Graftys®

2015

F/PPTQUICKSET/201511A

QuickSet Presentation

Graftys - QuickSet

- Cross-selling
- Indications
- Comparison
- Basic Science

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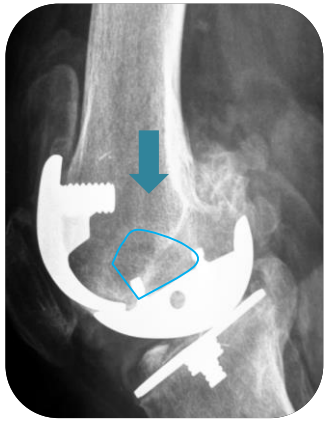
www.graftys.com

Where to use QuickSet?

Revision



Geodic lesion in revision knee

- To fill osteolytic lesions and bone defects.
- Use of a primary prothesis instead of an augmented prothesis.

Fracture

Multi-fragment proximal humeral fracture

- to fill voids around and under fixation or compression defects.
- Lower prevalence of loss of fracture reduction.
- Less pain.

Cavity filling

Osteonecrosis of talus and calcaneum

- To reach deep cavities
- To fill osteonecrotic bone defects and benign bone cysts.

Material removal

Dynamic Hip Screw

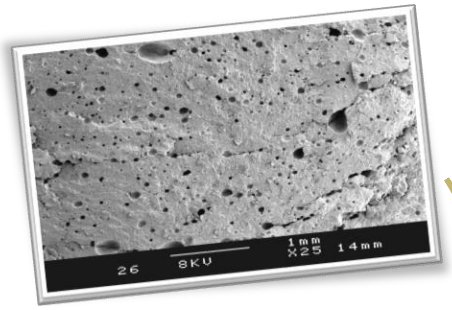
- To fill defects after material removal.
- such as screws, or pins used with navigation or cutting instruments.

Surgery performed by Pr Sébastien PARRATTE, MD, PhD, Pr JN ARGENSON Department of Orthopedic Surgery, Ste Marguerite Universitary Hospital, Marseille, France

QuickSet properties

QuickSet Main advantages

Transfer – Mix – Inject

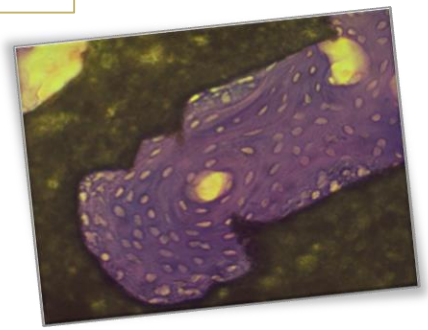


Easy to use

Quality bone formation

Porosity

Composition



Full range of porosity

→ Helps insure Resorbability

Composition close to natural bone

→Helps insure Osseointegration

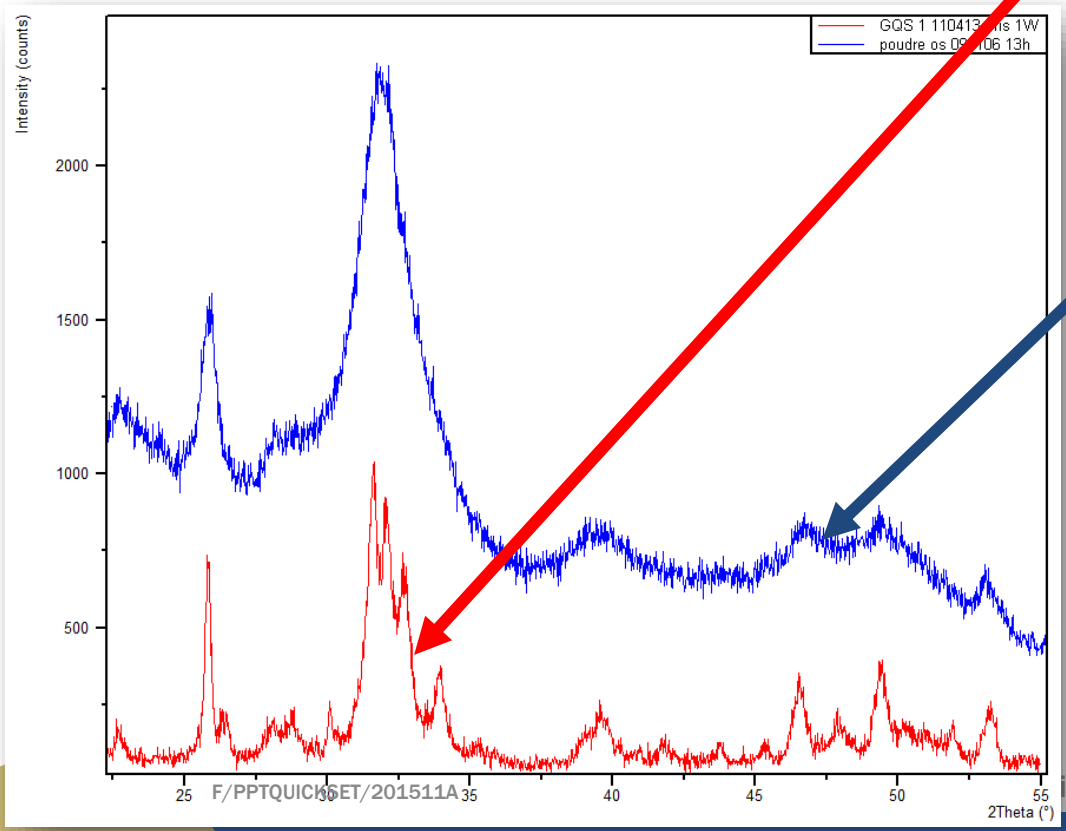
► The unique self-hardening injectable **Macroporous** Bone graft substitute on the market

