



UNITED
ORTHOPEDIC®

Freezing Tank

Orthopedic Surgical Device for Tumor



Surgical Technique Guide

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Device Description

Freezing Tank –

The Freezing Tank is designed for use in orthopedic surgical procedures to contain liquid media, including cryogenic agents, for controlled local application during intraoperative treatment. Constructed from medical-grade silicone, the device provides a sealed containment system to support the handling of cryogenic medium, such as liquid nitrogen. The flexible silicone structure allows conformity to anatomical geometry, while maintaining a secure interface to reduce leakage during use.

INDICATIONS

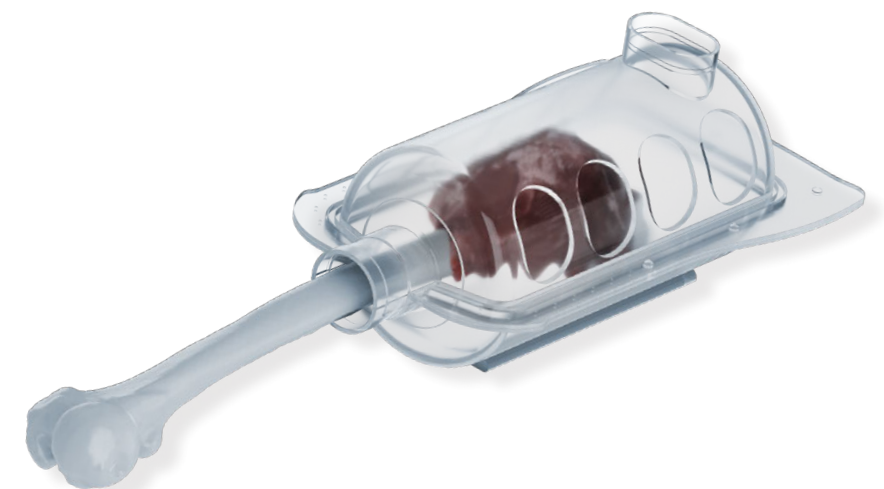
This product is intended for use in orthopedic surgical procedures for temporary containment and application of cryogenic medium.

PRECAUTIONS

1. This product is intended for single use only. Do not reuse.
2. The device should be sterilized prior to use using low-temperature plasma sterilization methods.
3. Use only within the intended scope of orthopedic surgical procedures involving manual instrumentation.

MATERIALS

Stainless steel, medical-grade silicone.



