

Medical Report - XIV Indian Antarctic Expedition

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The 14th IAE Indian Antarctic Expedition sailed out of Mormugao on 17 Dec 94 and reached Antarctica on 10 Jan 95. The voyage was completed uneventfully except for the few cases of sea sickness. All the shelf operations and the transport of personnel and material were completed without any mishap.

A case of partial amputation of great toe under general anaesthesia was carried out for a member of the 13th IAE along with the doctors of the 13th IAE. Two more cases of minor injuries were attended to onboard MV Polar Bird.

During the entire period of the 14th expedition the members enjoyed good health except for the occasional injuries arising due to load lifting and good amount of outdoor work. During the stay at Maitri the MI room was refurbished, painted. All essential equipments e.g. defibrillator, ECG machine and suction apparatus (foot and electric operated) were repaired and made functional. All anaesthetic equipment along with various fittings were tested and made serviceable.

The 15 mA X-ray machine was tested and films of normal cases and some dental X-rays taken and development of these was done so as to get a feel of the method and standardise radiological procedures. Similarly laboratory equipments were checked and kept in order.

On the 07 Feb 96 an expedition a member of the 15 th IAE sustained fracture femur (R) due to a vehicle accident. Closed reduction was done under general anaesthesia by the anesthesiologist/surgeon of 14th IAE along of the 15th IAE and doctor from Russian Station Novo. The case was eventually evacuated by air to India from Mauritius on 12 Mar 96.

One of the members of the 14th IAE accidentally fell into the icy waters at India Bay when a portion of the shelf on which he was standing caved in. Immediate measures to treat possible hypothermia was instituted with complete recovery of the patient.

An outline of the medical facilities at Maitri is as follows:

1. Medical Facilities at Maitri

(a) Maitri clinic comprises a two-room complex each of approx. 10' x 8' size. One of these serves as the MO's examination room-cum-dispensary while the other is Operation theatre-cum-dressing room-cum-store.

All pathological investigations can be in the "A" Block room which has been insulated and heating provided by convector and radiator. Presently due to extreme paucity of space it is not possible to undertake any major surgical procedure in the OT. In this respect it is relevant to point out that a case of partial amputation of great toe of a member of the 11 WOT was carried out onboard MV Polar Bird in the month of Mar 95 and in the month of Feb 96 a case of Fracture femur was operated upon in the Chaupal for want of space!

Importance of having a spacious OT at Maitri for any major surgery cannot be overemphasised.

We have recommended a containerised hospital complex away from the main Maitri building and pending which an extension of the present OT.

b) Anaesthesia : There are two Boyle's apparatus of which one is portable but is nonfunctional due to faulty flowmeter. Both the machines are old and need urgent replacement with adequate spares e.g. washers for cylinder yoke, tubings and flowmeter and Adam's valves.

It is recommended that the 15th team can put in a demand for a new Boyle's machine MK-IV of standard make — Indian Oxygen Ltd. This team has brought a Pulse Oxymeter which is an useful aid to provide safe Anaesthesia.

c) Surgical: Adequate stock of surgical instruments and linen is available for any major or minor surgical procedure. Two autoclaves are available and functional. Adequate no. of surgical drums are also available.

2. Medical Attendance

a) Introduction : Nowhere is the dictum "Prevention is better than cure" more true than in the isolation of Antarctic winter. The extreme physical environment and the unusual psycho-social conditions of living in a closed community isolated from the rest of the world contribute equally to the medical problems encountered. This was repeatedly emphasised by the medical officers both formally and informally. Prompt medical attendance and probably constant presence of medical officers in all convoys, has helped 12 WOT to spend a safe and injury free winter.

b) Medical Problems Encountered ; Apart from scattered routine minor problems like dyspepsia, diarrhoea, aphthous ulcers, headache etc., which were

few and far between, the following major groups of problems were encountered by this team —

- i) Musculo-skeletal Trauma — Common cases seen were, sprain ankle, contusion injuries, finger/toe nail haematoma, contusion injuries to the fingers. Apart from this a few lacerated/incised wounds were also seen. There were no fracture cases. All cases were managed conservatively although the healing time was delayed.
- ii) Low Backache — This was a recurrent problem, particularly during loading and unloading. Managed conservatively.
- iii) Ophthalmic Problems — One was due to exposure to snowdrift during convoy and two were due to exposure during arc welding. One case of blunt trauma eye. All improved with conservative management.
- iv) Cold Injuries — There were 2 cases of grade I frost bite of fingers, responded well to conservative management. However hyperaesthesia persisted for a long time. Chilblains was a regular and frequent problem among the convoy team having to work under very low temperatures with high wind chill on ice.
- v) Sleep Disorder — A common problem during polar nights, nothing to be worried about, usually resolved on its own.
- vi) Dental Problems—Dental problems are most nagging and need prompt relief. Proper dental treatment of all dental ailments before coming to Antarctica is a must for all members. Please refer to the recommendations with justifications for inclusion of a Dental Operating Room Technician in the medical staff.
- vii) Bums — There was a case of superficial burns of the face. The individual sustained bums when trying to force open a cooker while still hot. Managed conservatively.
- viii) Skin Disorders — Dryness of the skin was a common problem particularly during the polar winter months. Light oil massage of the body was recommended. One case of dermatitis was seen probably due to contact with waste water during pumping.

3. Recommendations

a) Case has already been taken up with DOD by this team for provision of a containerised hospital complex away from the main Maitri building for the following reasons —

- i) Paucity of space for any semblance of effective treatment in the present clinic.

The case of fracture femur on Feb 07 was carried out in the Chaupal.

ii) Difficulty in bringing in any stretcher borne casualty into the clinic from outside due to lack of proper access. Extreme difficulty was faced, while trying to bring the patient with fracture into the MI room.

While a complex as recommended by us may or may not materialise and even if it does, will take time, it is recommended that the O.T. in the present clinic may be extended to provide more space.

b) It is also recommended that if a reasonable moderation in alcohol consumption can be ensured among the members of the wintering team many an unpleasant/unwarranted situation can be avoided and probably ensure healthier interaction among over- wintering members. Planned indoor activities such as games and regular outdoor work even if for a short while, will go a long way in alleviating the boredom that is inevitable during the polar nights.

c) In both the 13th and 15th IAE teams, the services of an anesthesiologist was needed which was provided by the 14th IAE. This clearly brings out the need for every expedition to have a full complement of medical staff e.g. surgeon and an anesthesiologist.

It is also felt that an effort may be made to accommodate an additional skilled medical personnel in the form of a Dental Operating Room Technician. He would be of immense help in regular maintenance of equipments/drugs. He could help out with preparation of OT and assist in operations. On selection he could be given a basic training in radiological/bed-side Lab procedures.

d) It is recommended that the ship's charter for every expedition should include the following facility so that any eventuality arising during voyage can be taken care of. An OT complex; an MI room with one/two patient beds and a bathtub for treating hypothermia cases ; Basic Emergency equipment for resuscitation e.g. AMB U BAG, Portable Boyle machine with oxygen cylinders, surgical equipments for treating injuries. All these equipments for the voyage could be kept in Antarctic centre Vasco to be taken over by the doctors of the new team and the same can be returned to Vasco office by the doctors of the returning team.