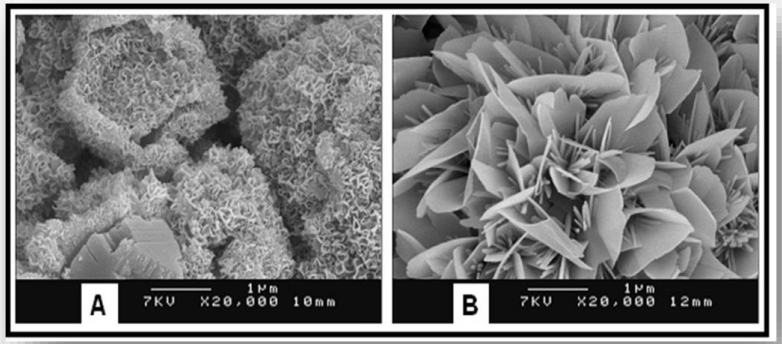
QuickSet Main advantages

- **Resorbability – Composition**
- **Safe reaction**

Calcium Phosphate Mix + Water (+ Polymer) → Calcium Deficient Apatite

Similar to Natural bone crystals

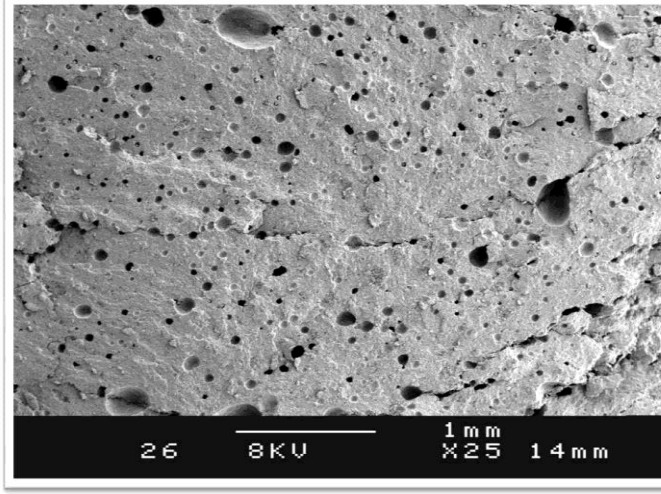




QuickSet Main advantages

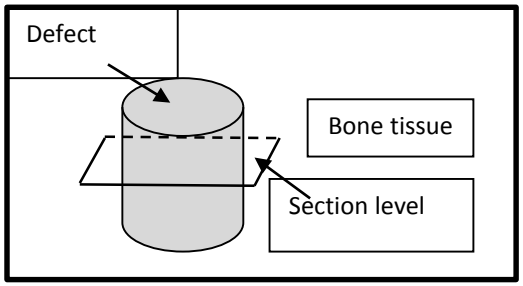
- **Full remodelling : Porosity and permeability**

	Pore size	Cells size	QuickSet
Micro	<10µm	/	88%
Meso	10-100µm	/	2%
Macro	>100µm	Osteoblast : 15 - 20 µm Osteoclast : until 100 µm	10%
Total			70%

