CCTC Minnesota Procedure: Minnesota Tube, Assisting with Insertion and Care

Purpose:

of Patient

To control bleeding from esophageal or gastric varices that have not responded to medical therapy (ie. Sclerotherapy, banding ligation) using a quadruple lumen tube - one lumen for gastric suction, one to inflate an esophageal balloon, one to inflate a gastric balloon and one for esophageal suction.

Consideration:

Recommended that patient be intubated prior to Minnesota tube insertion due to high risk for aspiration.

Contraindications:

- 1. Esophageal strictures
- 2. Recent esophageal surgery

Complications:

- 1. Potential for respiratory complications aspiration, asphyxiation
- 2. Potential for perforation of esophagus
- 3. Necrosis or erosion of esophagus or stomach

MINNESOTA TUBE INSERTION

Equipment

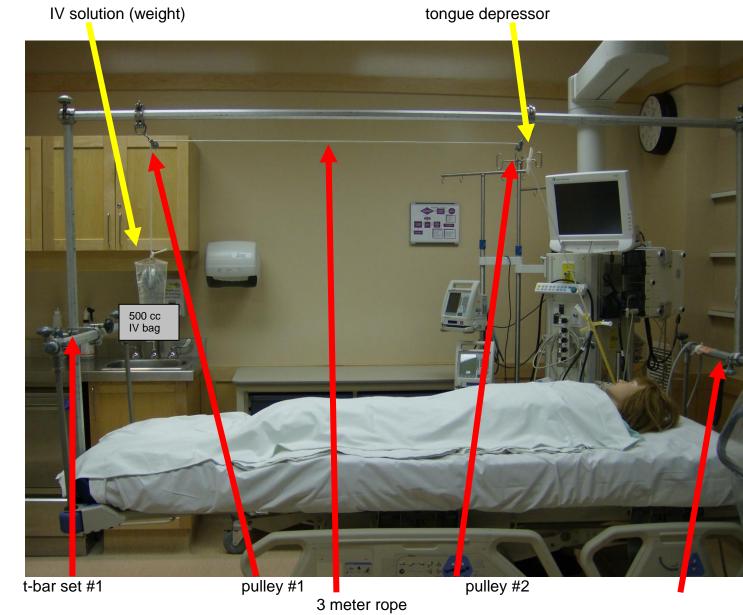
- Minnesota tube (leave in refrigerator until insertion as a cold, stiff tube is easier to insert)
- □ kelly clamps X 4
- □ 60 ml catheter tipped syringe
- wash basin
- □ 1 litre bottle sterile water (for irrigation)
- water-soluble lubricant
- scissors
- lidocaine spray
- personal protective equipment
- □ 500 ml bag of IV solution (for weight)
- adhesive tape
- □ tongue depressor
- black marker
- portable sphygmanometer
- montgomery tie tapes
- □ traction equipment (from patient equipment room includes 2 pulleys, 2 T-bars and cross bar traction set, 3 metre rope)
- suction regulator and suction tubing X 2

:

□ PPE- non-sterile gloves, gown, facemask and shield

Assisting with Insertion

1. Set up traction on bed (see photo below)



t-bar set #2

| 2. Explain procedure to patient and family. | Decrease anxiety. |
|---|--|
| 3. Perform hand hygiene and don personal protective | Reduces risk of transmission of |
| equipment. | microorganisms and secretions. In |
| | accordance to the MoHLTC 4 moments |
| | of hand hygiene and LHSC infection |
| | control policies. |
| 4. Premedicate as ordered. | Ensure comfort and tolerance of |
| | procedure. |
| Lidocaine spray may be ordered. | Lidocaine may be ordered to |
| | anesthetize posterior pharynx. |
| 5. Position patient high Fowler's or left lateral | Facilitates passage of tube and reduces |
| decubitus, if possible | risk of aspiration. |
| 6. Observe the physician as he/she tests each | Check for integrity and air leaks |
| balloon before insertion by placing the tube in | |
| basin of sterile water. | |
| a) Testing the gastric balloon: | |
| Ensure esophageal balloon is deflated, | |
| clamped and plastic plug (supplied with tube) inserted into port. Connect the | |
| sphygmomanometer to the gastric balloon | |
| port. | |
| Using the second access off the gastric | Knowing the pressures may prevent |
| balloon port, inject 100, 200, 300, 400 and 500 | unintentional esophageal perforation |
| ml of air using a catheter-tipped syringe. Make | during insertion. |
| note of the pressure readings at each interval. | adming moormorn |
| b) Deflate gastric balloon, clamp and place plastic | Ensuring balloon is deflated, eases |
| plug (supplied with tube) into port. | insertion. |
| , , , | |
| Lubricate tube including both balloons. | Eases insertion of tube. |
| 7. Observe as physician inserts tube either orally or | This indicates the tip of the tube is in the |
| nasally to 50 cm mark (labeled on tube). | stomach as recommended by the |
| | manufacturer. |
| 8. Confirm placement of tube as ordered by physician. | May be either xray, fluoroscopy or by |
| | endoscopic procedure. |
| 9. Connect both esophageal and gastric suction ports | Prevent regurgitation of gastric contents |
| to low intermittent suction. | and saliva. |
| 10. Once placement confirmed, physician will inflate | Readings >15 mm Hg indicate balloon |
| gastric balloon with 100 ml of air. Connect | is located within the esophagus which |
| sphygmomanometer to gastric balloon port. Ensure | could result in esophageal rupture. The |
| pressure reading is within 15 mm Hg from initial | physician must deflate the gastric |
| reading. | balloon and reinsert into stomach. |
| | This second confirmation of placement |
| | is necessary due to the possibility of |
| | tube dislodgement when the endoscope is removed. |
| 11. Slowly inflate the gastric balloon with increments | Readings >15 mm Hg indicate balloon |
| of 100 ml of air to a maximum of 500 ml using the | is located within the esophagus which |
| or 100 mil of all to a maximum of 500 mil using the | To located within the esophagus willen |

