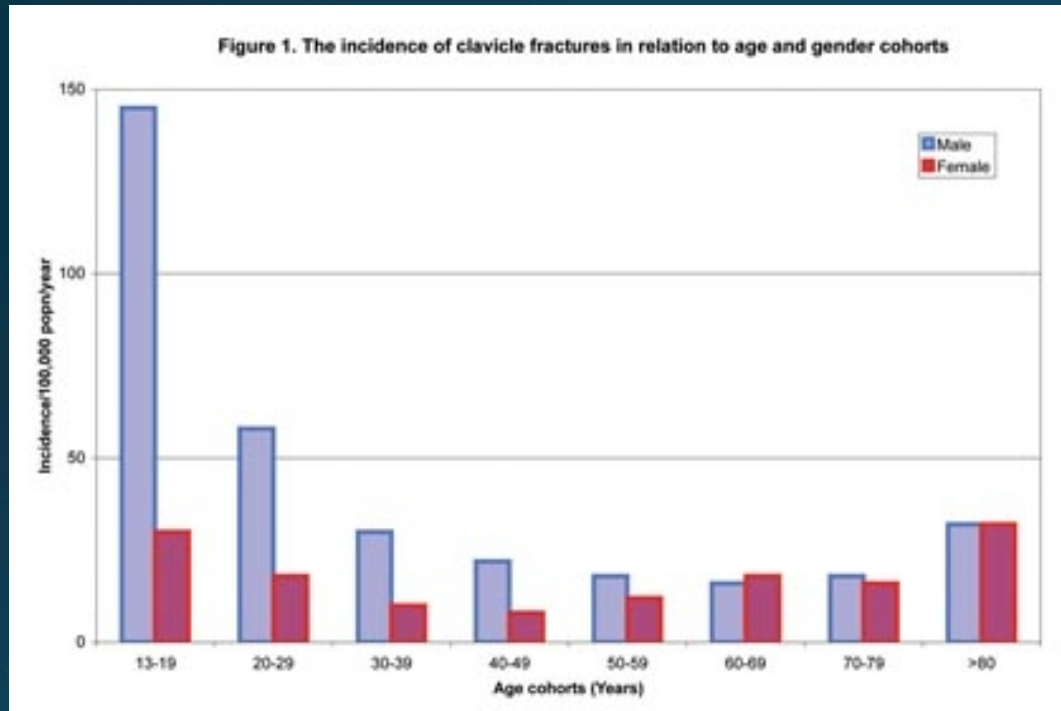


Collarbones fractures



SITEMSH 2016 Japan
MH Binet, JM Bertrand
Centre Medical AVORIAZ
FRANCE

Very common injury in winter sports



- Specialty for males
- for all age groups