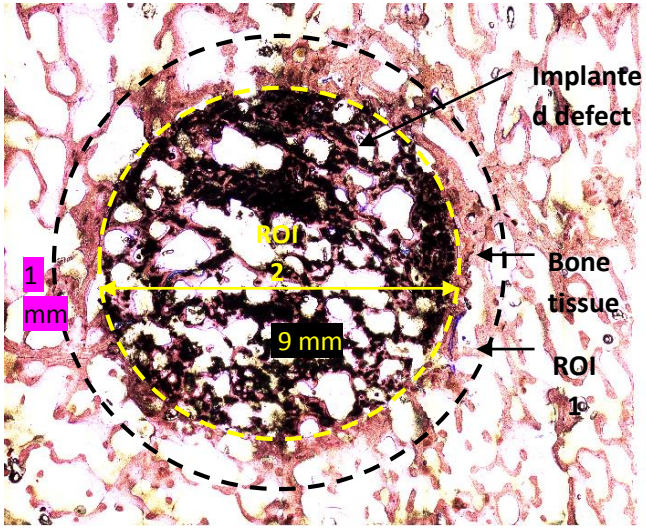


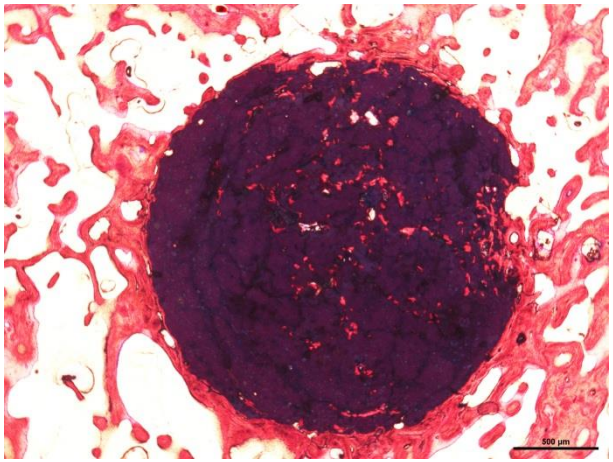
QuickSet Main advantages

- **Permeability (preclinical study)**

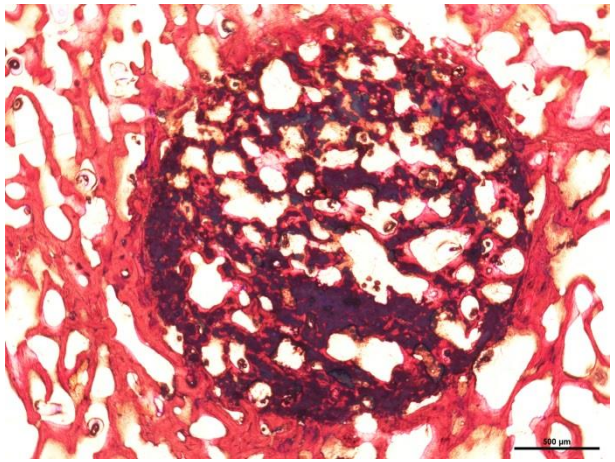


A 10mm long and 9mm diameter defect was created in sheep condyle. The Graftys® BGS and Norian® SRS was implanted.





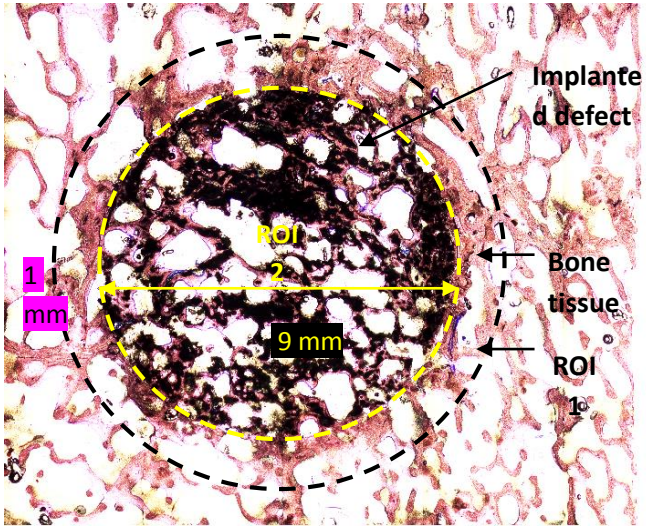
24 weeks postoperative Photomicrograph - Norian® SRS

