



**Indication  
of the**

**q**

# Septic non-union in proximal tibia

## Patient

45-year-old female.  
Type II° open proximal tibial  
fracture and distal femur fracture.  
Multiple revisions with autologous  
bone and BMP-2. Diagnosis of a  
septic non-union in the tibia 20  
months after injury. Very sclerotic  
bone region next to the non-union.

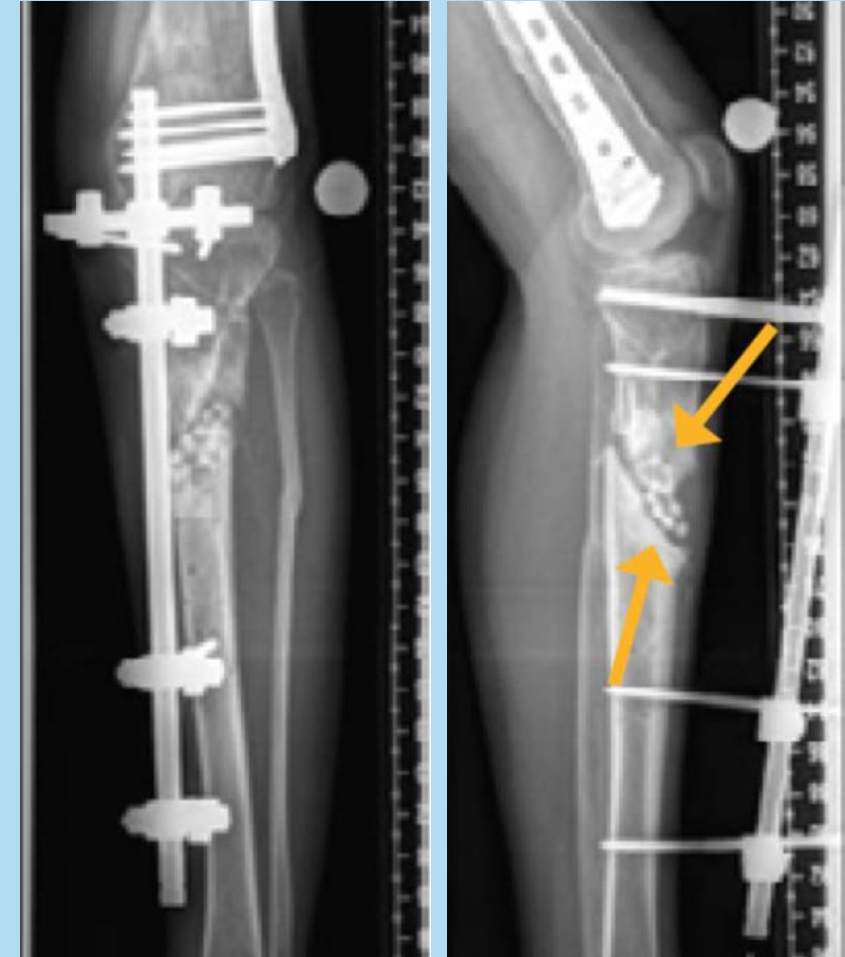
**Bacterial culture:** *Staphylococcus  
capitis*

Courtesy of BG Unfallklinik Duisburg,  
Germany

Post-op



22 months after injury



### Operation

Extended decortication and drilling (24 months after injury) and insertion of intramedullary nail. Application of 10 cc bioactive glass mixed with autologous cancellous bone (20 cc) from ipsilateral posterior iliac crest 26 months after injury.