Surgical Overview



A. Tumor Exposure



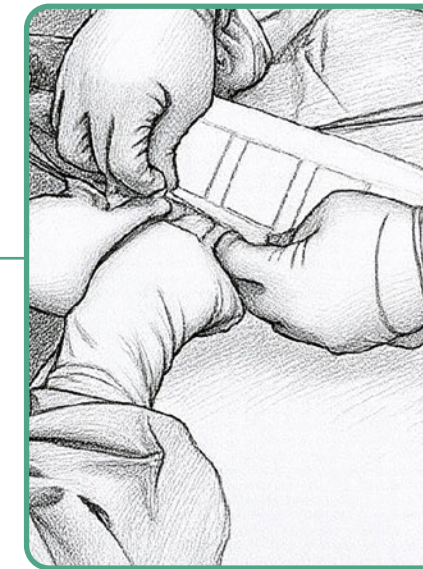
B. Cryoablation Zone Preparation



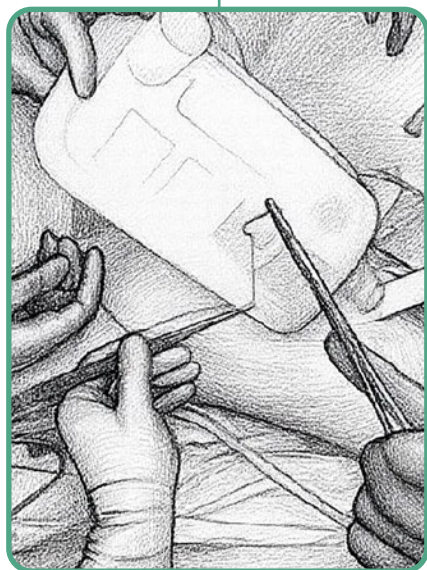
C. Junction Wrapping



D. Fit Assessment



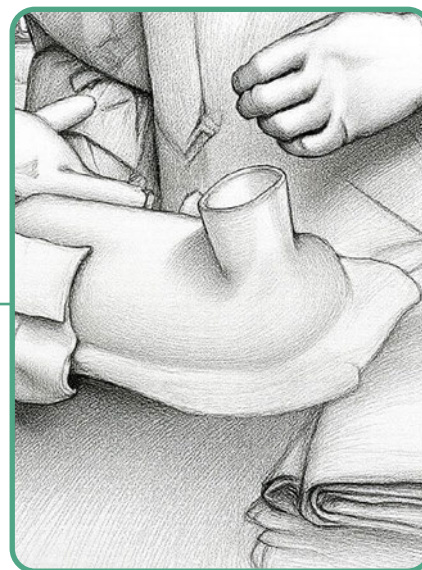
E. Gap Filling at Opening Edge



F. Tank Closure and Reinforcement



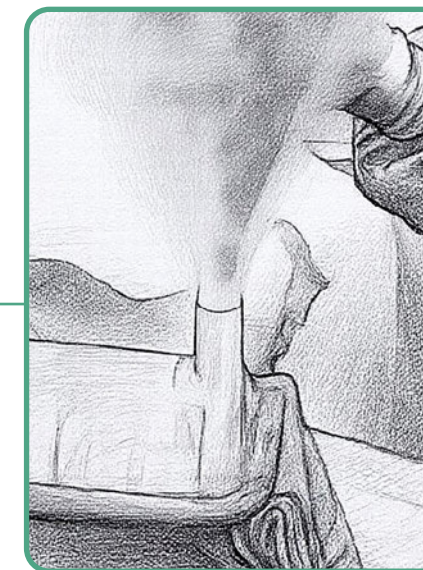
G. Ethanol Rinse and Seal Reinforcement



H. Liquid Nitrogen Infusion and Soft Tissue Protection



I. Soft Tissue Irrigation and Leak Monitoring



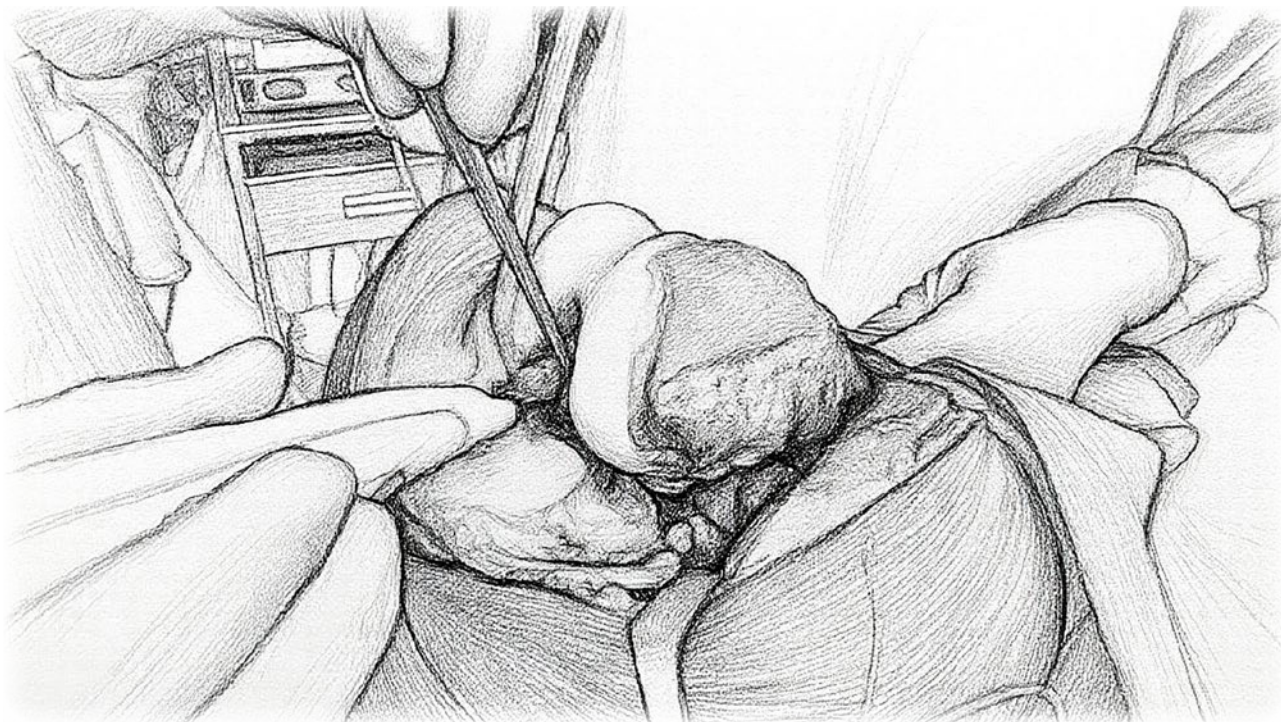
J. Initiation of Thawing (Ethanol Application)



K. Final Thawing

A. Tumor Exposure

Perform extensive soft tissue dissection to fully expose the tumor-bearing bone and dislocate the segment to allow sufficient access for Freezing Tank application.