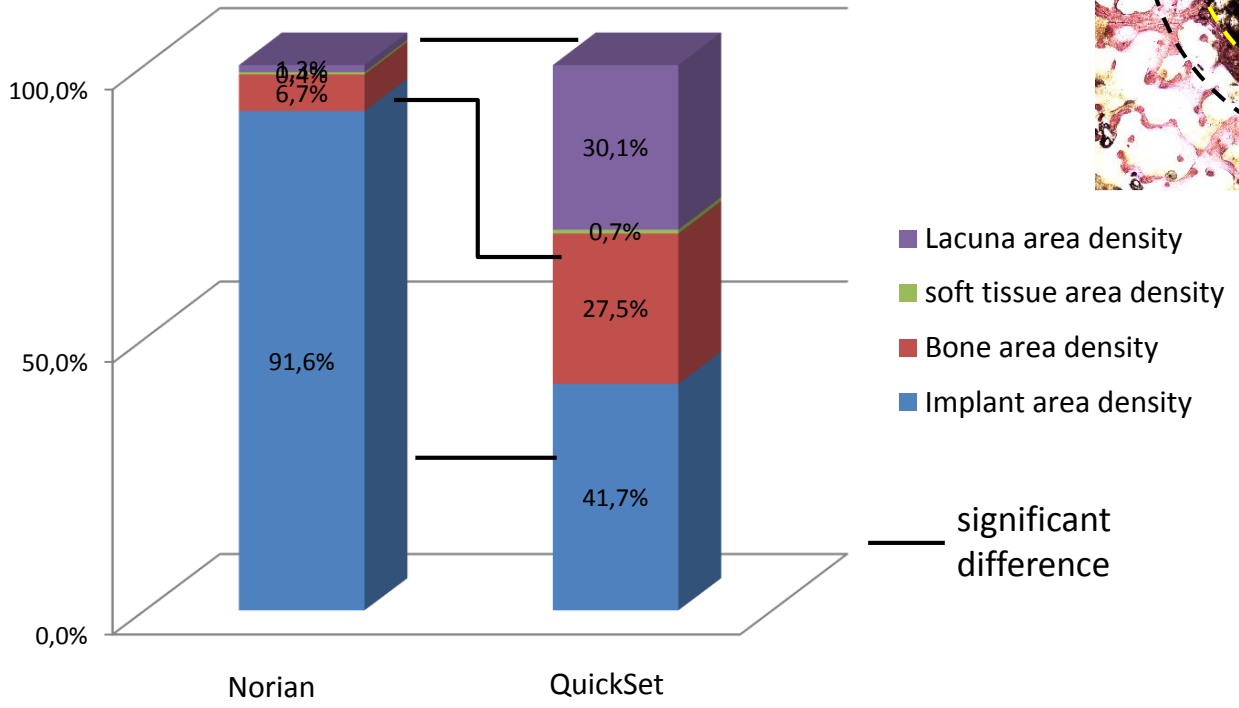


24 weeks postoperative Photomicrograph - QuickSet

QuickSet Main advantages

- **Permeability (preclinical study)**

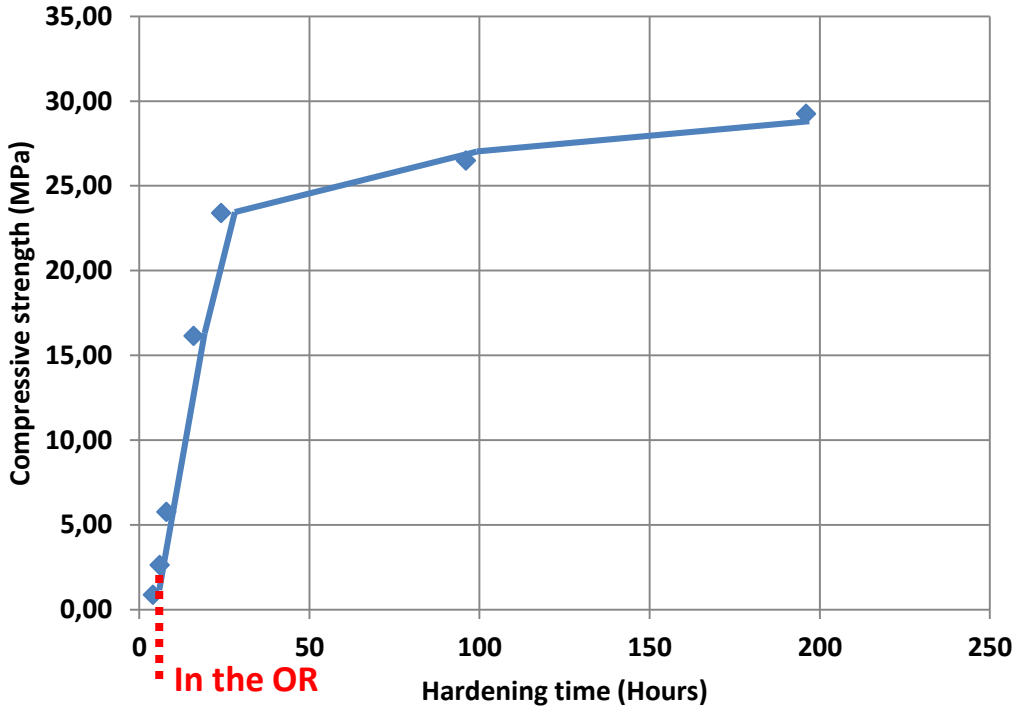




QuickSet Main advantages

Secondary fixation- Mechanical resistance

	Cancellous Bone	StrucSure	PMMA [6, 7]	cortical bone
Compressive strength	4-12 MPa	≈ 24 MPa	70-100 MPa	130-180 MPa



