

Alcor A-1781

Case Report



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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.

A-1781 was an 81-year-old non-member who had previously had neuro cryopreservation arrangements for 25 years (see the Patient Assessment section below). This was a post-mortem notification. Per the UK death certificate, the immediate cause of death was atrial fibrillation following multi-organ failure and community acquired pneumonia (streptococcus pneumoniae /parainfluenza). Cardiac arrest was estimated by a funeral director in the UK to be on T-0 days. Alcor was notified on T+19 days at 21:30 hrs.

This was a cryopreservation without cryoprotection (a straight freeze procedure). The patient was air transported to Alcor on dry ice for cryogenic cooldown. The patient arrived at Alcor on T+32 days at 16:50 hrs. The cryogenic cooldown was initiated on T+32 days at 17:49 hrs and terminated on T+36 days at 19:15 hrs. The patient was transferred to long-term care at liquid nitrogen temperature at 13:35 hrs on T+154 days.

2. Patient Assessment

T+19 days

Alcor received a call at 21:30 hrs from a friend of the patient that the patient had been found deceased in his home after a welfare check requested by the friend, who wishes to remain anonymous. The friend did not have much information, only that the member had been deceased since T-0 days.

T+20 days

Alcor's Social Services Director (SSD) contacted Cryonics UK at 09:14 hrs to request assistance with this case. One member (who wishes to remain anonymous) of that organization acted as the main liaison between the initial UK funeral director, the international funeral director in London that has previously worked with Cryonics UK, and Alcor.

Pending a service planned by the family, the patient had been held in a funeral home in a refrigerated room at 4°C. The patient was packed in approximately 330 lbs. of water ice at about 10:00 hrs.

Funding status for the patient's cryopreservation was unknown at that time, however, because this was a long-term member and well known in the cryonics community, Alcor agreed to move forward with the patient's cryopreservation with the information from Cryonics UK that a law in England allowed funeral expenses to be paid by the estate, and the hope that Alcor services would be considered a funeral expense.

3. Patient Recovery and Transport

T+21 days

An international funeral home in London contracted by the UK liaison had the patient transferred to their facility in London to prepare for dry ice cooldown and transport to Alcor. The patient was packed in dry ice (the time dry ice was applied, and the amount of dry ice were not recorded).

T+22 through T+23 days

Nothing of significance occurred during these days.

T+24 days

The dry ice on and around the patient was replenished. (No details provided about when, how much or where placed).

T+25 days

Alcor's contact with Cryonics UK found the patient's family unwilling to provide documents needed by the international funeral home, so he ordered a copy of the death certificate on a priority basis to provide this to the funeral home. A copy was also provided to Alcor. The funeral home contacted the US Embassy to learn what would be required to ship the patient to Alcor. One requirement was a letter on Alcor letterhead to confirm that Alcor would receive the patient; Alcor supplied the letter following a template provided.

T+26 through T+31 days

The patient remained at the London funeral home on dry ice while waiting for all the demands from the US Embassy to be met. Dry ice was continuously replaced, but no records were kept.

T+32 days

The patient left London at 02:35 hrs MST (09:35 hrs in London) and at 15:13 hrs the patient had arrived at Phoenix Sky Harbor airport and was confirmed to be in the cargo area. The patient was released from US Customs at 15:29 hrs. The patient arrived at Alcor at 16:50 hrs at dry ice temperature (-80°C). The cephalic isolation was completed at 17:25 hrs while the patient was still mostly covered with dry ice and in the shipper.

4. Cooling to Liquid Nitrogen Temperature

Computer controlled cryogenic cooldown was initiated at 17:49 hrs on T+32 days plunging to -110°C (because the patient was already at -80°C) and descending thereafter at -1°C/hour to liquid nitrogen temperature. On T+36 days at 19:15 hrs, an uneventful cooldown was terminated. The patient was transferred to long-term maintenance at liquid nitrogen temperature on T+154 days at 13:35 hrs.