- 2% of all injuries in winter sports

Typical location of the fracture



Break situated between ligaments insertions

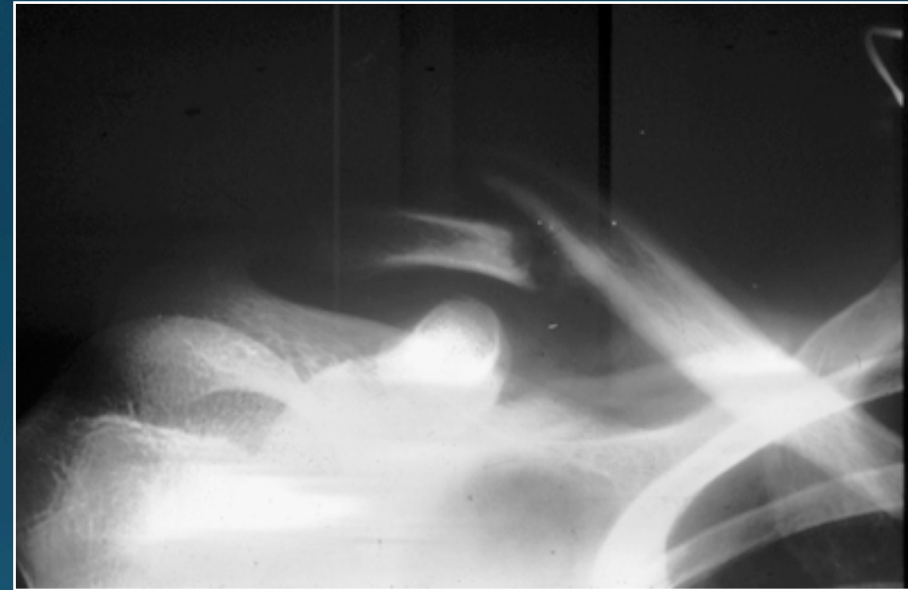
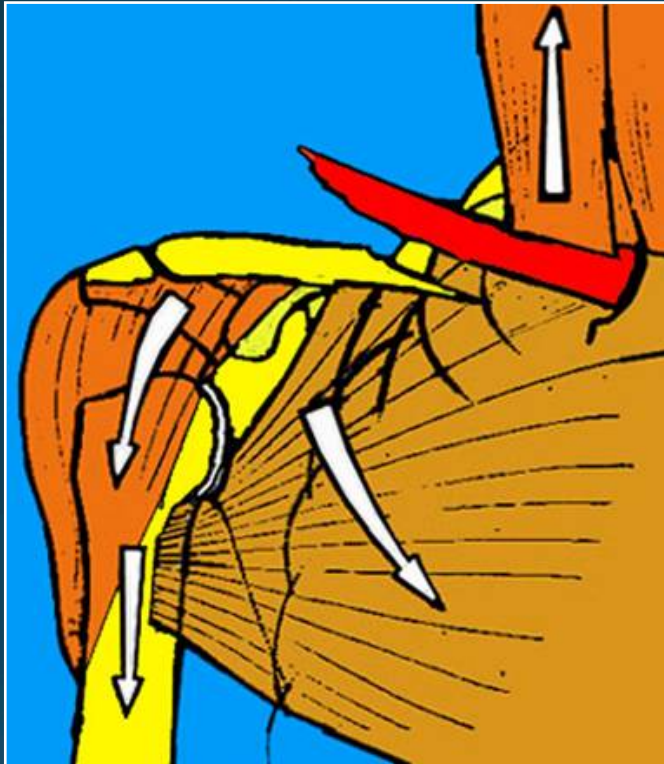


