CLINICAL GUIDELINE PATIENT CARE SERVICES HENRY FORD HOSPITAL DETROIT, MICHIGAN		CODE:	V	NUMBER:	46
		TITLE:	ESOPHAGOGASTRIC TAMPONADE TUBE INSERTION INSTRUCTIONS AND MAINTENANCE		
APPROVED:	2007	REVIEWED:		REVISED:	5/2011, 2/2013

GENERAL:

KEY POINT:

Current Tamponade Tube at HFH contains latex. For those patients with a latex allergy, collaborate with physician staff to address need FOR prophylactic allergy treatment.

Tamponade tube therapy exerts direct pressure against bleeding gastric or esophageal varices. This pressure is achieved using a *gastric and esophageal balloon* inserted via the nose or the mouth. These tubes are inserted in emergent cases unresponsive to medical therapy or those too hemodynamically unstable to undergo endoscopy and/or sclerotherapy. These tubes also contain suction lumens allowing for the evacuation of accumulated blood from the stomach or esophagus. The suction lumens also allow for the intermittent instillation of fluid to assist in the evacuation of blood or clots.

Minnesota Tube:

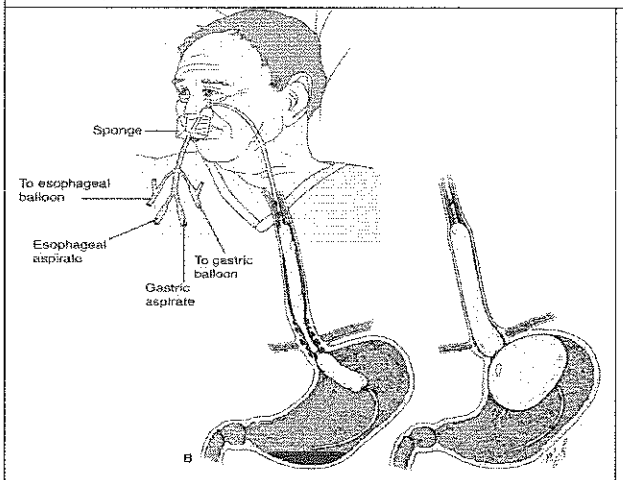


Figure 41-1B Comparison of two types of esophageal tamponade tubes. (B) The Minnesota esophagogastric tamponade tube includes an esophageal aspirate lumen.

The Minnesota tube has four-lumens:

- gastric and esophageal balloons
- separate gastric esophageal suction lumens

POLICY:

The tamponade tube should only be placed by a physician who is credentialed to perform the procedure. A critical care or emergency room RN may **ASSIST** the physician with the insertion of the tamponade tube for the control of esophageal and gastric bleeding varices. **The physician is responsible for insertion, inflation, deflation, removal and any manipulation of the tamponade tube.**

KEY POINT: If the patient arrives from an outside facility or the emergency department an abdominal x-ray will be done to ensure proper placement and functioning of the existing tube.

KEY POINT: Every effort will be made to care for patients with tamponade tube therapy in the Medical Intensive Care Units.

Oral is the preferred route for insertion. Nasal insertion is more difficult and associated with more complications.

Contraindications for oral insertion:

- Esophageal strictures
- Recent esophageal surgery

Relative Contraindication for nasal insertion:

- History of transsphenoidal hypophysectomy
- Coagulopathy
- History of nasal trauma, deformity or surgery

Relative Contraindications for oral or nasal insertion:

- Congestive heart failure
- Respiratory failure
- Hiatal hernia
- Cardiac arrhythmias

Articles Needed:

Esophageal Tamponade Kit (non sterile)	**Quantity**
Minnesota tamponade tube (Single-use, non-sterile)	1
60 ml syringe (Toomy)	1
NS /sterile H20 for irrigation	1
Water soluble lubricant	4
Bite block	1
Sphygmomanometer set-up	1
Clamps (non penetrating)	4
Tape	1
Suction set ups with tubing	2
Set of scissors to be kept at the bedside	1
Football helmet	1

Pre-insertion pressures will be checked in the gastric balloon in 100 ml increments up to 500 ml when the kit is assembled, before the tube is needed in an emergency situation.