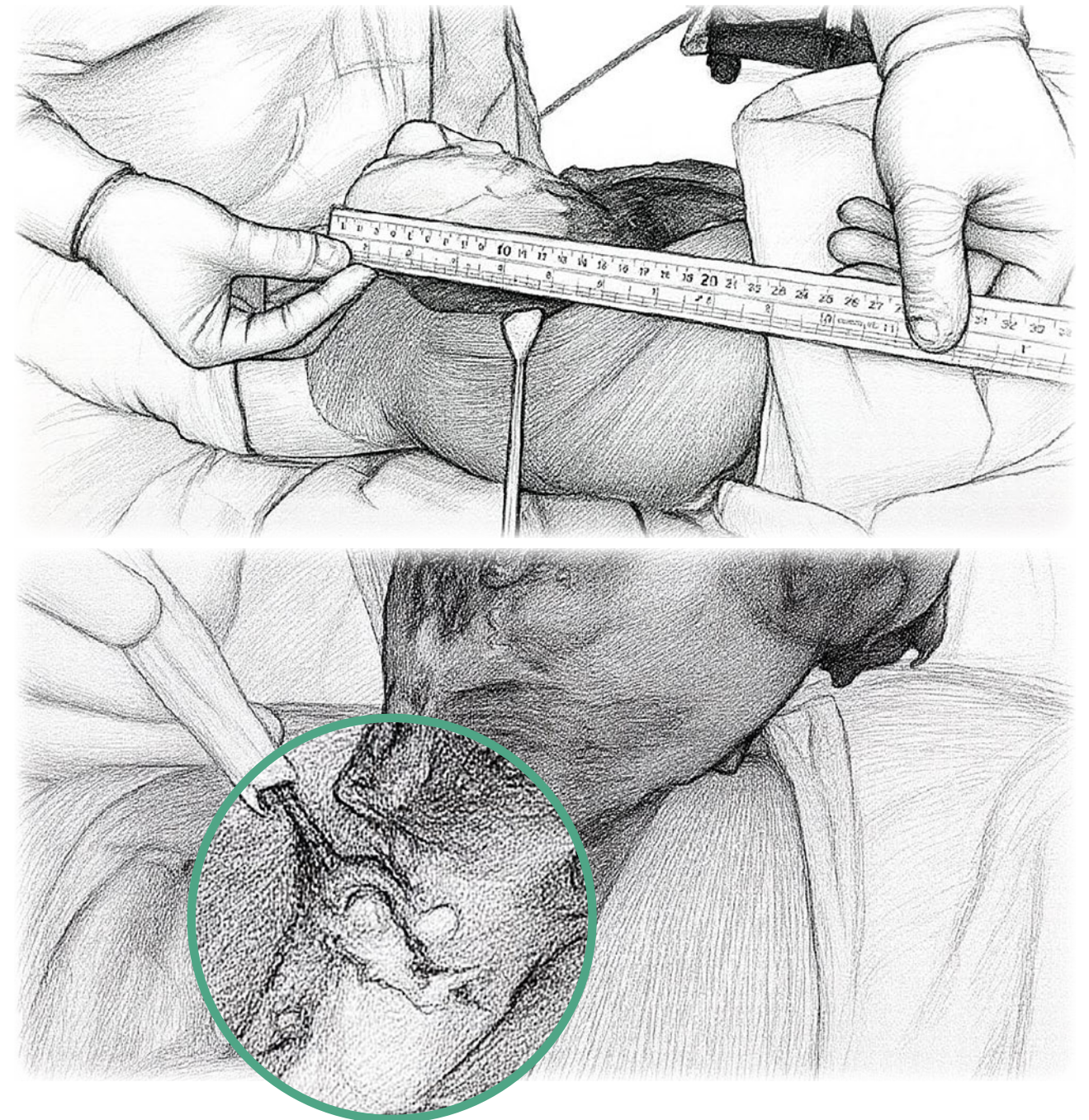


Note:

Adequate exposure of the tumor-bearing bone is essential to ensure proper positioning and sealing of the Freezing Tank.

