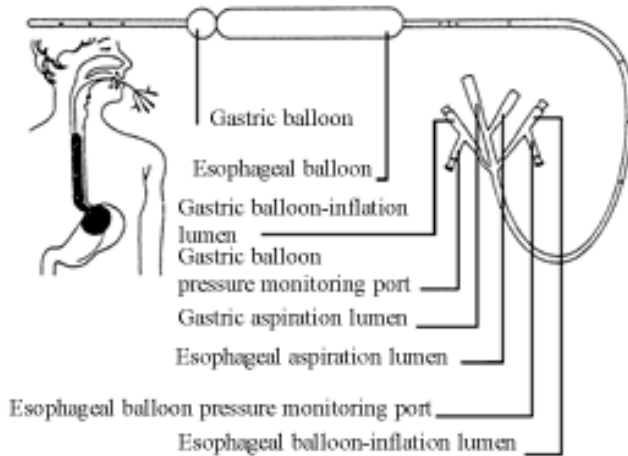
	<p>Policies & Procedures</p> <p>Title: ESOPHAGEAL TAMPONADE TUBE (MINNESOTA Tube) – ASSISTING WITH INSERTION, CARE OF A PATIENT, ASSISTING WITH REMOVAL</p> <p>RNSP - RN Procedure</p> <p>I.D. Number: 1097</p>
<p>Authorization</p> <p>[x] Nursing Practice Committee</p>	<p>Source: Nursing</p> <p>Date Revised: March, 2017</p> <p>Date Effective: June, 1983</p> <p>Scope: Royal University Hospital - ICU St. Paul's Hospital - ICU</p>

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DEFINITION

Minnesota tube - for the purpose of this policy we will refer to the esophageal tamponade tube as a Minnesota tube.

Minnesota 4 lumen Esophagogastric Tamponade tube



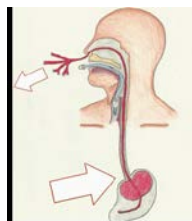
Used to temporarily tamponade gastro-esophageal varices. The Minnesota tube has four-lumen

Two drainage lumen:

- A gastric aspiration lumen that allows drainage from below the gastric balloon and can also be used for medication administration.
- An esophageal aspiration lumen that provides for drainage above the esophageal balloon.

Two balloon lumen

- Gastric balloon
- Esophageal balloon



The Minnesota tube may be inserted through the nose or mouth. The gastric balloon is inflated and pulled up with traction to the GE junction to apply pressure

ROLES

Registered Nurses (RNs) - RNs identified by their manager in targeted practice settings, will be certified in the RN Specialty Practice (RN Procedure) Minnesota Esophageal Tamponade Tubes - Assisting with insertion, care of the patient with, assisting with removal.

Graduate Nurses (GNs) - GNs identified by their manager in targeted practice settings will be certified in the RN Specialty Practice (RN Procedure): Minnesota Esophageal Tamponade Tubes - Assisting with insertion, care of the patient with, assisting with removal. The GN may only assist with insertion, care for the patient, and assist with removal of the Minnesota Esophageal tamponade tubes under the direct supervision of a certified RN

1. PURPOSE

- 1.1 To safely assist in the management of patients that require temporary control of acute esophageal and/or gastric hemorrhage caused by esophageal or gastric varices.

2. POLICY

- 2.1 The RN or GN certified in this RNSP will have first completed the following learning modules/activities prior to assisting with insertion/caring the patient with a Minnesota Tube:
 - Complete the required learning module and quiz (teaching and learning methods may vary e.g. classroom and/or self- study using paper module or on line)
 - Complete a skills checklist with a certified RN during simulation or during first access, to ensure safety checks are followed appropriately.
 - Provide documentation of learning module quiz and skills checklist to educator/supervisor
- 2.2 The patient with an esophageal tamponade tube in place must be observed closely for esophageal rupture. The esophageal and gastric balloons must be deflated prior to initiation of CPR.
- 2.3 Only a physician may insert or remove the Minnesota tube
- 2.4 It is recommended that the patient be intubated prior to insertion of the Minnesota tube
- 2.5 The physician must order
 - 2.5.1 Volume or Pressure in each balloon
 - 2.5.2 Type / amount of suction
 - 2.5.3 Frequency / duration of balloon deflation
 - 2.5.4 Frequency of lavage
 - 2.5.5 Deflation and/or removal of the Minnesota tube