24 months after injury



Post-op after bioactive glass implantation

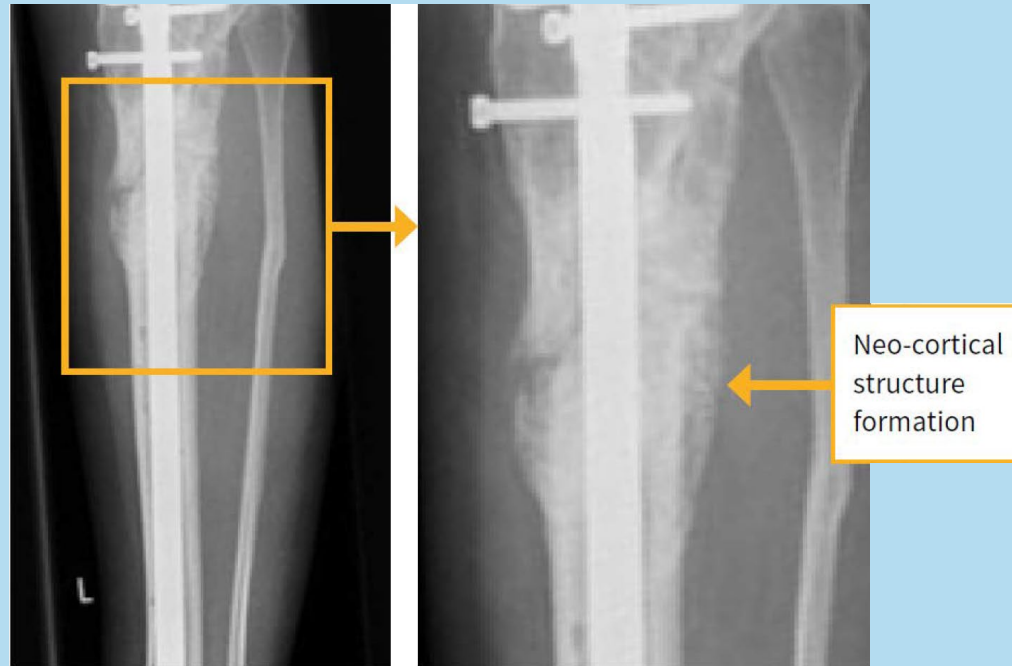


Courtesy of BG Unfallklinik Duisburg,  
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### Clinical outcome

Bone formation  
visible with new callus  
formation 6 weeks  
after surgery.

6 weeks post-op (anteroposterior)



6 weeks post-op (lateral)

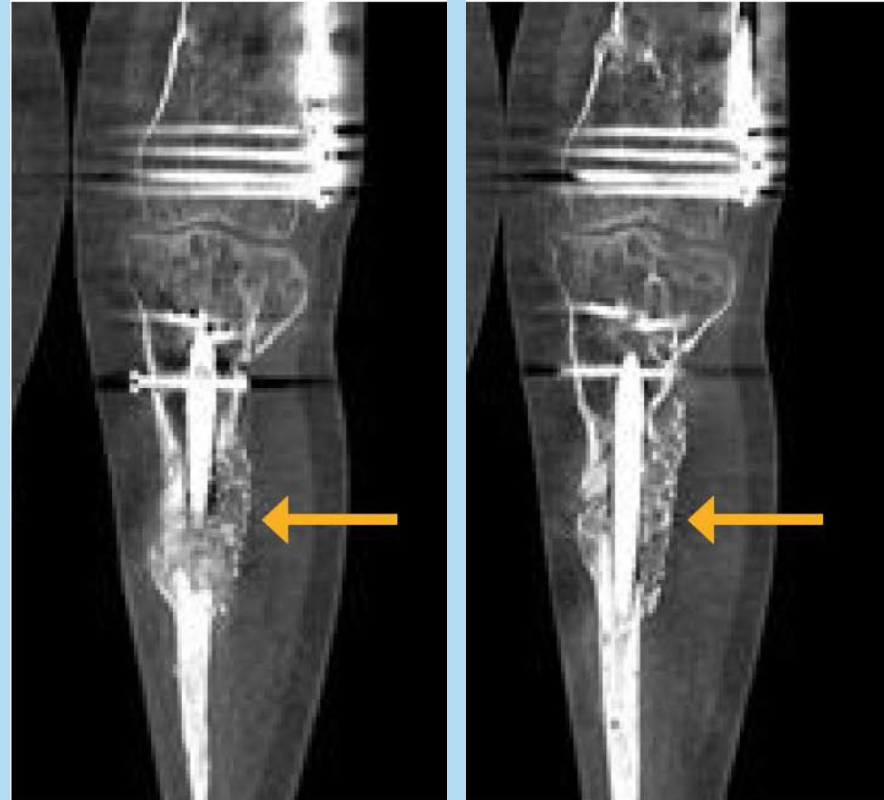


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### Clinical outcome

New cortical bone formation and progression of bone remodelling visible in the CT images.