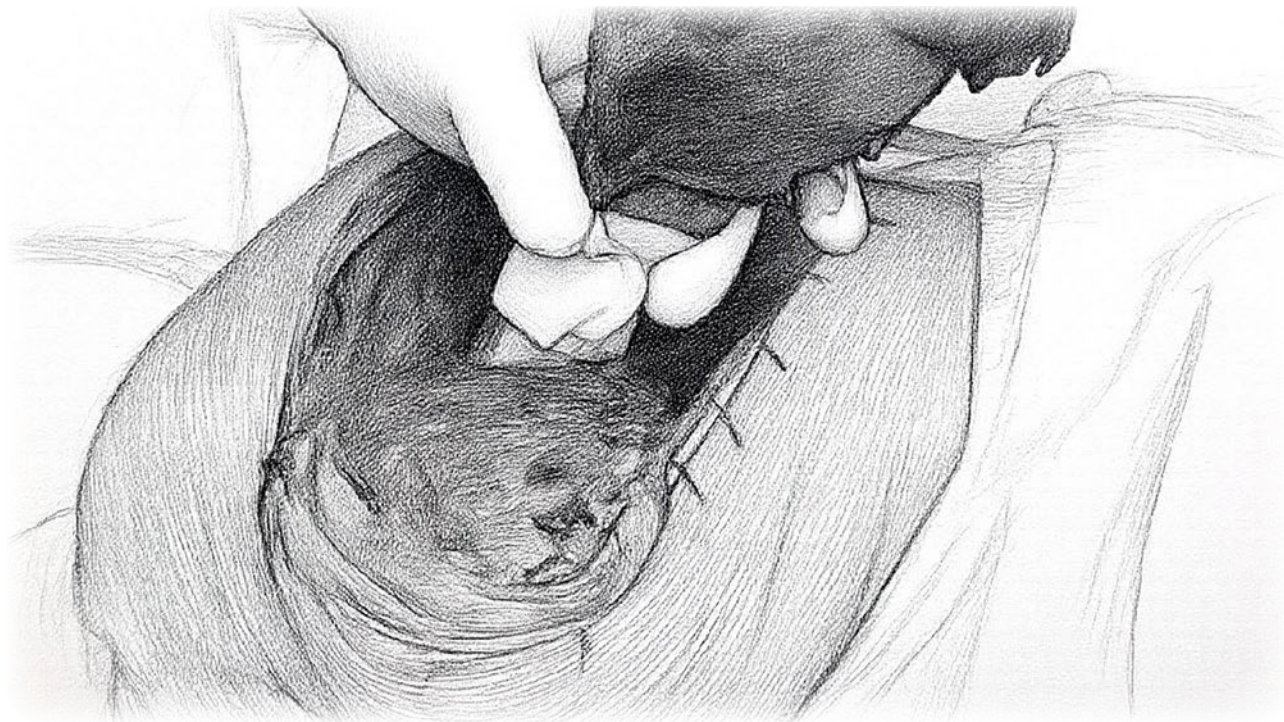
B. Cryoablation Zone Preparation

Define the intended cryoablation zone and remove residual soft tissue to ensure a clear interface between bone and the Freezing Tank.



C. Junction Wrapping

Wrap the junction between tumor-bearing and healthy bone using Sofra-Tulle (or equivalent material) to form a uniform interface.



Note:

The wrapped diameter should reach appropriate diameter to ensure conformity and sealing at the tank opening upon closure.

D. Fit Assessment

Verify that the wrapped junction achieves an appropriate fit within the Freezing Tank opening.



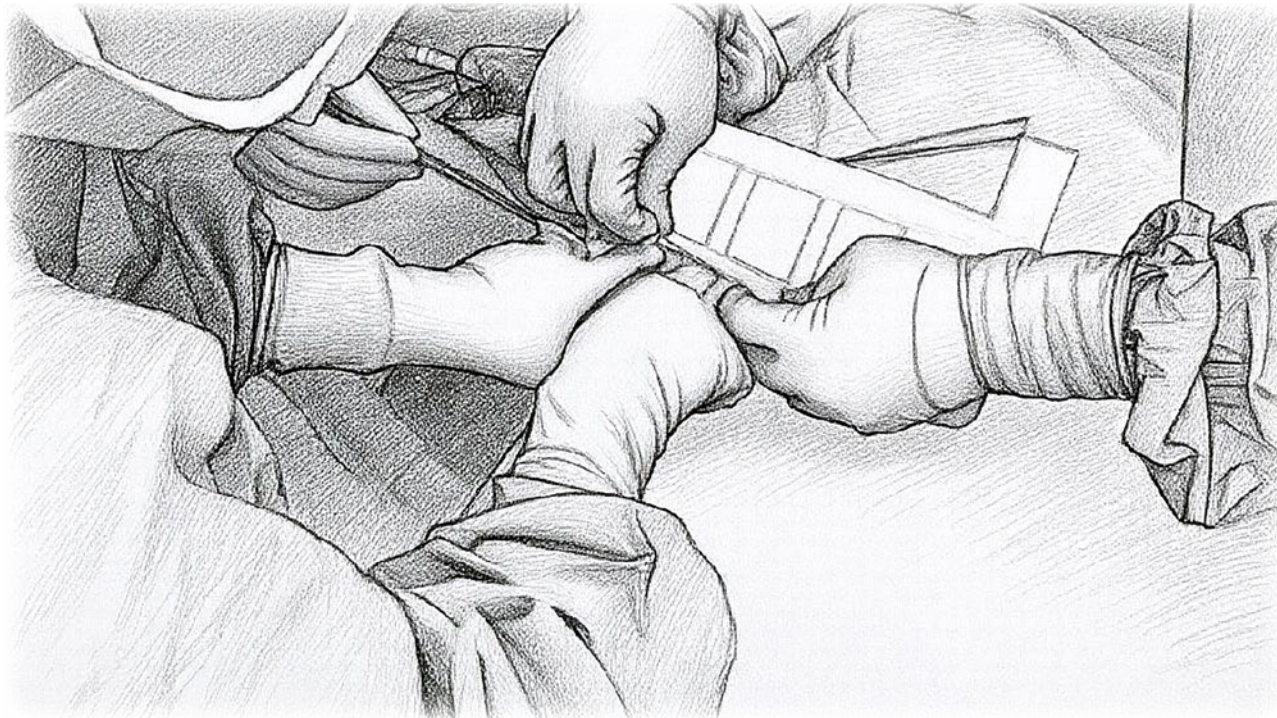
Note:

