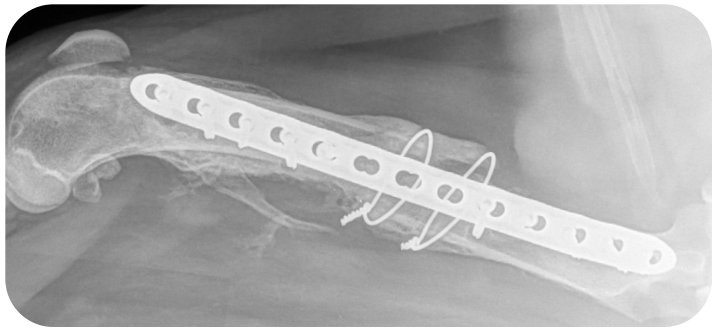
CASE STUDY

The Solution to Infection: Antibiotic-Soaked Osteoallograft® Orthomix®

Bone graft is a good substrate for delivery of antibiotics to a site. VTS makes it easy with our innovative **ANTIBIOTIC SOAK KIT**!

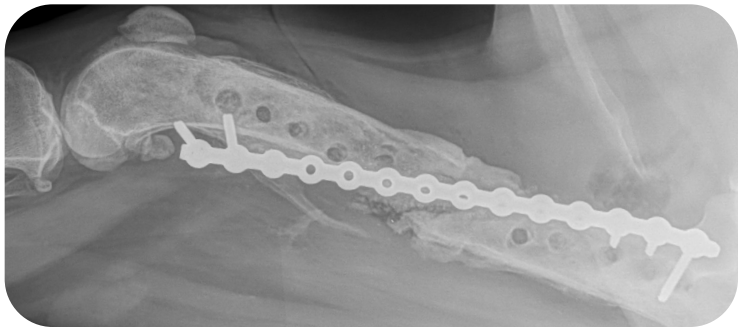
ZORRO

5 year-old, neutered male
Standard Poodle



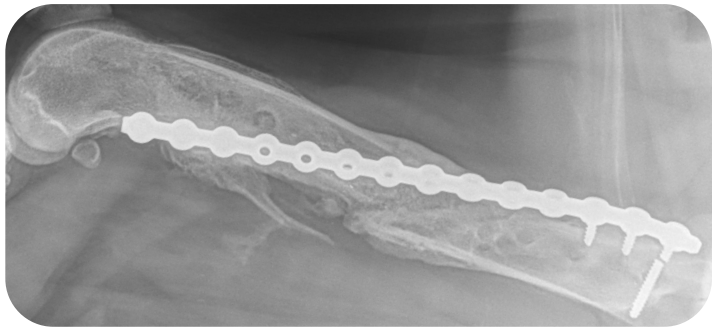
PRE-OP

At referral, radiographs and cultures showed loosened hardware and ongoing infection.



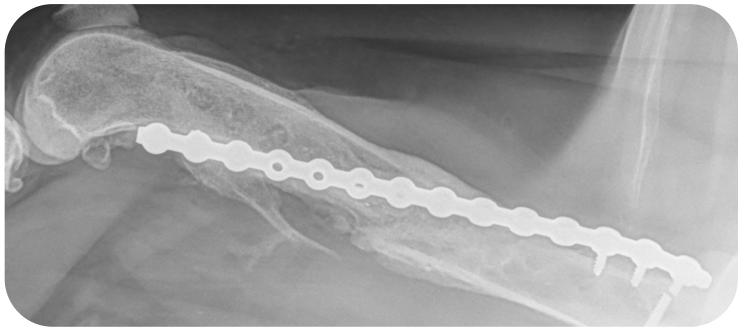
IMMEDIATE POST-OP

Antibiotic-soaked Orthomix® is packed in and around the fracture site and into the screw holes. A new plate was placed to ensure fixation.



30 DAYS POST-OP

Healing has begun. The fracture site has started to fuse, screw holes are filling in.



90 DAYS POST-OP

Excellent bone healing in this challenging setting. Zorro has returned to his normal activity level and is doing well at home.