See appendix A for detailed information regarding the kit's contents.

Procedure:

Prior to insertion the RN and Physician team will ensure the following:

- Crash cart availability and ease of access to atropine.

  KEY POINT: Insertion of tamponade tube may stimulate a vagal response causing symptomatic bradycardia.

- Patients will require intubation and mechanical ventilation for airway protection.
- Remove dentures.
- Scissors taped at the head of bed.

KEY POINT: If at any time there is evidence of airway obstruction or esophageal rupture the tamponade tube must be cut to allow immediate deflation of all balloons and remove tube.

Ensure balloon integrity:

1. Inflate both esophageal and gastric balloon, clamping, and hold underwater to check for leaks.
2. Actively deflate and clamp both balloons, this will aid in ease of insertion.
3. Lubricate both balloons and the distal 15 cm of the tube with water based lubricant.
4. Patient may need bite block inserted and additional analgesics/anxiolytics at this point to facilitate insertion.

Insertion of Tube:

5. The physician inserts the tamponade tube into the patient's mouth or selected nostril and advances it into stomach (to at least 50 cm mark or 10 cm beyond the estimated length to reach the stomach).

   Confirm tube placement into the stomach:

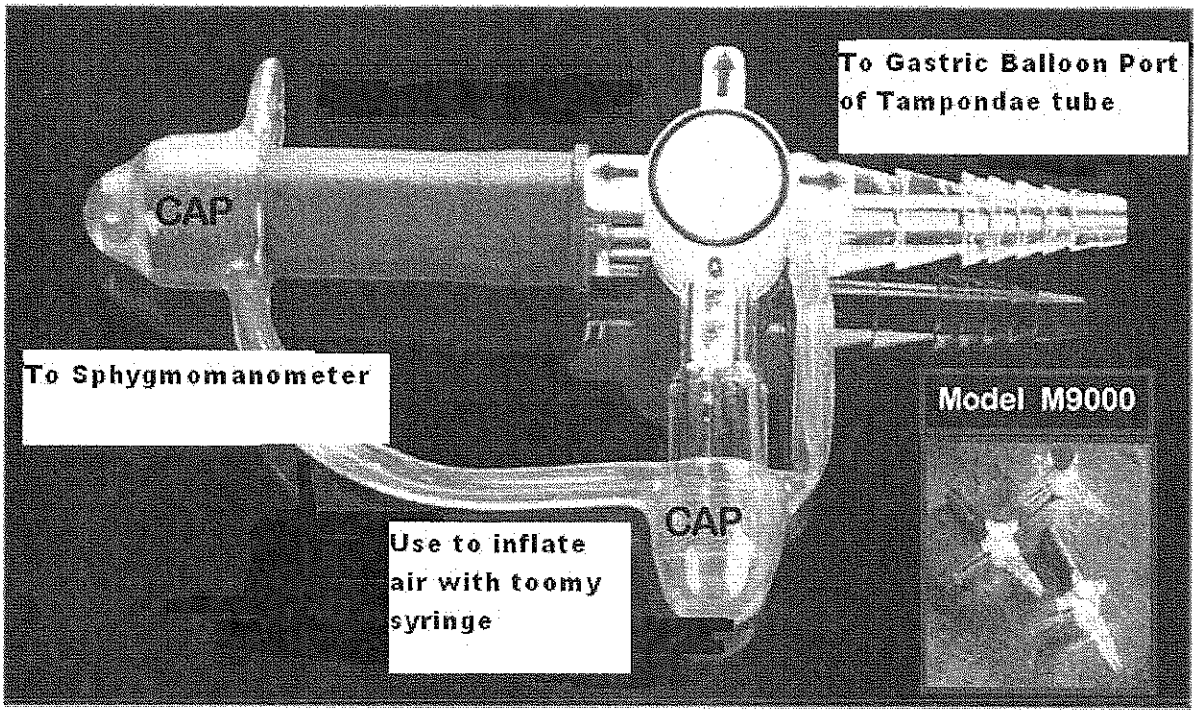
6. The physician or RN will lavage stomach via **GASTRIC** ASPIRATION PORT with NS until clear of clots.
7. If patients continues to bleed both the **GASTRIC and ESOPHOGEAL ASPIRATION PORT** can be placed to intermittent suction 60-120 mmHg
8. **Physician will SLOWLY INFLATE** the **GASTRIC** BALLOON with increments of 100 ml of air, to a total of 400 or 500 ml, observing the pressure level on the sphygmomanometer at each increment.