Break situated inside ligaments insertions



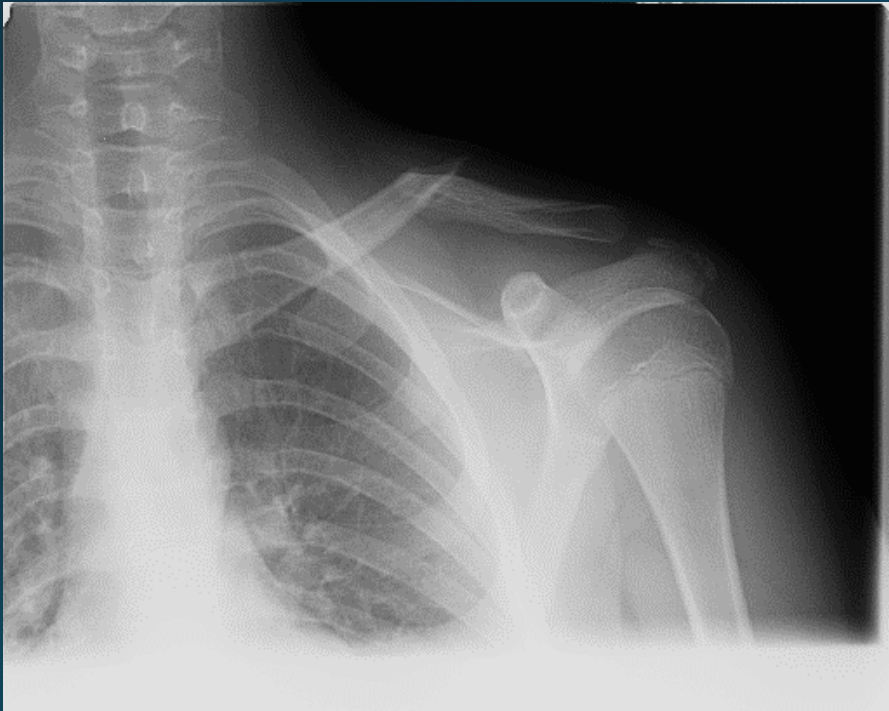
Ligament injury possibly associated

Typical displacements for medial fractures

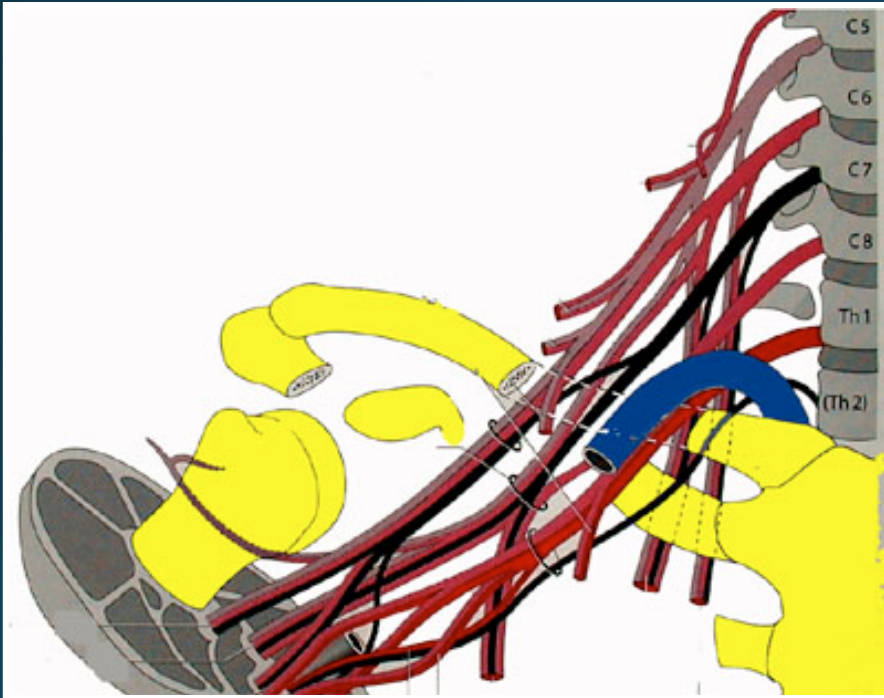


- Internal piece upway
- Shoulder down
- Shortening

Typical fractures



Possible complications



Risk of vascular and nervous damages

Risk of opening fractures

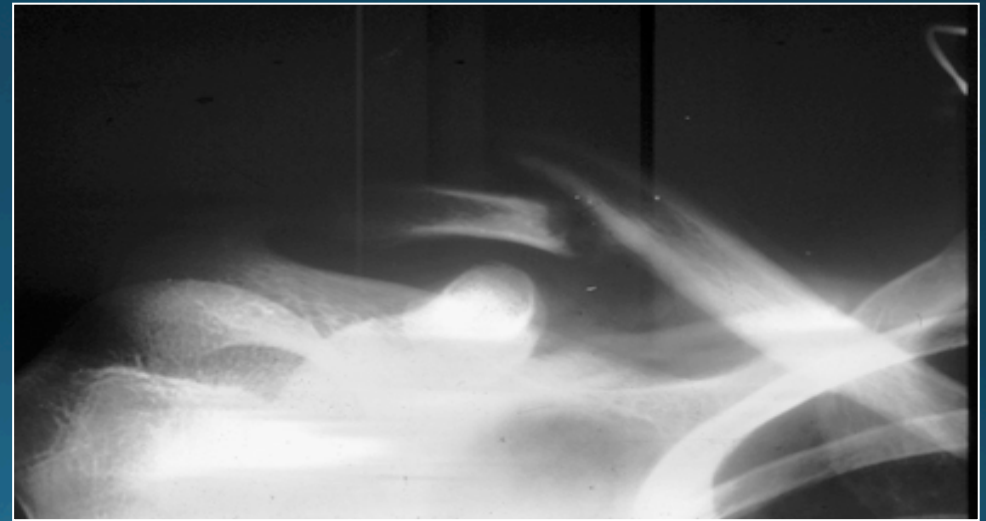
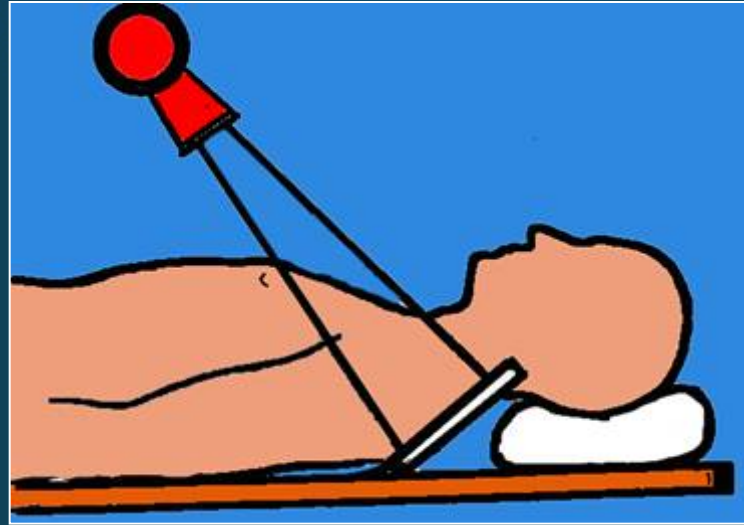
In reality these damages are very rare and occur only for very high energy impacts and often when first ribs fractures are associated

Questions for primary care

- Diagnosis made by simple inspection
