Infographic: Chongqing technique

a method of stabilization for management of chronic osteomyelitis

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In addition to radical debridement, stabilization is very important for the management of chronic osteomyelitis after debridement.[1,2] The Chongqing technique is a novel internal fixation method (a composite structure consisting of an antibiotic cement plate and internal implant) after debridement of osteomyelitis.[3] It was first reported as a temporary stabilization method after primary debridement for chronic osteomyelitis of the femur by the Southwest Hospital of Chongqing (China),[4] and its effectiveness was confirmed through large-sample cohort studies conducted by the same institute.[5,6] In 2022, this method was named "Chongqing Technique" by *Bone & Joint Research* for the first time.[3]

The rate of infection recurrence is lower with the Chongqing technique than that of traditional internal fixation methods.[7] Being different from external fixation, the Chongqing technique is free of pin-track infection,[8] and better at maintaining joint function and daily life.[3,9] In addition, they are both quite effective in infection control.[9,10]

Indications consist of Cierny-Mader type IV chronic osteomyelitis, and some Cierny-Mader type III chronic osteomyelitis (bone defects exceeding one-third of the circumference after debridement).[6] Contraindications are incomplete debridement, and compromised soft-tissue envelope, which does not allow sufficient wound closure.[6]

Recommended methods and tips are as follows: 1) radical debridement; 2) use locking plate; 3) try to restore the force line and length of the affected limb as much as possible; 4) try to use short plate to avoid infection spreading to healthy tissues; 5) locking screws can also be inserted into the bone defect via the plate to enhance stability; 6) the hole of the locking screw head should be filled with bone wax before being submerged in the antibiotic bone cement, in order to spare the heads for secondary removal; 7) antibiotic cement is used to fill bone defects and wrap plates as compactly as possible; and 8) use low-temperature saline to cool down the bone cement during the consolidation stage.

Postoperatively, patients should be encouraged to perform adjacent joint functional exercises as early as possible, and they are allowed to ambulate using double crutches, but full weightbearing on the affected limb is prohibited. The implant and bone cement are removed during the second-stage reconstruction.

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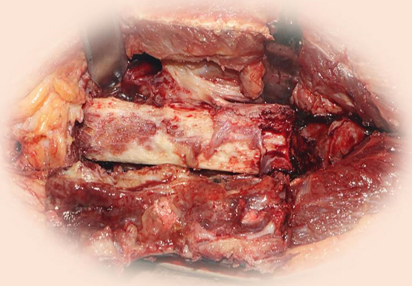
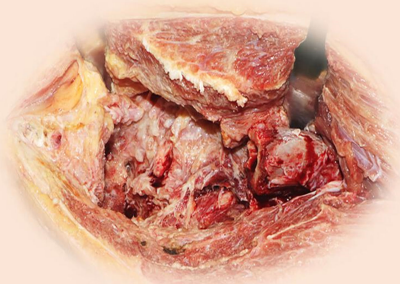
Chongqing technique

First reported by Southwest Hospital of Chongqing, China



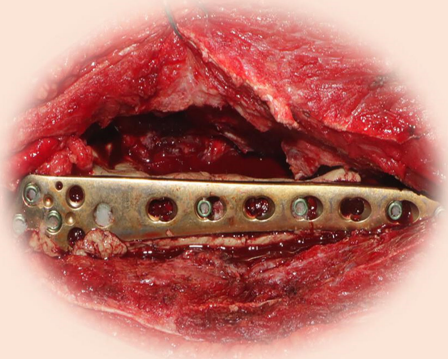


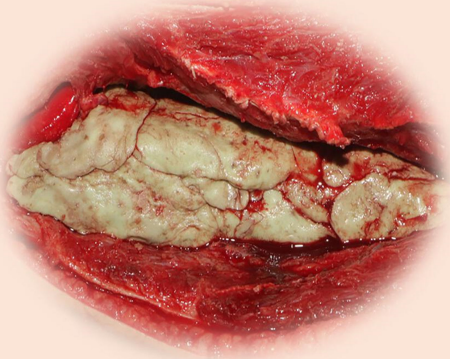
Chronic osteomyelitis after debridement

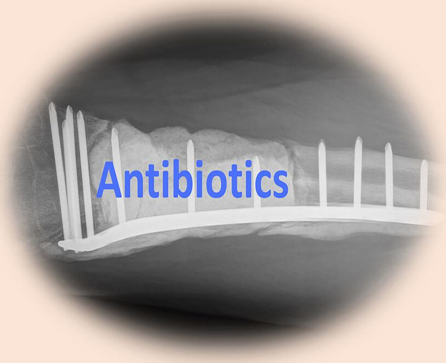
Maintain stability

Dead cavity

Bacterioplankton







Internal fixation

Cement filling

Antimicrobial cement

Chongqing technique

- Low recurrence rate of infection
- No pin-track infection
- Joint function maintained
- Facilitate daily life and care
- Local osteogenic microenvironment reconstruction

VS. Internal fixation

VS. External fixation