3. PROCEDURE

3.1 Assisting with insertion

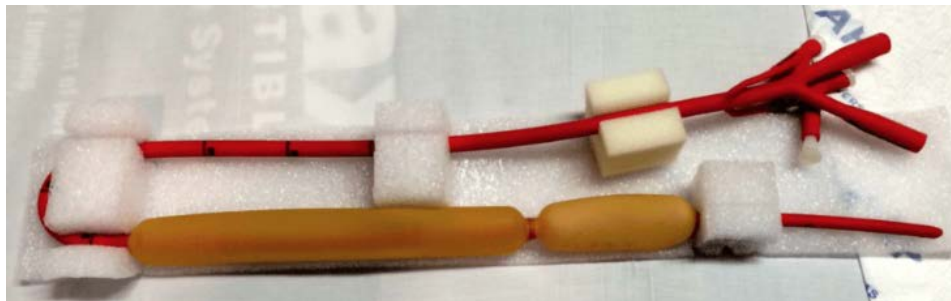
3.1.1 Supplies

- Esophageal Tamponade tube – 18 Fr Minnesota tube (SKU # 77610)
- Irrigation tray with 60 mL syringe(SKU 88346)
- Normal Saline for irrigation - refrigerated
- Kidney basin with ice
- Equipment needed to measure balloon pressures
 - Pressure manometer- "Cufflator" (RRT department)
 - 4 way stopcock : SKU#40090
 - Catheter adapter SKU #86507
- Water-soluble lubricant
- Clamps/Hemostats – 4
- Adhesive tape
- Incontinent pad
- Scissors
- Suction setups – 3 (oral/tracheal, gastric, esophageal)
- Flashlight
- Basin of water- to use to assess for leaks in balloons
- Local anesthetic spray
- Face mask with visor for all within 2 meter of the patient
- clean gloves
- Appropriate PPE (i.e. impervious gown)
- Alcohol-based hand rub

Preparation of Equipment

- Inflate both balloons with air and submerge in water to test for leaks. Remove all air from balloons and reinsert plugs / re-clamp so that no air reenters balloons
- Attach the gastric balloon port to the pressure manometer

18Fr Minnesota tube SKU 77610



Esophageal balloon

Gastric balloon

NOTE: The physician may request the tube be chilled in a basin of ice.

- 3.1.2 Physician to obtain consent. The nurse to ask patient/family if they have any questions
- 3.1.3 Perform hand hygiene. Don PPE (impervious gown, mask with attached visor, clean gloves)
- 3.1.4 Monitor vital signs during insertion. Cardiac monitor (ECG, SpO₂, RR, BP)
- 3.1.5 Administer medications as ordered to keep patient comfortable.
- 3.1.6 If patient alert, position patient in semi-Fowler's or high-fowler's position if possible. If patient unconscious, the patient may need to be positioned in left lateral position with patient head down .
- 3.1.7 Assist physician as directed. Remove NG tube if present prior to insertion of the Minnesota tube.
- 3.1.8 The Physician will insert the Minnesota tube and will ask to inflate the gastric balloon with 50mls of air. Usual depth is 50 cm but will vary depending on patient.
 - 3.1.8.1 An x-ray will be done to confirm placement. Auscultation is not a reliable assessment of placement into the stomach
- 3.1.9 The physician will order for chest x-ray to confirm placement
- 3.1.10 Once placement confirmed, the physician will inflate gastric balloon with up to a total of 500mls of air and gently pull tube back to seat balloon against gastro esophageal junction.