5. Timeline and time summaries

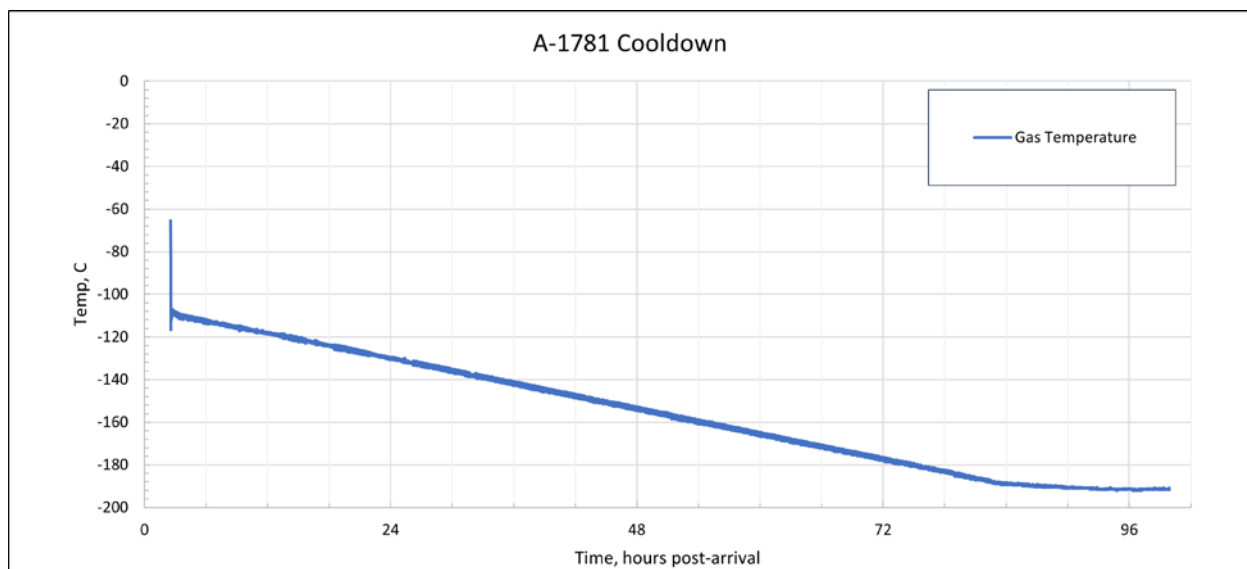
Timeline

T-0	12:00	Time of cardiac arrest (estimated)
T+19	21:30	Notification of legal death
T+20	09:14	MRD contacted Cryonics UK
T+20	10:00	Start water ice cooling (estimated)
T+20	12:00	International funeral home contracted (estimated)
T+21	12:00	Start of dry ice cooling (estimated)
T+32	12:00	Dry ice temperature achieved (24 hours)
T+32	02:35	Patient shipped from remote location (estimated)
T+32	16:50	Arrival of patient at Alcor (- 80°C)
T+32	17:25	Completion of cephalic isolation
T+32	17:49	Start of patient cryogenic cooldown to -196°C
T+36	19:15	End of cooldown at -196°C
T+154	13:35	Transfer of patient to long-term care at -196°C

Time Summaries

Event Duration hr:min		days	time	
Stabilization				
465:30	From:	T-0	12:00	Time of cardiac arrest (estimated)
	Till:	T+19	21:30	Notification of legal death
26:00	From:	T+20	10:00	Start water ice cooling (estimated)
	Till:	T+21	12:00	Start of dry ice cooling (estimated)
504:00	From:	T-0	12:00	Time of cardiac arrest (estimated)
	Till:	T+21	12:00	Start of dry ice cooling (estimated)
772:50	From:	T-0	12:00	Time of cardiac arrest (estimated)
	Till:	T+32	16:50	Arrival of patient at Alcor (- 80°C)
00:35	From:	T+32	16:50	Arrival of patient at Alcor (- 80°C)
	Till:	T+32	17:25	Completion of cephalic isolation
773:25	From:	T-0	12:00	Time of cardiac arrest (estimated)
	Till:	T+32	17:25	Completion of cephalic isolation

6. Cryogenic Cooldown Graphs



7. CT Scans

Cryoprotectant Distribution (Post-cryopreservation CT scan)

As this was a cryopreservation without cryoprotection (straight-freeze), no post-cryopreservation CT scans were obtained.