QuickSet Preparation

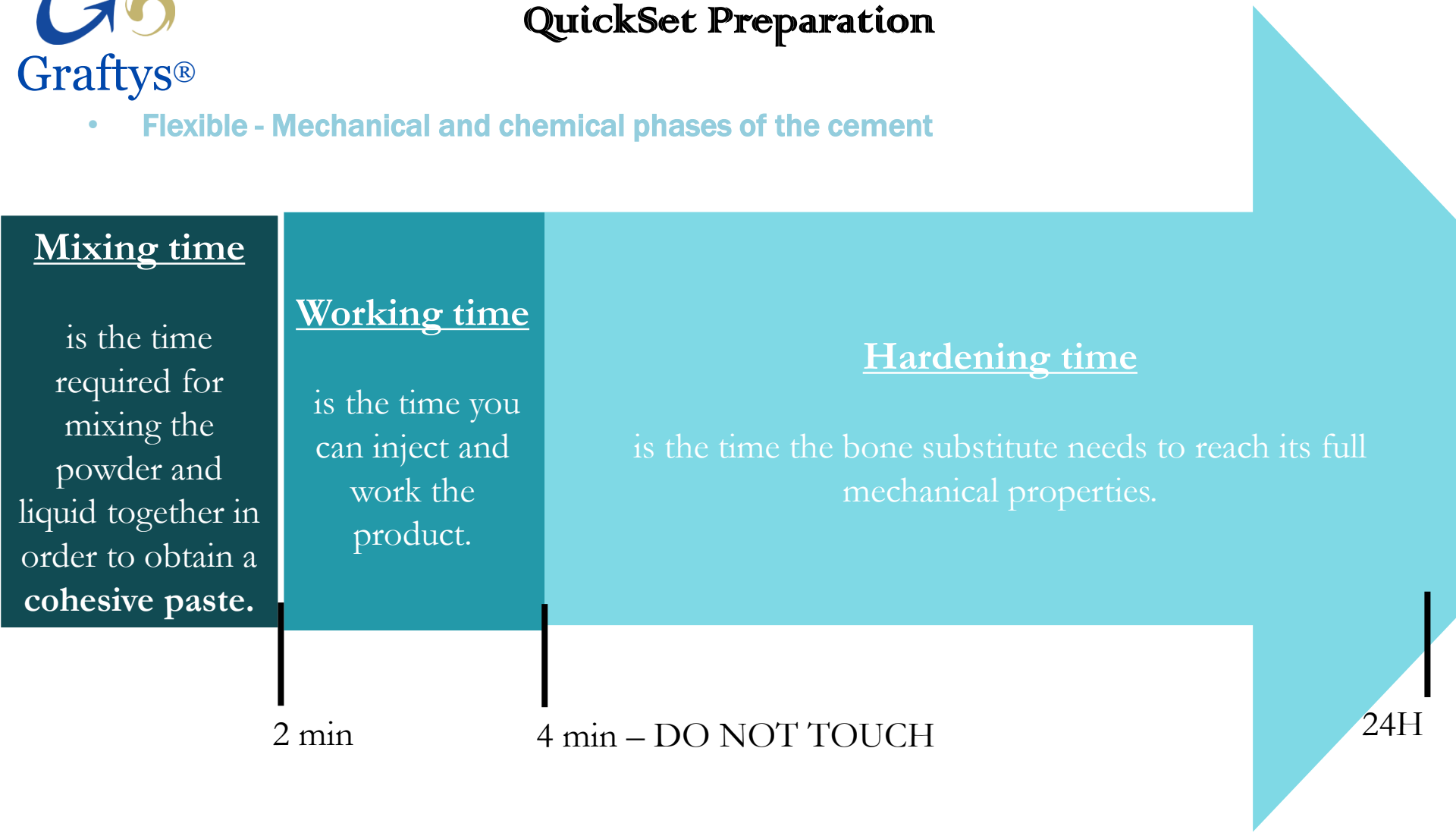
Transfer

Mix

Inject

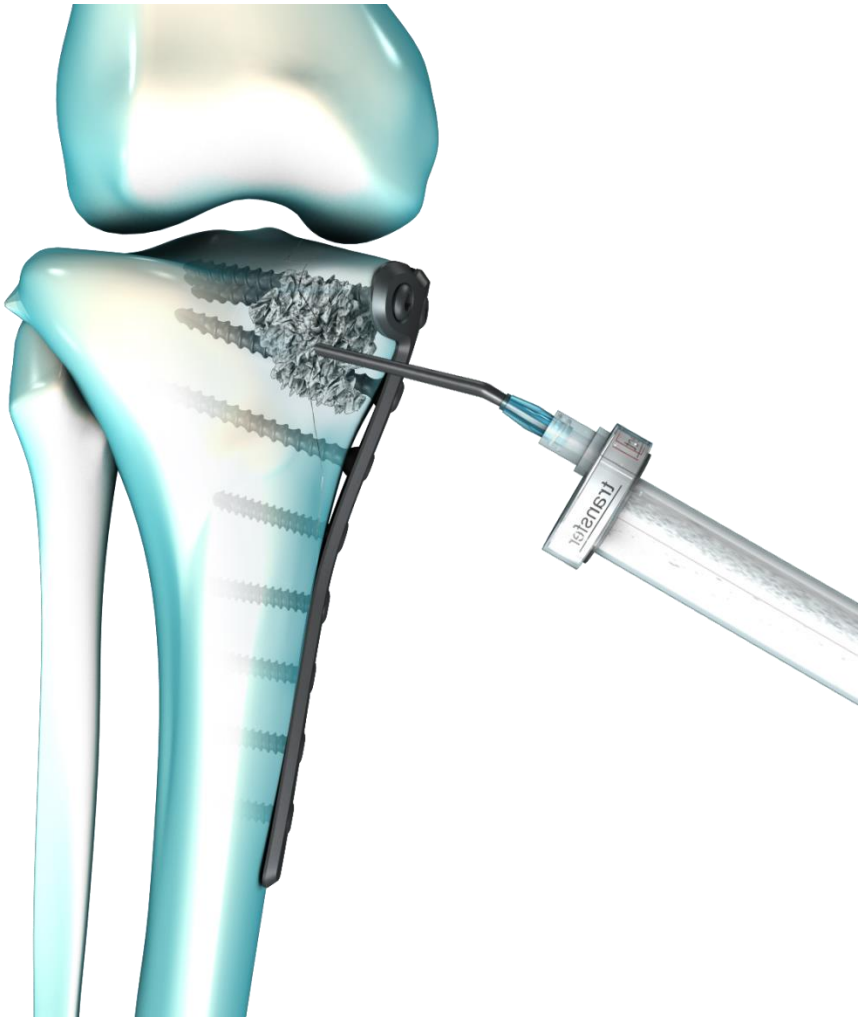
QuickSet Preparation

- Flexible - Mechanical and chemical phases of the cement



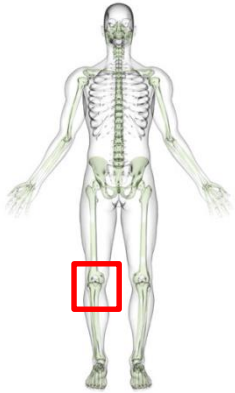
Hardening time =24 H (linked to the porosity)

Clinical cases / Tibial plateau



Clinical cases / Tibial plateau

By Pr Sebastien Parratte



A complex plateau tibial fracture due to a fall in ski

Pre operative scan

Hypothesis:

Using an injectible calcium phosphate bone substitutes Graftys®Quickset & HBS may **fulfill the plateau tibial defects as a bone void filler and allow early mobilization and functional recovery.**

Clinical cases / Tibial plateau

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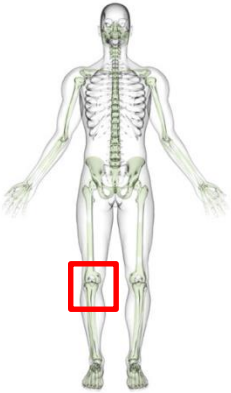
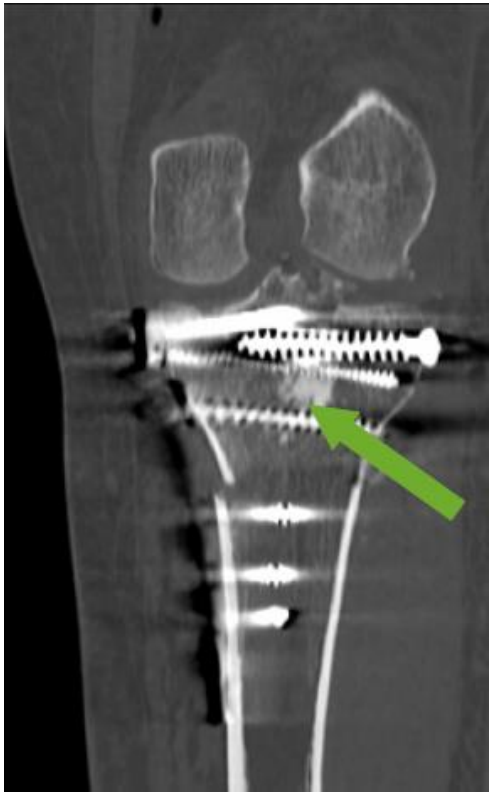
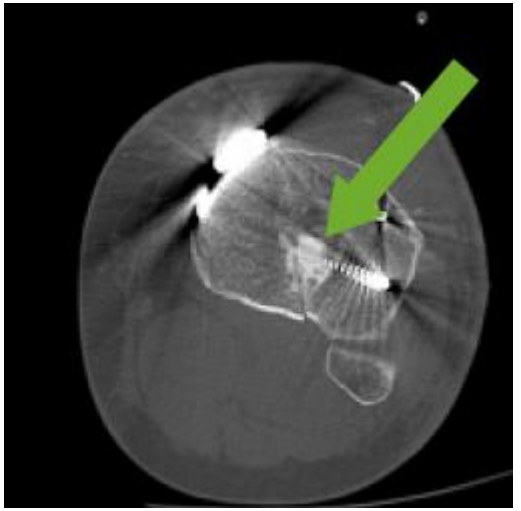


Post operative AP X-ray





Post operative Scan

Clinical cases / Tibial plateau

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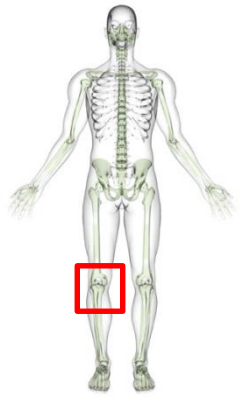
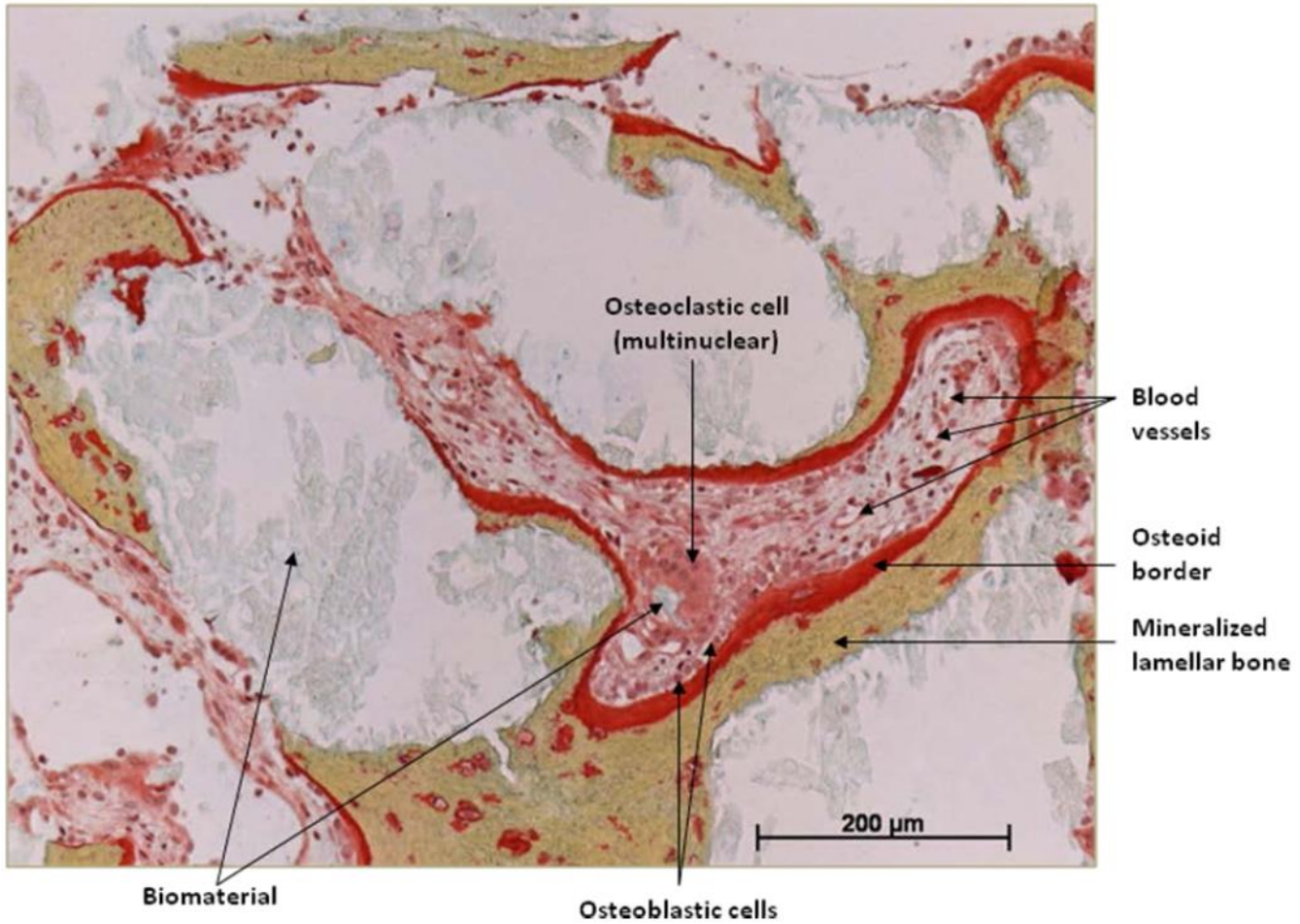