The interface should be secure without excessive tightness or looseness.

E. Gap Filling at Opening Edge

Apply neomycin or paraffin-based ointment evenly to the contact surfaces at both sides of the Freezing Tank opening.

Close the Freezing Tank to bring the coated interfaces into contact.



F. Tank Closure and Reinforcement

Close both sides of the Freezing Tank by engaging the built-in interlocking features along the opening edge.

Further secure the closure by placing sutures through the designated holes along the silicone edge.

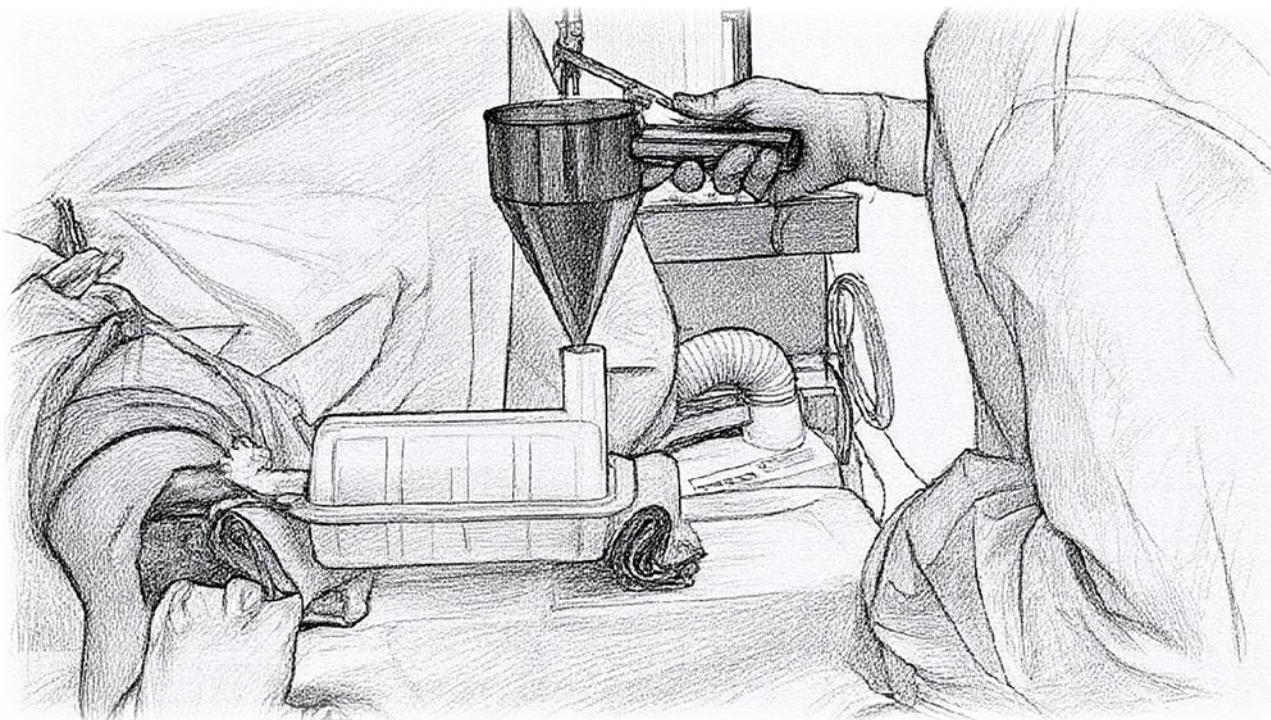


 Note:

Suturing provides additional reinforcement to maintain closure integrity during cryogenic application.