- Analgesia: what mode?
- Immobilization : what position for transport ?



Radiography



Classical conservative treatment



Risk for conservative treatment

- **Shortening**
- **Malunion with visible deformation**
- **Unaesthetic impairment**
- **Rare non union**



Surgical treatment

Avantages

Restitution of the anatomy

Possible gentle mobilisation

Risks

Skin scar

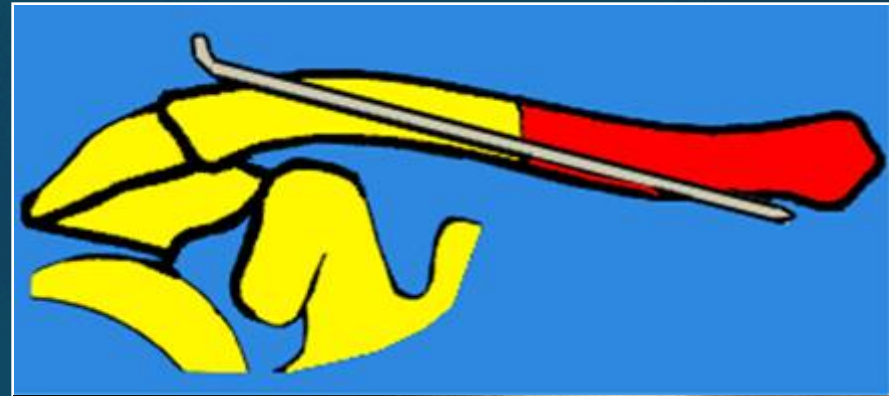
Nonunion

Risk of infection



Risks for surgical treatment

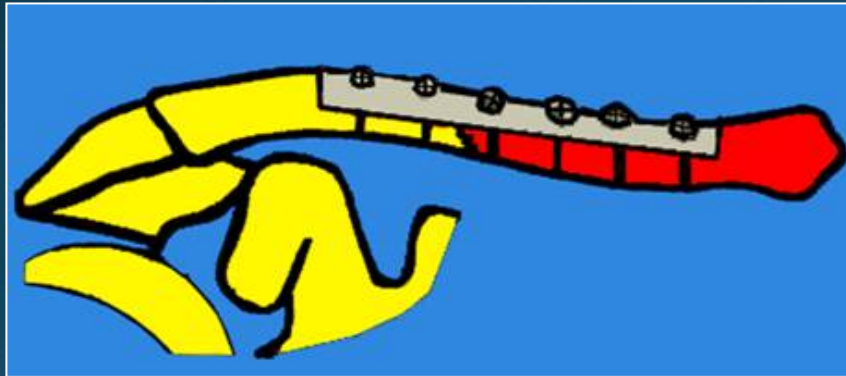
- Shortening
- Malunion with visible deformation
- Impairment more aesthetic than functional
- Rare non union