Cufflator set up



To obtain pressure:

1. Clamp balloon port
2. Remove plug
3. Connect blue catheter adapter end to the balloon port
4. Remove the clamp
5. Pressure will be read by Cufflator
6. Clamp balloon port
7. Remove Cufflator set up
8. Reinsert plug and clamp

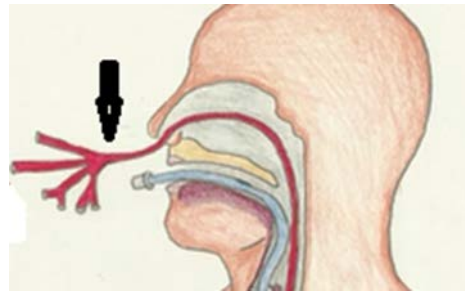
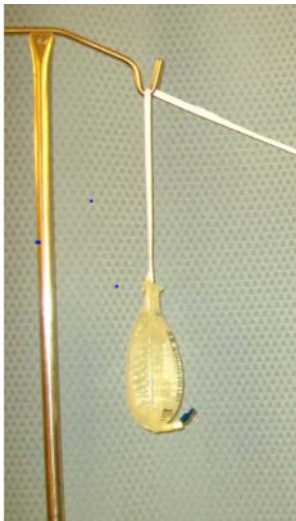
Cufflator +4 way stopcock with dead ender + catheter adapter

The pressures are measured by connecting the catheter adapter to the esophageal or gastric balloon ports.

- 3.1.10.1 The physician may ask to have the pressure of the inflated gastric balloon measured. This can be done using the cufflator manometer. The pressure should be no more than 20-30mmHg higher than the baseline pressure that was measured
- 3.1.10.2 The physician is responsible for assessing the safe inflation volume.

3.1.10.3 Report any reports of pain or discomfort to the physician.

3.1.10.4 Use a colored water proof tape to mark correct depth of tube. Assess this placement q 1hrs and with any patient repositioning or possible dislodgement.



Tie one end of 2 meter piece of twill tape around Minnesota Tube and tie the other end to a 1 liter bag of IV fluid , IV pole to be placed at the foot of the bed.

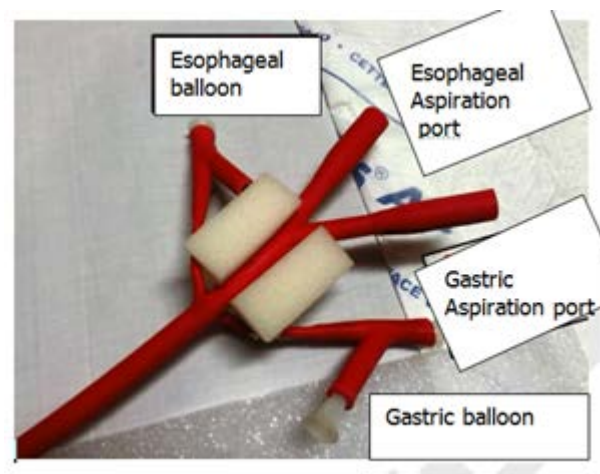
3.1.11 Secure the Minnesota tube in place at the opening at the point it exits the mouth or nose.

To secure the tube with gentle, consistent traction

Allow the bag to hang freely over the IV pole. Note; when you reposition the patient, make sure that the IV bag is hanging freely –observe the patient for comfort ,being careful not to pull too hard on the traction and to not let it hang

3.1.12 Following tube insertion, lavage stomach via gastric suction port with chilled NS until clear of large blood clots as ordered.

3.1.13 Connect esophageal and gastric suction ports to intermittent suction as per physician's order.



3.1.14 Label each port

3.1.15 Ensure HOB at 30 – 45 degrees, unless contraindicated.

3.1.16 Ensure you always have a 60 ml syringe readily available at the head of the bed in the event the balloons need to be deflated immediately.