G.Ethanol Rinse and Seal Reinforcement

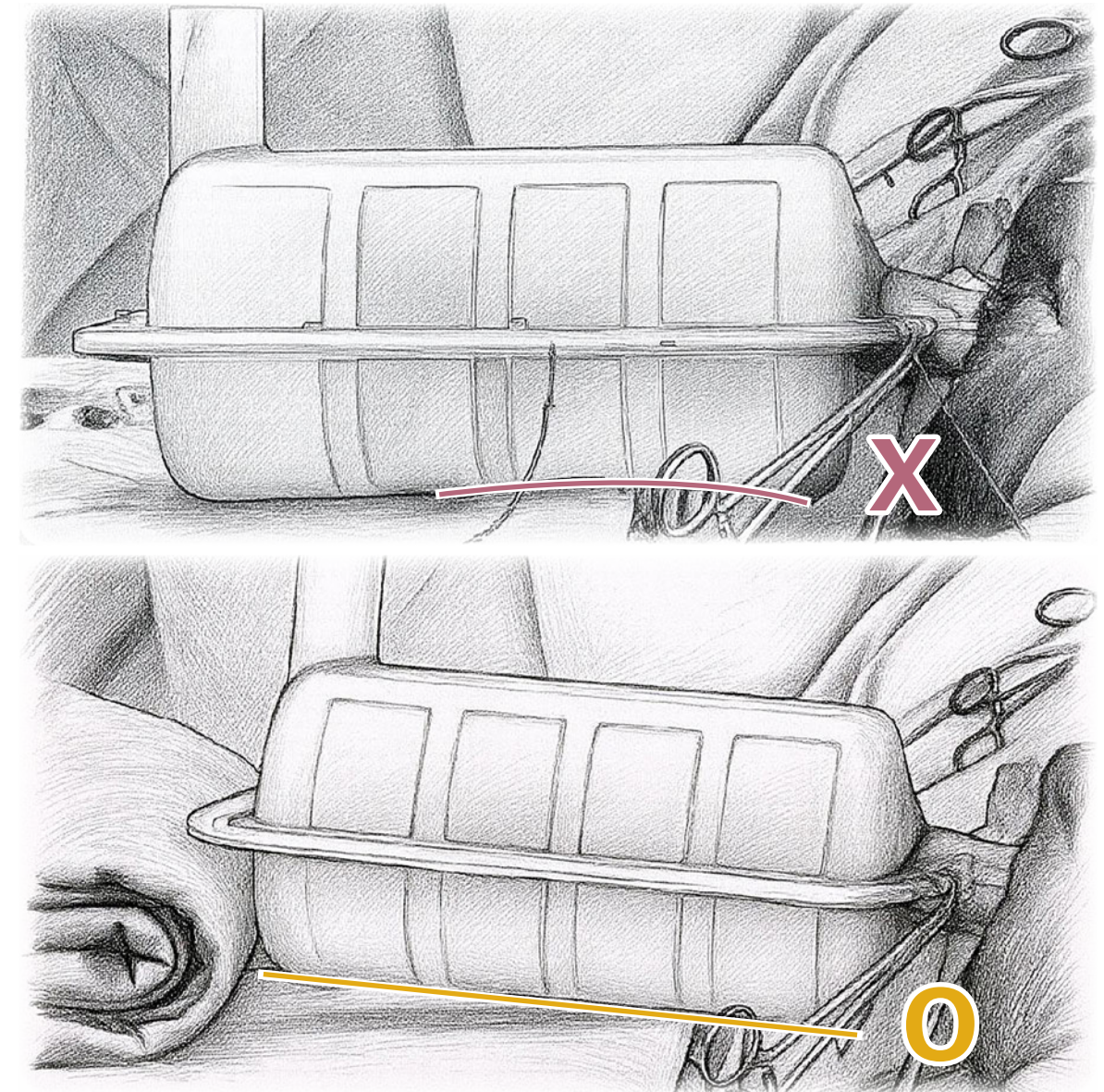
Pour approximately 50 ml of 95% ethanol over the junction area for leakage verification.



Note:

In addition to leakage verification, ethanol interaction with the ointment may promote consolidation, improving sealing at the interface.

G.Ethanol Rinse and Seal Reinforcement



Caution:

Do not allow compression or deformation of the Freezing Tank base prior to liquid nitrogen infusion. Mechanical stress applied to the silicone structure at room temperature may lead to material cracking upon rapid freezing. Provide adequate support (e.g., folded surgical drapes) to maintain the natural shape of the tank.

H. Liquid Nitrogen Infusion and Soft Tissue Protection

Infuse liquid nitrogen into the Freezing Tank in a controlled manner.



Note:

The Distributor provided with the system may be used to facilitate controlled and convenient delivery of liquid nitrogen.