Literature criterias for choice of treatment

Surgery if

- Shortening $> 2\text{cm}$
- Multiples pieces with risk for the skin
- Professionnal sport activity



Conservative treatment

- For all other cases including fractures with displacement $< 2\text{ cm}$



Questions for treatment



- Weight of the arm pulling the shoulder down
- Compression of the axillary area

Our protocol

- Local anesthesia: injection of lidocaine in situ
- Mobilisation of the fracture to retrieve the length
- Immobilisation with a special vest



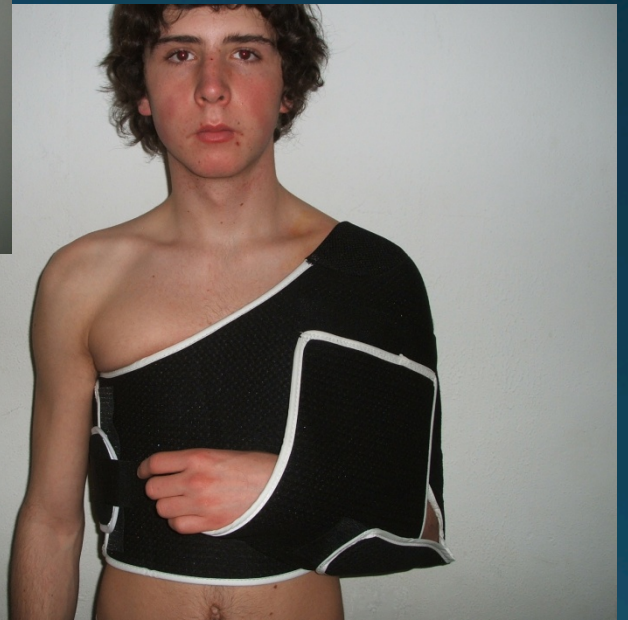
Local anesthesia



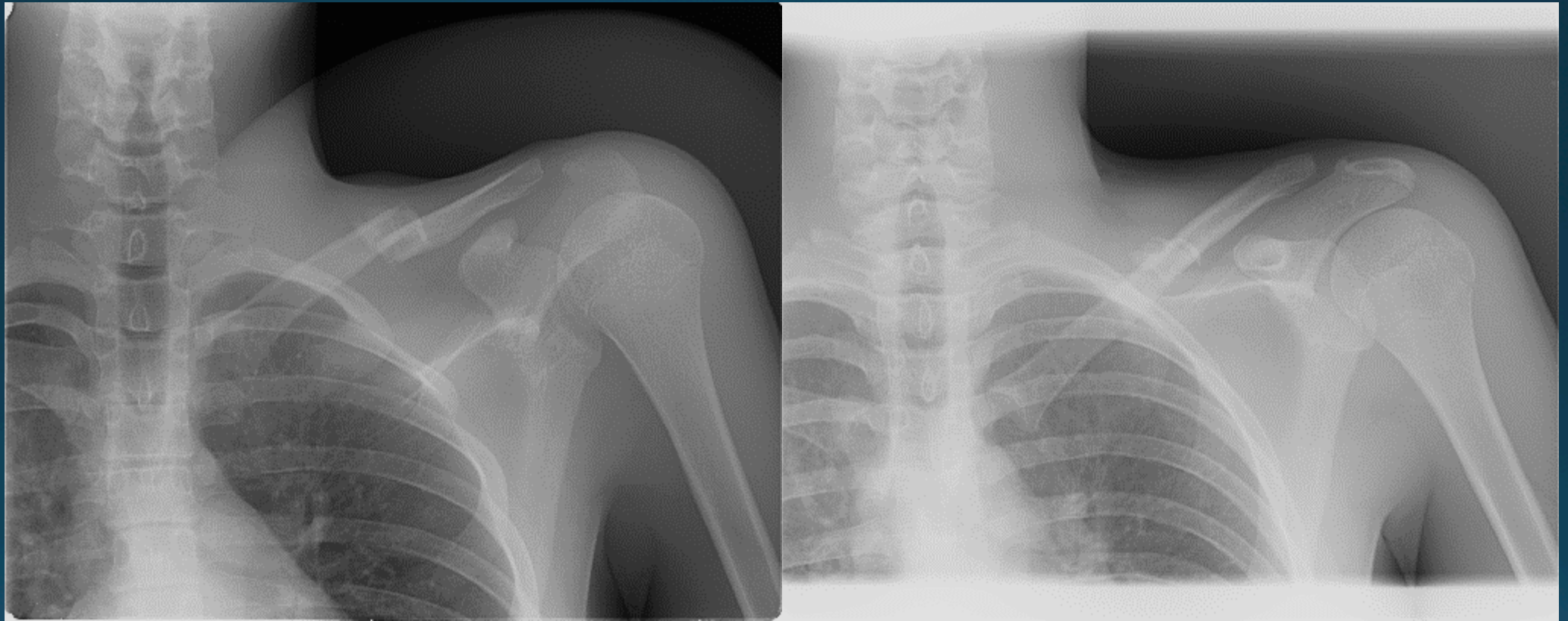
Immobilisation



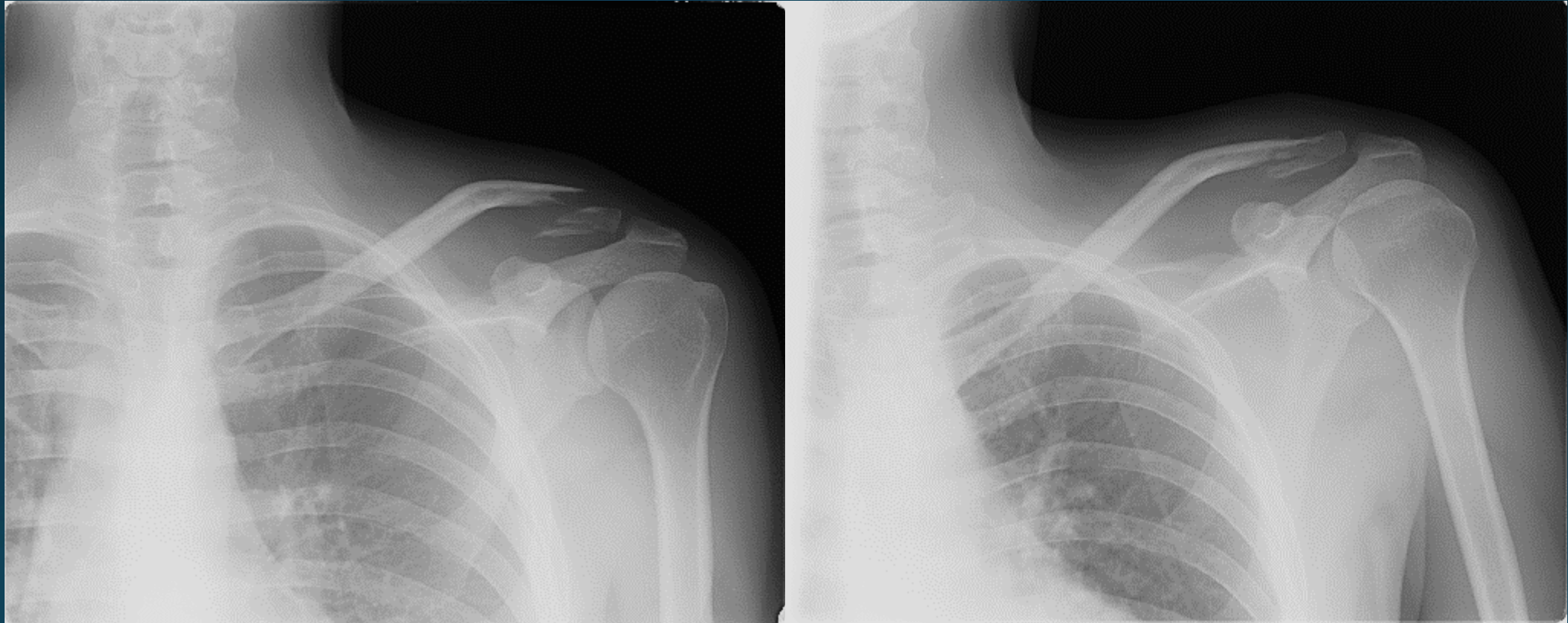
Vest with a strap to pull the shoulder back