   - If the gastric balloon pressure exceeds pre-insertion pressures for a particular volume by more than 10 mmHg, the physician will withdraw ALL the air and advance tube an additional 10 cm and re-check pressures.

     KEY POINTS:

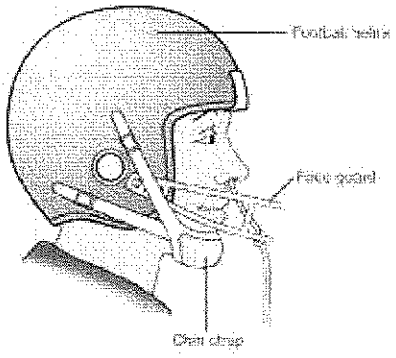
     - An elevated gastric balloon pressure indicates tube misplacement and must be completely deflated and repositioned.
     - This ensures the gastric balloon is inflated in the stomach.

   - The gastric balloon inflation process may be simplified by the use of a Lopez enteral valve (see diagram below).



9. Upon full inflation of the gastric balloon, double clamp lumen and obtain **an ABDOMINAL or CHEST X-ray.**

10. Once placement of the gastric balloon is **CONFIRMED BY X-RAY the physician will** apply gentle traction on the tube by taping the tube to face guard on football helmet (see diagram below). This will achieve gastric tamponade.



11. Place a TAPE MARKER around the tube as it exits the mouth or nose, and note tube length at lip line or nares.

KEY POINTS:

- Any migration of the tube further out from this point could signify esophageal rupture and needs to be immediately addressed.
- And migration further in represents ineffective gastric tamponade and MD should be notified to reposition tube.

12. The physician will inflate the esophageal balloon if bleeding is NOT controlled by gastric tamponade, this is done by:

    KEY POINT: Gastric tamponade will exert pressure to varices in upper stomach and around the esophageal gastric junction. Bleeding varices may occur further up the esophagus and will require esophageal balloon inflation to control bleeding.

- Attaching the pressure gauge to the **ESOPHOGEAL** BALLOON PORT
- Gradually inflating the esophageal balloon to **35-45 mmHg**

KEY POINT:

Pressures of 35-45 mm Hg are needed to immediately stop bleeding, once bleeding has stopped MD may decrease pressure to 25 to decrease risk of esophageal necrosis.

- Double clamp the **ESOPHAGEAL** BALLOON PORT.

Collaborate with physician for continuous sedation and analgesia intravenous medications.

Care Maintenance and Documentation:

1. Head of the bed should remain at 30 degrees or greater at all times
2. Document every two hours in the on the esophageal tamponade assessment button in electronic medical record the following:
   - Esophageal balloon pressures
   - Location of the tamponade tube in cm
   - Any esophageal balloon deflation
3. Oral (nasal care if tamponade tube is inserted nasally) care is performed and documented every 2 hours.
4. The physician may deflate the esophageal balloon every 8 hours for 30 minutes.
5. Monitor and document GASTRIC/ESOPHAGEAL output, and irrigate tube as needed to maintain patency.

Emergent Events/Management

1. A sudden change in vital signs/EKG requires immediate physician attention and intervention.
2. Respiratory distress is an indication of balloon displacement and a sudden onset of abdominal/back pain may indicate esophageal rupture/erosion.
3. High pressure alarm from vent or difficulty ventilating patient indicates **AIRWAY OBSTRUCTION**, if this occurs cut through all of the tamponade tube and remove.
4. If emergent removal of tube is necessary, both balloons are deflated simultaneously by cutting the tube proximal to both inflation ports.