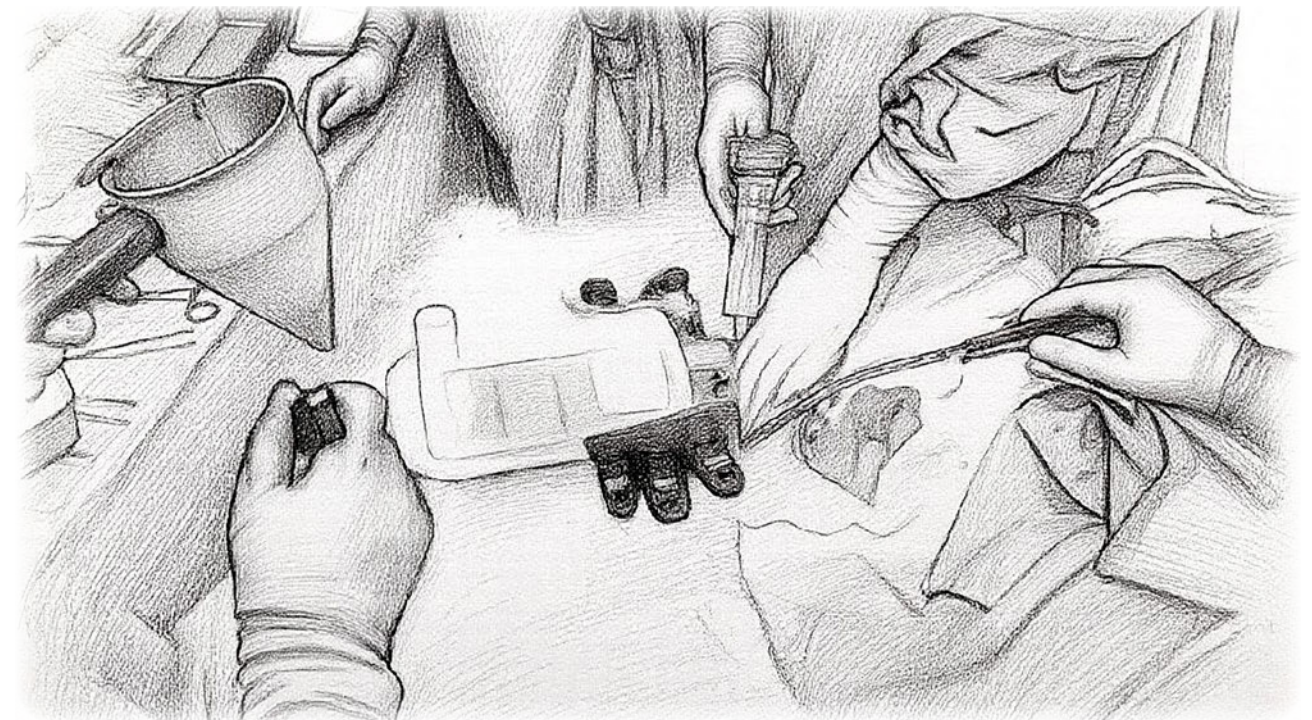
Caution:

Protect surrounding soft tissues from direct contact with the Freezing Tank to prevent frostbite. A barrier (e.g., an inflated medical glove or equivalent insulating method) should be placed between the tank and adjacent tissues.



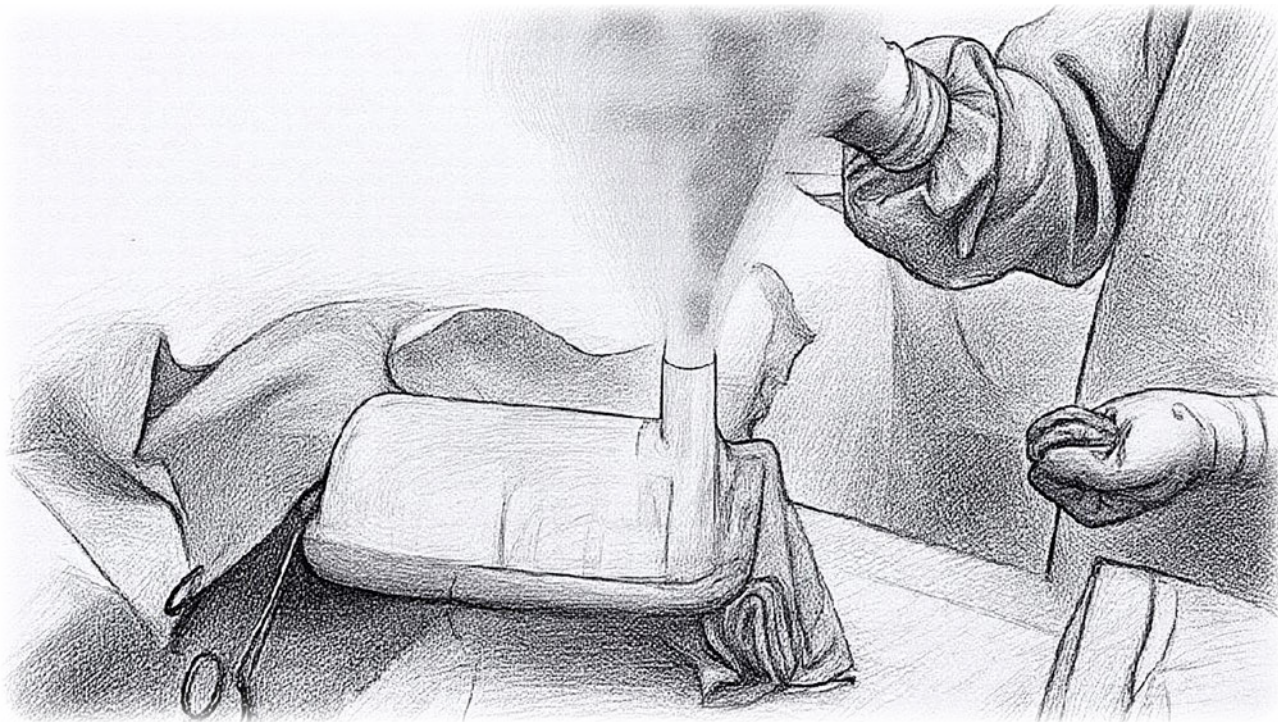
I. Soft Tissue Irrigation and Leak Monitoring

