

Alcor Case 217

Case Report



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Table of Contents

1. Summary.....	3
2. Deployment.....	3
3. Patient Assessment	3
4. Patient Recovery and Transport.....	3
5. Cooling to Liquid Nitrogen Temperature.....	4
6. Cooldown Graph and CT Scans	5

1. Summary

Information was derived from multiple sources and was all converted to Mountain Standard Time (MST). For de-identification, dates are not shown. T-0 represents the date of cardiac arrest, T-X represents occurrences before T-0, and T+X represents occurrences following T-0.

Alcor Patient 217 was member who was originally cryopreserved by their family in 1989. The member was kept on dry ice in an insulated cooler in a shed on the family property until coming into Alcor's care in August 2023.

The cryogenic cooldown by Alcor was initiated on T+0 days at 06:18 hrs and terminated on T+6 days at 06:55 hrs.

2. Deployment

The patient's family negotiated with Alcor to take over the care of this patient preserved in dry ice. Deployment consisted of the entire Alcor Deployment and Recovery Team (DART) arriving at the patient's location on the day prior to retrieval.

3. Patient Assessment

When the DART team arrived at the location where the patient was stored, the storage was seen to be inside a Tuff shed. The Tuff shed housed an insulated cooler. Inside the cooler was a Ziegler case with the patient wrapped in a thick camping-style sleeping bag surrounded by approximately 500 kg./1102 lbs. of dry ice. A quick inspection under the sleeping bag revealed that the patient appeared well preserved.

4. Patient Recovery and Transport

The day of the recovery, the team rendezvoused in a town nearest to the patient's location. The team then ascended the mountain on a dirt road to the patient's uninhabited family property where the patient had been stored for years on dry ice which had been hauled in on a regular basis over the years. Because there had never been on-site support or a living area for someone to stay long-term to see to the maintenance of this patient, the team had no idea what they would find. Upon arrival, the team needed to assess the situation and considered the requirements for relocation of this patient.

The team removed all dry ice surrounding the Ziegler case, then removed the entire Ziegler case and placed it in the transport vehicle, where it was then covered again with the dry ice. The Ziegler case and dry ice were then secured and covered in insulating material

The patient remained under dry ice at all times except for two brief periods. The first was during transfer from the shed to the transport vehicle, which took 11 minutes. The second exposure was when the patient was transferred from the vehicle to the pre-chilled ShortBoy dewar, which took 7 minutes. During this second exposure, the patient remained wrapped in the sleeping bag within the Ziegler case, except for a quick visual inspection of the patient's condition, taking about one minute.

5. Cooling to Liquid Nitrogen Temperature

Computer-controlled cryogenic cooldown was initiated at 06:18 hrs on T+0 days, plunging to -80°C and descending thereafter at -1°C/hour to liquid nitrogen temperature.

As this was a remote location, the LN2 was supplied by 200L portable Vacuum Insulated Evaporator (VGL) tanks. The LN2 tanks needed to be changed when they were exhausted. Those tank changes took place at:

T+2 days at 06:30 hrs

T+3 days at 12:30 hrs

T+4 days at 14:30 hrs

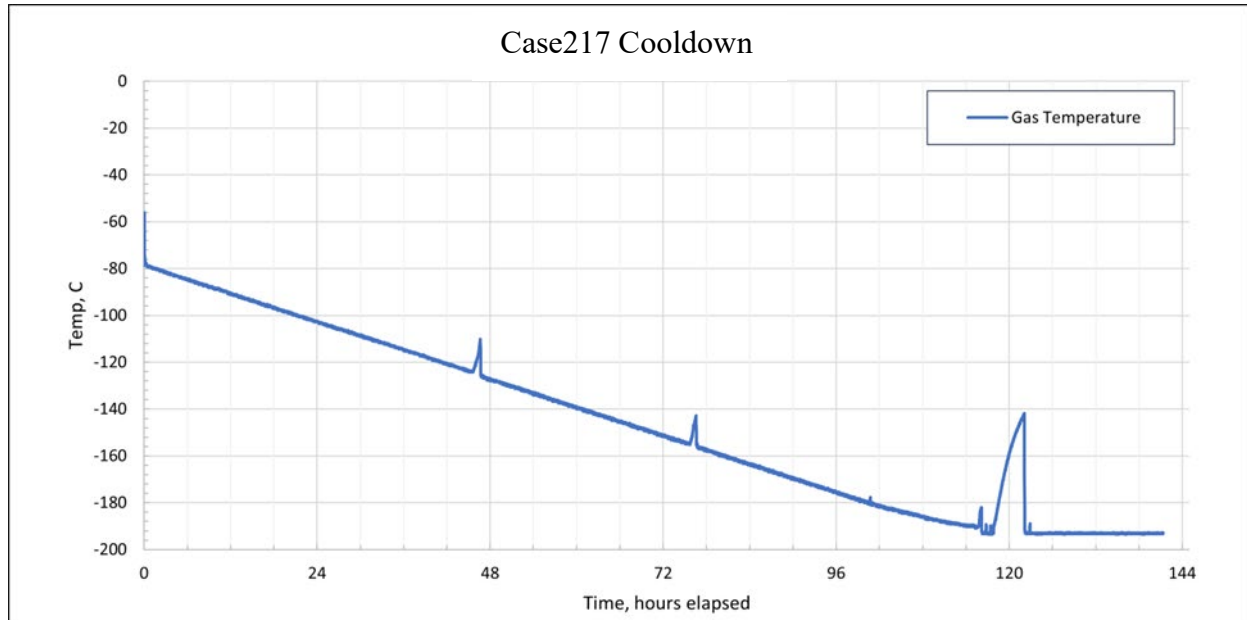
T+5 days at 06:00 hrs

The LN2 valve failed at 07:30 hrs on T+5 days. The valve was replaced, and cooldown was resumed on T+5 days at 11:00 hrs. Other than the time required to replace the valve, the patient was maintained at a stable temperature and no deleterious effects occurred as a result of valve failure.

On T+6 days at 06:55 hrs, a mostly uneventful cooldown was terminated. The dewar was topped up manually using portable VGL tanks and connected to a dedicated computer-controlled fill monitoring system.

6. Cooldown Graph and CT Scans

Short temperature spikes in the below cooldown graph correspond to times when the 200L LN2 supply dewars were being swapped out. The largest spike occurred due to the primary valve failing. This was resolved by replacing the valve.



Cryoprotectant Distribution (Post-cryopreservation CT scan)

Because this was a straight-freeze cryopreservation, no post-cryopreservation CT scans were obtained.