3.1.17 Documentation

- Date and time of insertion
- Name of inserting Physician
- Name of tube use and depth of insertion.
- Any problems during insertions and interventions relating to these
- Patient tolerance of procedure
- Type and maintenance of traction
- Amount and type of suction applied
- Balloon pressures if measured
- Appearance and volume of gastric and esophageal drainage
- Nasal or oral care
- Tube site assessments
- Medications administered
- How patient tolerated procedure
- Teaching done

3.2 Care of the patient

3.2.1 Supplies

- Normal Saline for irrigation
- Irrigation set SKU# 88346
- Cufflator manometer if physician has ordered balloon pressures to be measured

3.2.2 Maintain patient in semi-Fowler's position with bed marked clearly: In order to ensure consistent amount of traction applied to the Minnesota tube, place signage that directs staff to move the traction "with" the movement of the patient.

3.2.3 Provide emotional support.

3.2.4 Administer medications as ordered.

3.2.5 Monitor vital signs closely q15min for one hour until stable, Then hourly thereafter.

3.2.6 Provide mouth and nose care q2-3hr and prn.

3.2.7 Monitor need for oral suctioning.

3.2.8 If ordered, monitor balloon pressures hourly.

3.2.9 Monitor for recurrence of bleeding.

3.2.10 Monitor airway patency and respiratory status.

3.2.11 Have 60 ml syringe at bedside to immediately deflate balloons if airway compromised.

3.2.12 Monitor gastric drainage (amount and appearance).

3.2.13 Irrigate gastric suction port with 50 ml NS as ordered by the physician. Contact physician if there is a sudden increase or decrease in drainage.

3.2.14 If the physician has ordered meds to be administered per the tube:

- Disconnect gastric suction from gastric aspiration lumen.
- Irrigate to determine patency.
- Instill liquid medication and flush with 30 to 50 ml water.
- Clamp lumen for 30 minutes or as ordered.

3.2.15 Physician is responsible for adjusting of the Minnesota tube, the balloons and the removal.

3.2.16 Document

- Vital signs
- Type and amount of gastric and esophageal drainage.
- Evidence of bleeding
- Amount / type of suction used
- Medications given
- Type of traction
- Manometer pressure
- Patient tolerance
- Education and support provided

3.3 Assisting with removal

3.3.1 Supplies

- 60 ml catheter-tip syringe
- Incontinent pad
- Appropriate PPE

3.3.2 Disconnect from traction with Physician present.

3.3.3 Physician deflates esophageal balloon.

3.3.4 Observe for bleeding.

3.3.5 Remove securing tape.

3.3.6 Physician deflates gastric balloon.

3.3.7 Disconnect suction.

3.3.8 Physician removes tube.

3.3.9 Document

- Date and time of removal
- Name of Physician
- Any difficulties during removing and interventions performed
- Patient tolerance

4. REFERENCES

Bard Website downloaded July 28, 2014

<http://www.bardmedical.com/Prescriptive/?productID=5858&p=6437>

http://www.lhsc.on.ca/Health_Professionals/CCTC/procedures/CCTCMinnesota.pdf

<http://lifeinthefastlane.com/ccs/sengstaken-blakemore-and-minnesota-tubes/>

Morton, P. G., et al., 2013, Critical care nursing; a holistic approach, Lippincott, 10th edition, pg. 1046 - 1047.

Nettina, S. M. (Ed) (2010). Procedure Guidelines: Using Balloon Tamponade to Control Esophageal Bleeding (Sengstaken-Blakemore Tube Method, Minnesota Tube Method) in Lippincott Manual of Nursing Practice (9th Edition). Philadelphia: Lippincott Williams & Wilkins Pg 728 – 730.

Puyana, J. C., & Pavini, M. T. (2011). Gastroesophageal Balloon Tamponade for Acute Variceal Hemorrhage in *Irwin and Rippe's Intensive Care Medicine* (7th Edition). Irwin, R. S., & Rippe, J. M. (Eds). Philadelphia: Lippincott Williams & Wilkins

Smith, M. M. (2010). Variceal Hemorrhage from esophageal varices associated with alcoholic liver disease. *AJN*. 110 (2). Pg 32 - 39

Weigand, D. L., (ed.) (2011) Esophogastric Tamponade Tube in AACN Procedure Manual for Critical Care. (6th ed). St. Louis: Elsevier Saunders. pp. 947 - 957.