3 months post-op  
Coronal (CT)



3 months post-op  
Axial (CT)

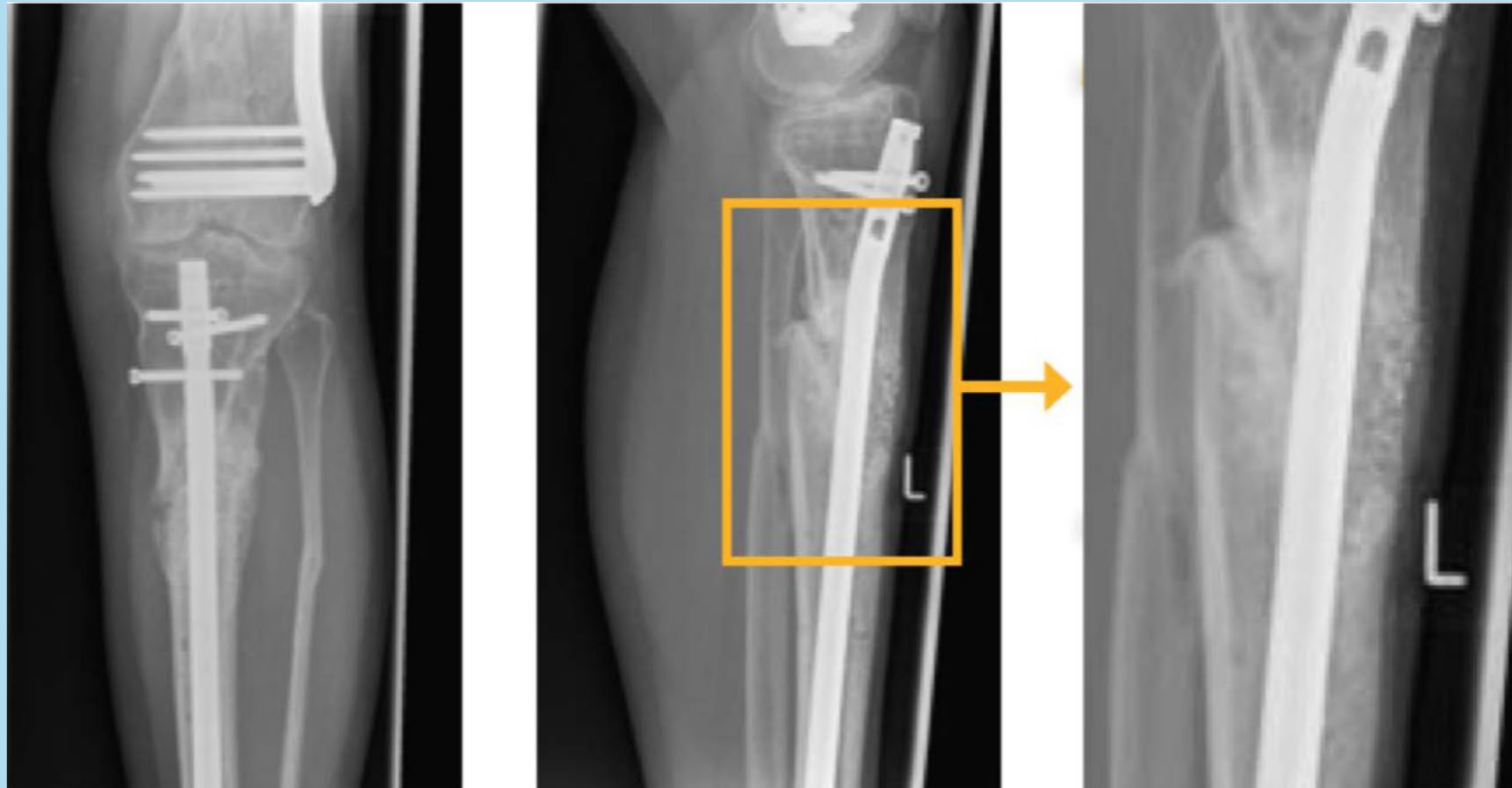


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### Final clinical outcome

7 months after application of bioactive glass a complete consolidation could be observed.

7 months post-op



Courtesy of BG Unfallklinik Duisburg,  
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See more cases  
in the Smart  
Healing Center:  
[smarthealing.center](http://smarthealing.center)