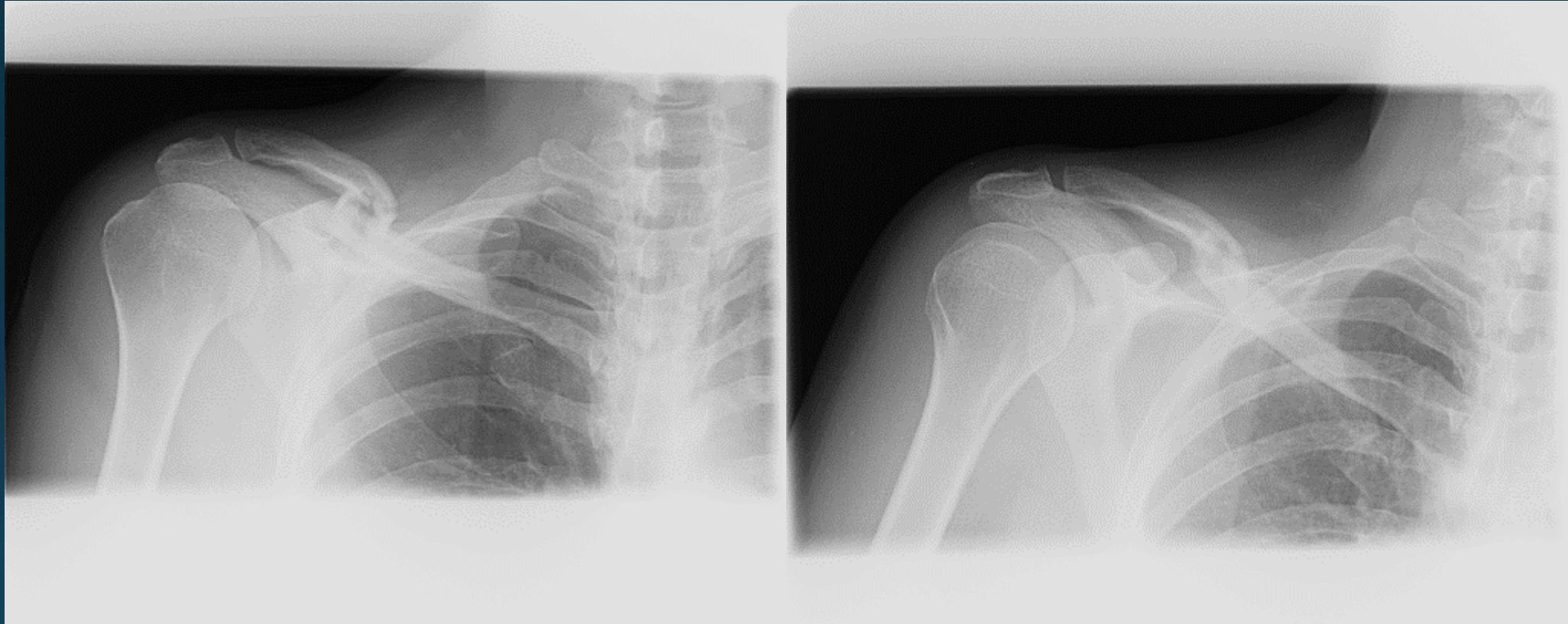
Reduction with the vest sample 1



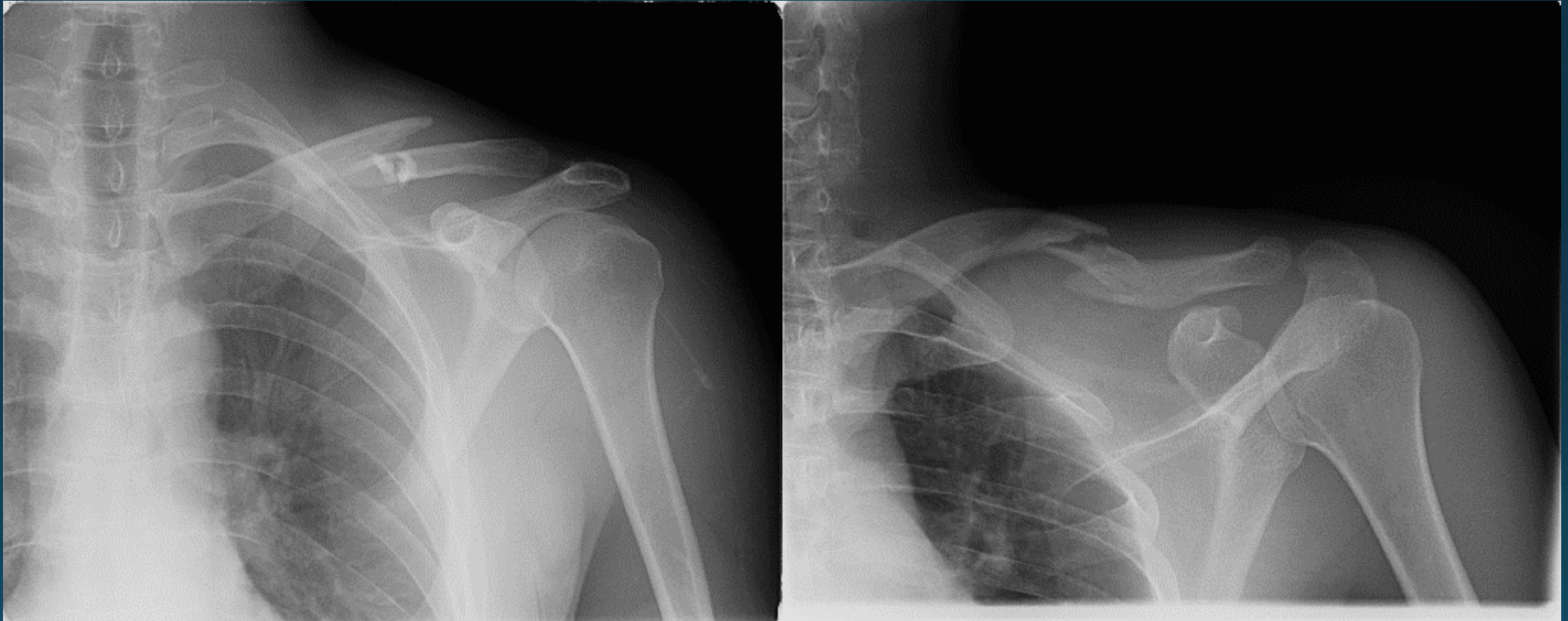
Reduction with the vest: sample 2



Reduction with the vest: sample 3



Reduction with the vest: sample 4



Discussion

- Such an immobilization is more comfortable than any 8 brace with no support under the arm.
- The maintain of the position of the arm helps to minimize the pain.
- In case of multiple pieces there is still a risk of mobilization and definitive shortened clavicle.

Conclusions

- Collarbone fractures are common injuries during wintersports.
- The conservative treatment is an evident choice for all fractures without displacement, or with a shortened clavicle less than 2 cm.
- For other fractures surgery is a reasonable choice.
- The best sedation of the pain is obtained with a local anesthesia.
- A new immobilisation vest seems to bring good results in term of comfort and maintain of the clavicle length.



Thank you !