Histology at 4 months

X 10



Clinical cases / Tibial plateau

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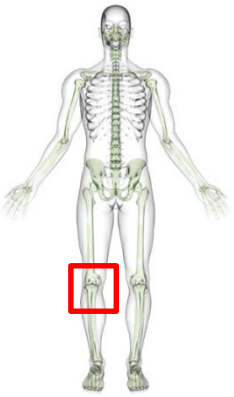

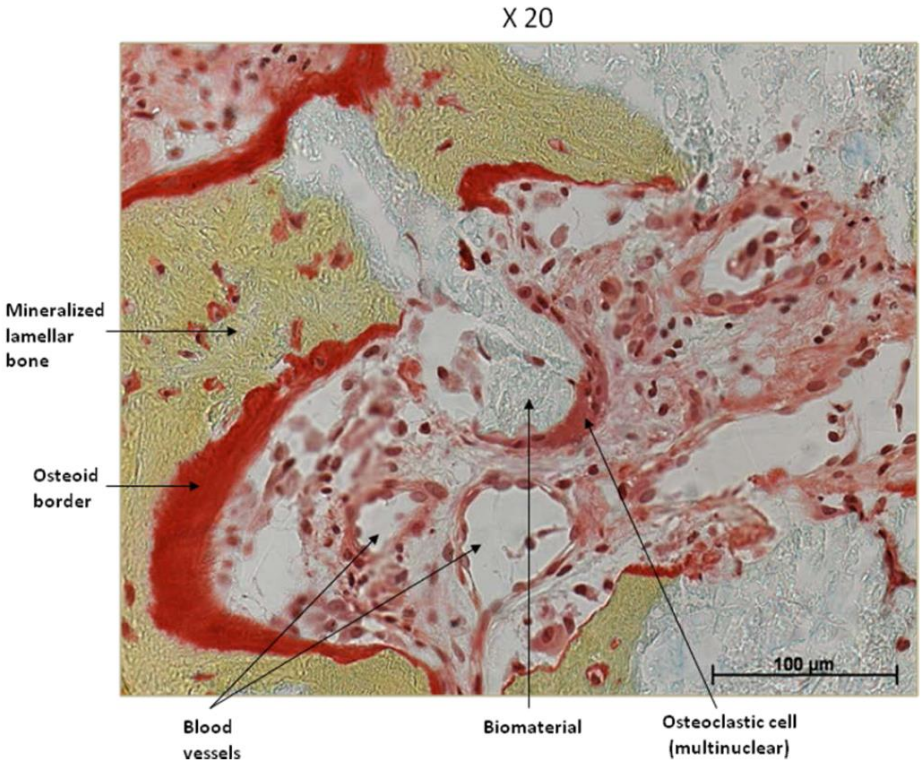

- Good osteointegration of the Graftys®HBS and Quickset (in blue) in direct contact with new bone trabeculae (no fibrous interface)
- A very close intertwining between biomaterial (in blue) in degradation process and mineralized lamellar bone (in brown)
- Presence of osteoblastic cells (cuboid) in relation to osteoid borders in mineralizing process
- In direct contact, osteoclastic cells (multinuclear cells) are resorbing the biomaterial
- Presence of numerous blood vessels

