EMERGENCY SUCTION APPARATUS

Dear Editor,

A simple emergency suction apparatus made by using an intravenous fluid glass bottle, India rubber tube (IR tube) and an irrigation bulb is described. It is very useful for management of casualties at accident sites.

Airway obstruction due to blood, saliva, or vomitus is one of the prime causes of death in any accident victim especially in the battle field. These fluids can be removed effectively by using suction. The Regimental Medical Officer's (RMO) may not have the sophisticated, power-operated suction apparatus at the accident sites. A very simple suction apparatus has been devised and kept ready at our Regimental Aid Post (RAP) to overcome this handicap.

The emergency suction apparatus has been made by using an intravenous glass bottle with rubber stopper, 2 glass tubes, IR tube having 5 mm internal diameter and 75 cm length and a large rubber irrigation bulb with a capacity of 100 mL.

The IR tube (length 75 cm) is connected to the glass tube in the intravenous glass bottle. The other glass tube in the intravenous glass bottle is connected with a 10 cm long piece of IR tube. The other end of this 10 cm piece is in turn connected with the rubber irrigation bulb by using a plastic connector, which is commonly obtained

from an intravenous giving set.

A negative pressure is created in the suction bottle by completely pressing the rubber bulb. The fluid can be sucked out from the oropharynx by placing the terminal open end of the large IR tube inside the oropharynx and gradually releasing the external pressure on the bulb. Rapid collection of fluid inside the suction bottle will be observed. The end of this large IR tube may be connected with a smaller soft rubber catheter for use in nostrils. If any blood clot comes in contact with the catheter end, it can be taken away from the oropharynx by the negative pressure in the IR tube and can be discarded by pressing the bulb again. Thus we can avoid blockage inside the tube. The suction process is repeated by pressing the irrigation bulb and releasing the pressure on the bulb again. The rate of suction is 350-400 mL/min.

This emergency suction apparatus is made from simple, easily available materials at the RAP. This is an effective suction apparatus and can be carried easily in a haversack. It is an important and useful resuscitation apparatus in the emergency medical service at the RAP.

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EMBALMING OF BODIES FOR TRANSPORTATION

Dear Editor,

At present there is no law regulating the practice of embalming. A national symposium on embalming of bodies with HIV (AIDS), hepatitis B virus and other notifiable infections held at the All India Institute of Medical Sciences, New Delhi in March 91 formulated general guidelines and policies for embalming infected bodies. Recommendations for embalming methods and mixtures, staff, equipment and accommodation for embalming facility, application proformas and embalming certificates were also made.

There is no special training given for this procedure in India and the departments of Anatomy or Pathology or Forensic Medicine of medical institutions have taken the responsibility. Embalming is mandatory for transportation of bodies by civil aircraft. At 92 Base Hospital we required the following documents before embalming was undertaken:

Death certificate

Request from the Officer Commanding (OC) unit

Battle casualty certificate from the OC unit

Certificate of autopsy completion

A written order from the hospital to the medical officer to carry out embalming.

The embalming fluid used initially was 50 per cent formalin and 50 per cent methylated spirit. Whenever there was a shortage of methylated spirit only 50 per cent formalin was being used. About 4 litres of embalming fluid is required for an adult. A 100 mL or 50 mL glass or plastic syringe with a long large-bore needle was used for injection. The embalming fluid was injected into the thoracic and abdominal cavity and through the inner canthus of eyes into the brain. If delay in transportation or funeral was anticipated the limb muscles were also injected. If only the body cavities were injected the time taken was about 15 minutes, while injection of limbs took another 15 minutes. Autopsied, eviscerated body cavities were packed with formalin-soaked cotton and then closed. In

these the embalming fluid was also injected into the limbs.

The main drawback of this procedure is the irritation to the eyes and lungs of the embalmer due to formalin fumes caused by spillage during the procedure.

Some additional chemicals suggested for improving quality of embalming are, glycerol for making tissues softer and preventing drying, alcohol to facilitate penetration, 2.5 per cent phenol as an antifungal agent, eosin to improve colour of the body, sodium acetate as anticoagulant, and chelating agents to denature enzymes, thereby preventing decomposition [1]. Technical cosmetology can also be done to give a life-like appearance to the cadaver.

The 3 methods recommended are the gravity method, electric pump method and injection method. The ratio of formalin:methylated spirit recommended is 30:65 for international transit, 20:80 for local transportation and 55:45

for infected bodies [1].

This modified simple injection technique for embalming of bodies for local transportation not requiring preservation for more than two days was found to be satisfactory. Probably the cold weather and use of ice blocks in summer has helped in the success of this technique.

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