Continuously irrigate surrounding soft tissue with warm normal saline and monitor the junction. Maintain adequate liquid nitrogen levels and continue freezing for approximately 20 minutes. Ensure no leakage of liquid nitrogen throughout the procedure.



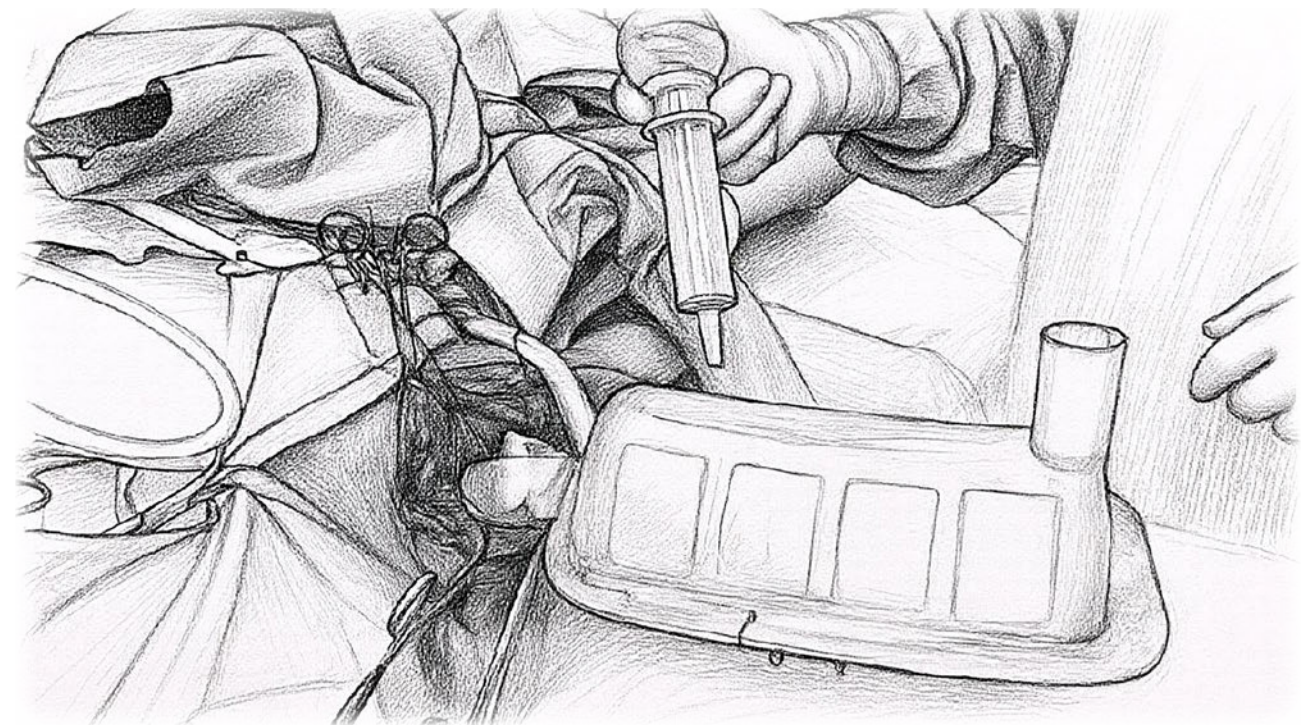
J. Initiation of Thawing (Ethanol Application)

Begin thawing by applying ethanol to facilitate evaporation of residual liquid nitrogen.



K. Final Thawing

Irrigate the Freezing Tank with warm physiological saline to accelerate the thawing process. Continue gradual thawing of the treated area over approximately 30 minutes.



Order Information



Catalog Number	Description
	FZT Freezing Tank Container
	DL2000 Double-layer Insulation Cylinder
	DIS Cryo-Gel Distributor with Ladle



Each Step
We Care

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