

Dechoker Clinical Evaluation

Thursday, February 23, 2017

Dr. Reichman,

Good morning! I wanted to follow up with you on your testing of the new Dechoker unit. Due to meat being so heavy and having only 3 inches of air behind object, Dechoker often dislodges and moves the obstruction about 1 inch, clearing the airway. We don't claim to be better than forceps, forceps are not usually on scene. Also, forceps with EMS folks don't do well with aspiration. Please let us know your comments they carry a tremendous amount of influence. Dechoker is saving lives in that 12-minute window while waiting on EMS to arrive. We need your support. Thank you for all your hard work and years of saving lives. Thank you - Alan

Alan, Thanks for sending the updated units for me to try on the cadavers. Overall, they worked better on the cadavers than the earlier versions that I tried. I tested the units on whole cadavers that were fresh and un-embalmed. Some of the cadavers were small females and some were adult males. I put in pieces of cooked meat with various degrees of chewing, from home, in various locations like before. Some of the meat was unchewed and ranged to partially chewed to fully chewed.

The unit removed the meat from the hypopharynx. It did not remove the meat from the vocal cords and below. It was like the original units in terms of location. It did not remove the meat if it was in the proximal esophagus compressing the back of the trachea. Probably due to it being compressed inside the esophagus and back of the trachea with gravity. It did not relieve the obstruction if the meat was irregular in shape and did not completely block off the tube so it could provide the suction in front of the meat. The air behind it just went around the meat and left it in place.

We were able to remove the meat in all locations we could reach with the Boeddeker, Magill and Tylke forceps. We used all 3 forceps on the meat. If the paramedics can see the meat, they would have no problem grabbing it with the forceps. We tried this in the lab and they could remove it if it was seen. They did have a harder time with the well-chewed meat because of the characteristics of the meat. It kept breaking up into pieces but they were still able to grasp and remove the pieces to completely remove the meat. We weighed the meat before it was put in the cadavers and after it was retrieved to check it was all removed.

Once again, the Dechoker is not something we would use in the ER. We prefer the forceps if we must relieve a foreign body causing obstruction. The paramedics have limited space on their units and they did have success with the forceps. I can see them still using forceps.

The device may be useful for lower level EMTs (i.e. EMT-basic and EMT-intermediate) rather than paramedics. Since they cannot intubate, they have more room on their vehicle. I can see them carrying and using it.

I can see the lay public using the device until the paramedics arrive.

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Safety FAQ's and Dr. Eric F. Reichman Responses

1. The device involves inserting a plastic tube inside the mouth in addition to placing the mask on the face. We recommend against lay persons placing objects in the mouth because they may damage the soft tissues in the mouth and might push the obstruction further down the airway.

Well trained Paramedics and Emergency Physicians insert oral airways and laryngoscopes. The literature notes many complications from these well-trained professionals when inserting these objects in the mouth. The person is choking and dying. Pushing the foreign object further in the mouth is of no consequence when the person may die if nothing is done. The device may relieve the obstruction and prevent the patient from dying. The device prevents bystanders from inserting their fingers into the patient's mouth and the risk of a bite injury or bite amputation to the fingers.

2. The suggested technique for using the device is dependent on a good seal being achieved between the mask and the victim's face. This is a complex skill which requires considerable expertise and training, well beyond that possessed by lay persons.

The putting of a mask on the face and making the seal by pushing it against the face is simple and requires no training. The application of ventilations by a face mask is complex and has many contingencies. We are not ventilating with the Dechoker device. We are only relieving the foreign body causing obstruction. It only takes a few seconds to apply and use the device. There are no ventilations of the victim.

3. If sufficient negative pressure was developed by the device for it to be effective then there is a risk that it may cause mucosal injury/bleeding and or negative pressure pulmonary edema.

The suction tube of the Dechoker is in the middle of the face mask. It may injure the tongue. It occasionally touches the hard palate with the outside edge of the tube. Insertion of the tube can rub against the tongue or hard palate and cause an abrasion. This is inconsequential to the choking and dying patient. Any abrasion will heal promptly without treatment. One or two pulls of the device will not cause negative pressure pulmonary edema. It is not used long enough to cause pulmonary edema. Face mask ventilation used for prolonged periods does not cause pulmonary edema.

4. Pressing down on the device like a toilet plunger is likely to push the jaw bone posteriorly and therefore worsen airway obstruction.

The choking victim is at risk of dying or suffering brain anoxia by the time paramedics arrive. The mandible does not change position. It is held in place by the temporomandibular joint, numerous muscles, and numerous fascia. The mandible will not move back when the device is applied. The mandible is already pushed back the little it moves in the choking victim lying down. The purpose of the jaw thrust maneuver is to move the tongue up and out of the way while providing ventilations. The Dechoker is not for ventilations.

5. Throughout your studies can you please identify how many cadavers you have done your studies on and in all your studies, did you notice any damage on your cadavers?

We used 11 adult cadavers of various sizes. We tried several different sizes (3-4) of meat obstructing the airway of each cadaver. None of the cadavers had any damage or injuries.

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Dechoker has been a featured product of the Physician Mom's Group (PMG) and sold over 200 units in one day to mothers who are doctors.