## MINNESOTA TUBES FOR UPPER GI BLEEDS by Nick Mark MD **GENERAL RULES:**

# ONE

onepagericu.com **y** @nickmmark

balloon

directly

compresses

varices

Link to the most current  $version \rightarrow$ 

Use 2 suction setups

(1 for each port)

Suction

canister



Wall

suction

regulator

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compresses the GE

junction reducing

blood flow to

esophageal varices

#### **PURPOSE:**

- Minnesota tubes (MT) are typically placed in intubated patients with life-threatening GI hemorrhage (particular esophageal varices) when interventional approaches to control hemorrhage have been unsuccessful or are unavailable.
- The MT is a four-lumen gastric tube that permits tamponade of gastric and esophageal bleeding as well as continuous aspiration of gastric & esophageal contents. It is an improvement over the older Sengstaken-Blakemore tube (SBT),
- Endotracheal intubation with HOB >45° is recommended prior to MT placement.

### PLACEMENT: (excellent step by step videos are also available)

which only permitted gastric contents to be aspirated.

1. Test the balloons by inflating and submerging underwater to ensure no leaks. Attach the sphygmomanometer/syringe GASTRIC balloon port and inflate to 100, 200, and 500 cc (note the pressure at each volume). Completely deflate the balloons after testing. Lubricate the distal 15 cm of the MT prior to insertion. Measure from the mouth to ear to xiphoid process and insert the tube through the mouth to that

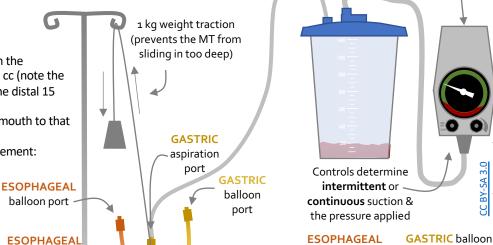
syringe

- depth. Use a video laryngoscope to help guide MT insertion into the esophagus. 3. Insert MT to the measured distance + 10 cm (typically about 50-60 cm) & verify placement:
- Instill 50-100 cc of air into the GASTRIC port &
  - obtain CXR Manometer POCUS can also be used to confirm the 60 cc allow
  - presence of MT in the stomach. If imaging confirms gastric placement of MT,
  - continue to inflate to 300-500 mL • If pressure rises above 15 mmHg STOP
  - Once placement is confirmed, connect gastric aspiration to
- intermittent suction (negative 60-120 mmHg). Clamp the gastric balloon port. Assess for ongoing bleeding. In the majority of cases the gastric balloon is able to control
  - hemorrhage. However, if bleeding continues, inflate the **ESOPHAGEAL** balloon to tamponade varices further. Instill 50cc of air at time and measure pressure.
  - Goal is 25-40 mmHg of **ESOPHAGEAL** pressure (higher can cause esophageal erosion).
  - Clamp the **ESOPHAGEAL** balloon. Obtain CXR.
  - Connect the **ESOPHAGEAL** port to continuous wall
- suction at negative 120-200 mmHg. Mark the tube at the lips & record depth. Secure the tube w/ a 1 kg weight for traction. A catcher's mask can also be used.

#### REMOVAL:

- If bleeding resolves, DEFLATE the **ESOPHAGEAL** balloon by 5 mmHg every 3 hours until completely deflated.
- If no bleeding recurs for 24 hours, release traction & deflate the **GASTRIC** balloon.
- If no bleeding for another 24 hours, remove the MT.

- Always INFLATE the GASTRIC balloon first
- Always DEFLATE the **ESOPHAGEAL** balloon first
- If there's a doubt about placement, repeat CXR Never exceed 15 mmHg with the GASTRIC balloon
- or 45 mmHg with the ESOPHAGEAL balloon
- Never irrigate the **ESOPHAGEAL** suction port



**ESOPHAGEAL** 

aspiration \*

opening

# Pilot balloon indicates that

pressure

monitoring

Y-connector

Rubber lined

hemostats are

used to clamp

the tube

aspiration

port

**ESOPHAGEAL** 

balloon is deflated

The distance from mouth to ear to xiphoid approximates the distance from the mouth to

**GASTRIC** aspiration the stomach openings