Clinical cases / Tibial plateau

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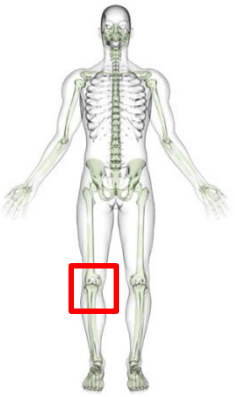
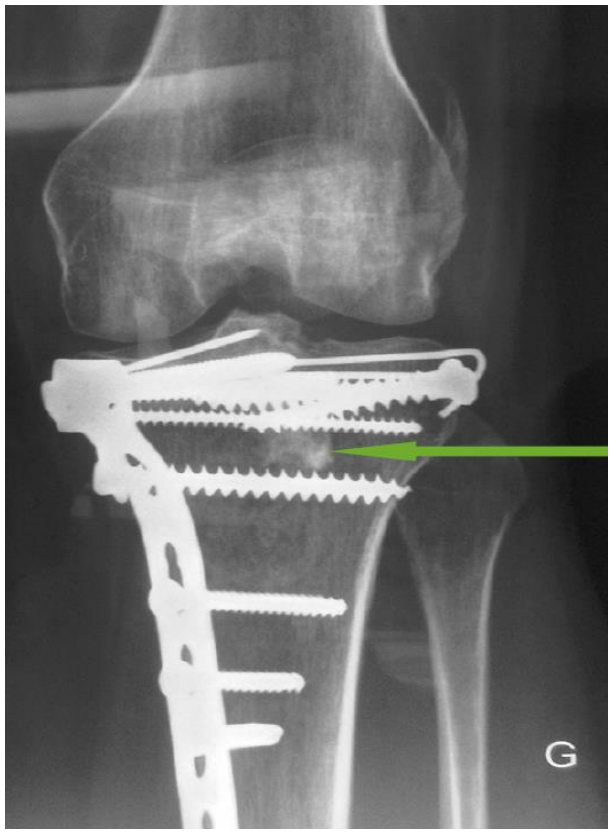




8 months post operative AP & ML X-Rays

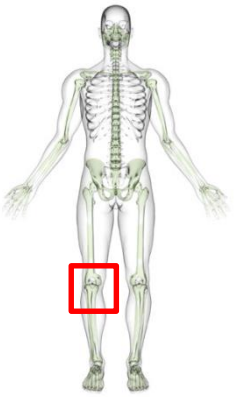
Clinical results:

- Painfree for the ADL
- Cycling OK
- Flexion 120°
- Extension 0°
- Stable

Radiological results:

- Fracture healing
- Restoration of the articular congruency

Clinical cases / Tibial plateau



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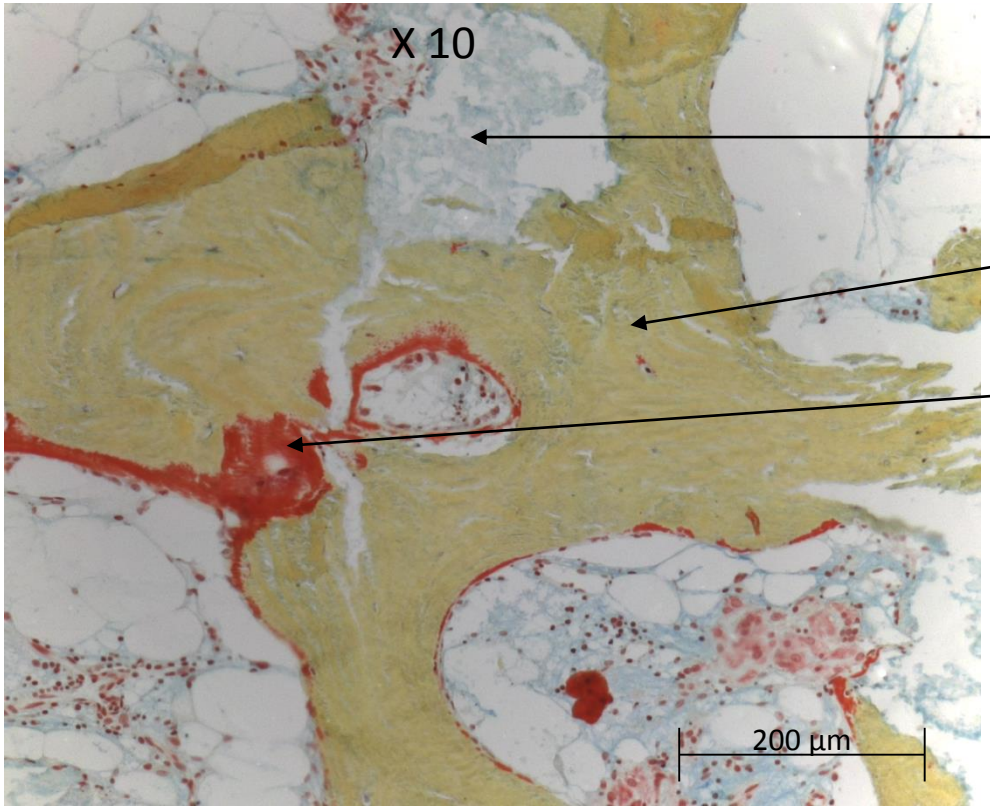
Biopsy at 1year and 10 months



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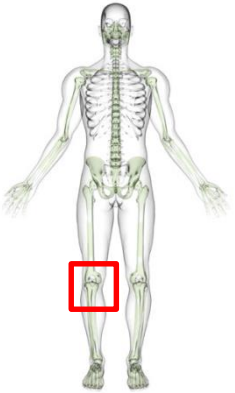

2 years postoperative AP & ML X-Ray