal of the American Geriatrics Society

Outcomes of Displaced and Nondisplaced Pelvic and Sacral Fractures in Elderly Adults

Simon C. Mears MD, PhD, Daniel J. Berry MD

First published: 30 June 2011 | https://doi.org/10.1111/j.1532-5415.2011.03455.x | Cited by: 18

- 181 patients
- Similar morbidity and mortality rates for sacral insufficiency fractures compared to displaced pelvic ring injuries

Sacral Fractures: Current Strategies in Diagnosis and Management

David J. Hak, MD, MBA; Sean Baran; Philip Stahel, MD

Orthopedics. 2009;32(10)

- No change in functional outcomes non-op vs operative management
- Decrease in narcotic pain medication usage with fixation

- No current study comparing outcomes in this age group with different implant types
- Improvement in functional outcomes limited
- Patients “feel better”
- Immediate immobilization

- Starting to employ geriatric hip fracture model
  - Early mobilization
  - Decrease pain
  - Percutaneous skeletal fixation often optimal
  - Be wary of U- or H-type fractures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