Discontinuation of Esophageal Tamponade Tube:

1. The esophageal balloon should be deflated by the physician over a 12-24 hour period.

   KEY POINT: If bleeding recurs at this point, the physician re-inflates the esophageal balloon.

2. Physician will then relieve tension from the tamponade tube and remove helmet.

   KEY POINTS:
   - Tension must be relieved from tube before gastric balloon deflation to prevent esophageal rupture.
   - If bleeding recurs at this point re-apply tension and replace helmet.

3. Physician will deflate slowly deflate gastric balloon over a 24 hr period.
   - If bleeding recurs at this point, start entire inflation process from the beginning.

The RN (or their designate) caring for the patient who's **Esophageal Tamponade Tube discontinued**, is responsible for the cleaning (first with soap and water then sanitizing with the appropriate wipe) all reusable equipment in this kit. This RN will repackage and contact Nursing leadership for restocking of the kit.

REFERENCES:

AACN procedure Manual for Critical Care, 5th edition

Emergency Nursing Procedures Jean A. Proehl 4th edition

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POC:
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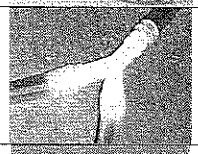
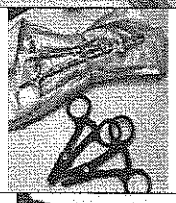
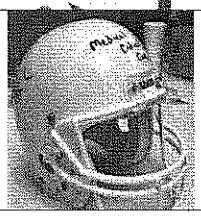
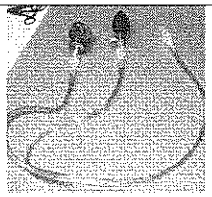
Appendix A

ARTICLES NEEDED:

Esophageal Tamponade Kit (non sterile)	**Quantity**	**Restock available**	
Minnesota tamponade tube (Single-use, non-sterile)	1	From clerk or unit storage areas	
60 ml syringe	1	Unit supply	
NS /sterile H20 for irrigation	1	Unit supply	
Water soluble lubricant	4	Unit supply	
Bite block	1	Unit supply	
Pressure gauge **(A)**	1	Clean & re-use	
Clear suction (canister) tubing **(B)**	3 short	Unit supply	
Y connector **(C)** **Optional-** not required to obtain pressure reading	1	Unit Supply	
Tubing adaptor (5 in 1) **(D)**	2	Unit Supply	
Clamps (non penetrating)/plastic clamps)	4	Clean & re-use or restock from clerk	
Adhesive tape	1	Unit supply	

Esophageal Tamponade Kit (non sterile)	**Quantity**	**Restock available**	
Suction set ups with tubing	2	Unit supply	
Set of scissors (to be kept at the bedside)	1	Unit supply	
Football helmet	1	Clean & re-use	
Pressure monitoring set up **(A+B+C+D)** This is **Optional** for pressure monitoring note that pressure gauge can be directed connected to lumens on the tube			

Upon assembly of kit the tamponade tube balloons will be tested for integrity and the gastric balloon pre-pressures will be completed and documented on the following form. This will then be taped to the inside of tamponade tube box for reference when the kit is needed for use.

Volume of Air	Pre-Pressure	Post- Pressure
100		
200		
300		
400		
500		

Remember any increase in pressure greater than 10 mm Hg from pre-pressure indicates tamponade tube is improperly positioned. Immediately deflate gastric balloon, reposition tube, and re-inflate from beginning. Signature:_____ Date: _____.

Volume of Air	Pre-Pressure	Post- Pressure
100		
200		
300		
400		
500		

Remember any increase in pressure greater than 10 mm Hg from pre-pressure indicates tamponade tube is improperly positioned. Immediately deflate gastric balloon, reposition tube, and re-inflate from beginning. Signature:_____ Date: _____.

Volume of Air	Pre-Pressure	Post- Pressure
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Remember any increase in pressure greater than 10 mm Hg from pre-pressure indicates tamponade tube is improperly positioned. Immediately deflate gastric balloon, reposition tube, and re-inflate from beginning. Signature:_____ Date: _____.