DID YOU KNOW?

Studies show that bone graft can elute antibiotics directly to an infected area over time while providing osteoinductive signals and a strong scaffold for healing. Ask us for a list of references! Osteoallograft® Orthomix® soaked for 36 hours in Clindamycin was used in this fracture revision procedure.

The Bone Graft Experts

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Case study courtesy of Dr. Gary Ailes, Sierra Veterinary Specialists, Reno, NV

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Suggestions for Impregnating Bone Allograft with Antibiotics
For the Purpose of Eluting the Antibiotic Over Time After Placement In-Situ.

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Disclaimer: These are suggestions compiled from our experience with the processing and packaging of bone allografts and further derived from the references below. These are only our suggestions and do not constitute a clinical, medical recommendation on the part of VTS.

Enclosed is an antibiotic soak kit that will enable you to aseptically add antibiotics to an allograft, store the allograft for adsorption of antibiotics, and rinse the antibiotics in advance of the surgery date.

Supplies Needed:

Sterile antibiotic soak kit (provided)
Contents: 30cc screw-top jar, and packaging pouches x 2 (1 smaller + 1 larger) all aseptically wrapped together inside 2 blue Kimguard wrappers and contained in a Ziplock bag (everything inside the blue wrapper is sterile)
Sterile gloves
Graft
Antibiotics of choice reconstituted to liquid form
(see References for types of antibiotics assessed.)

Protocol:

2-3 days prior to surgery

1. Set the Kimguard-wrapped blue package on a back table and aseptically open the 2 Kimguard wrappers. The inside of the innermost blue wrapper will provide you with a sterile field when it is unfolded.
2. Don sterile gloves and maintain asepsis.
3. Have your technician open the graft by peeling open the foil pouch and presenting the inner clear poly pouch to the sterile field.
4. With sterile gloves, open the inner pouch (see tear notch) and remove the graft (and the spatula, if enclosed).
5. Aseptically transfer the graft to the screw-top jar for rehydration and incubation with antibiotics.
6. Cover the graft with 5 – 10 cc reconstituted antibiotics of your choice.
7. Secure the lid on the jar and place inside the smaller pouch (along with spatula, optional). Peel the tape and seal the pouch closed.
8. Fold the smaller sterile pouch and place inside the larger sterile pouch. Seal the larger pouch closed.
9. Place the double pouched graft, the Package Insert, and Transplant Record together inside the Ziplock bag.
10. Store the allograft and antibiotic at room temperature for up to 100 hours.

At time of surgery:

1. Remove the double pouched graft from the Ziplock, have your technician carefully peel open the outermost pouch and present the innermost pouch containing the graft to the sterile field.
2. Open the innermost pouch and remove the jar (and spatula, if enclosed). If the allograft is in particulate form, swirl the jar to remove any adherent pieces attached to the lid and set the jar aside for ~5 minutes to let the bone settle to the bottom of the jar.
3. Carefully and slowly decant or aspirate the antibiotics out of the jar LEAVING the bone in the jar. If you decide to aspirate the liquid with a syringe, take care not to aspirate particulate bone, which tends to float up easily.
4. Excess antibiotic concentrate should be rinsed from the bone before implantation. To rinse antibiotics not adsorbed to bone, add ~10 cc of sterile saline to the jar, replace lid and swirl as above.
5. Let settle as above and then decant or aspirate and discard the rinse solution.
6. Add bone marrow or patient blood to allograft and apply. Note antibiotic allograft use on the Transplant Record; fax or mail a copy to VTS and retain a copy for your patient records..

References:

Witso E, et al. Adsorption and release of antibiotics from morselized cancellous bone: in vitro studies of 8 antibiotics. Acta Orthop Scand 70(3):298-304, 1990.
Witso E, et al. Cortical allograft as a vehicle for antibiotic delivery. Acta Orthopaedica 76(4):481-486, 2005.
Delloye C, et al. Bone allografts: What they can offer and what they cannot. J Bone Joint Surg [Br], 89-B:574-579, 2007.