| readings with each 100 ml increment. 12. Clamp the gastric balloon port. 13. Pull back gently on tube. 14. Confirm placement by abdominal xray after gastric and/or esophageal placement. 15. Mark placement of tube with a black marker as it emerges from mouth or nose. 16. If esophageal balloon is to be inflated/deflated this must be performed by MD: a) Connect the sphygmomanometer to the esophageal balloon port. b) Using the second access off this port, inflate the balloon to 35-45 mm Hg using a catheter-tipped syringe. c) Clamp the esophageal balloon port. d) MD must deflate esophageal balloon to adjust tube position. 70 prevent air leaks from balloon will only be inflated if bleeding continues after gastric balloon inflated. Never inflate esophageal balloon inflated. Never inflate esophageal balloon inflated balloon inflated. Never inflate esophageal balloon infl | catheter-tipped syringe. Observe the pressure | could result in esophageal rupture. |
|--|--|--|
| 13. Pull back gently on tube. 14. Confirm placement by abdominal xray after gastric and/or esophageal placement. 15. Mark placement of tube with a black marker as it emerges from mouth or nose. 16. If esophageal balloon is to be inflated/deflated this must be performed by MD: a) Connect the sphygmomanometer to the esophageal balloon port. b) Using the second access off this port, inflate the balloon to 35-45 mm Hg using a cathetertipped syringe. c) Clamp the esophageal balloon port. d) MD must deflate esophageal balloon to adjust tube position. d) MD must deflate esophageal balloon to adjust tube position. d) MD must deflate esophageal balloon to adjust tube position. To prevent air leaks from balloon. To prevent air leaks from balloon. To prevent esophageal trauma. Ensure adequate balloon inflation for tamponade. Avoid mucosal injury and necrosis. Traction firmly holds tube in place and places pressure on varices. 17. Apply traction by attaching a 500 ml bag of IV solution to the rope located on the pulley system (see photo). Tie rope to end of the esophageal balloon port. 18. Tape a tongue depressor 1" from the proximal pulley (see photo). 19. Tape scissors to bed for quick access. Scissors must always accompany patient if transporting. If needed, cut tube closest to insertion site. 20. Remove PPE and perform hand hygiene. Care of the Patient 1. Inspect traction q4h and prn. Ensure reesistance on the gastroes as it tube dislodged. Esophageal balloon will be deflated and traction released per physician preference within 12-24h by physician To prevent mucosal necrosis. | readings with each 100 ml increment. | |
| 13. Pull back gently on tube. 14. Confirm placement by abdominal xray after gastric and/or esophageal placement. 15. Mark placement of tube with a black marker as it emerges from mouth or nose. 16. If esophageal balloon is to be inflated/deflated this must be performed by MD: a) Connect the sphygmomanometer to the esophageal balloon port. b) Using the second access off this port, inflate the balloon to 35-45 mm Hg using a cathetertipped syringe. c) Clamp the esophageal balloon port. d) MD must deflate esophageal balloon to adjust tube position. d) MD must deflate esophageal balloon to adjust tube position. d) MD must deflate esophageal balloon to adjust tube position. To prevent air leaks from balloon. To prevent air leaks from balloon. To prevent esophageal trauma. Ensure adequate balloon inflation for tamponade. Avoid mucosal injury and necrosis. Traction firmly holds tube in place and places pressure on varices. 17. Apply traction by attaching a 500 ml bag of IV solution to the rope located on the pulley system (see photo). Tie rope to end of the esophageal balloon port. 18. Tape a tongue depressor 1" from the proximal pulley (see photo). 19. Tape scissors to bed for quick access. Scissors must always accompany patient if transporting. If needed, cut tube closest to insertion site. 20. Remove PPE and perform hand hygiene. Care of the Patient 1. Inspect traction q4h and prn. Ensure reesistance on the gastroes as it tube dislodged. Esophageal balloon will be deflated and traction released per physician preference within 12-24h by physician To prevent mucosal necrosis. | | |
| 14. Confirm placement by abdominal xray after gastric and/or esophageal placement. 15. Mark placement of tube with a black marker as it emerges from mouth or nose. 16. If esophageal balloon is to be inflated/deflated this must be performed by MD: a) Connect the sphygmomanometer to the esophageal balloon port. b) Using the second access off this port, inflate the balloon to 35-45 mm Hg using a cathetertipped syringe. c) Clamp the esophageal balloon port. d) MD must deflate esophageal balloon to adjust tube position. To prevent air leaks from balloon. To prevent esophageal trauma. Ensure adequate balloon inflation for tamponade. Avoid mucosal injury and necrosis. Traction firmly holds tube in place and places pressure on varices. 17. Apply traction by attaching a 500 ml bag of IV solution to the rope located on the pulley system (see photo). Tie rope to end of the esophageal balloon port. 18. Tape a tongue depressor 1" from the proximal pulley (see photo). 19. Tape scissors to bed for quick access. Scissors must always accompany patient if transporting. 20. Remove PPE and perform hand hygiene. 10. Remove PPE and perform hand hygiene. 11. Inspect traction q4h and prn. 22. Inspect the tube placement and insertion site q1h. 33. Balloon will be deflated and traction released per physician preference within 12-24h by physician to the placement and insertion. 15. Mark placement of tube dislodged. Esophageal balloon will only be inflated if bleeding continues after gastric balloon inflated. Never inflate esophageal balloon first. Esophageal balloon will only be inflated if bleeding continues after gastric balloon inflated. Never inflate esophageal balloon first. 16. If esophageal balloon port. 17. Apply traction by attaching a 500 ml bag of IV and mucosal injury and necrosis. Traction firmly holds tube in place and places pressure on varices. 18. Tape a tongue depressor 1" from the proximal places pressure on varices. 19. Tape a tongue depressor 1" from the proximal places pressure on varices. | | |
| 14. Confirm placement by abdominal xray after gastric and/or esophageal placement. 15. Mark placement of tube with a black marker as it emerges from mouth or nose. 16. If esophageal balloon is to be inflated/deflated this must be performed by MD: a) Connect the sphygmomanometer to the esophageal balloon port. b) Using the second access off this port, inflate the balloon to 35-45 mm Hg using a cathetertipped syringe. c) Clamp the esophageal balloon port. d) MD must deflate esophageal balloon to adjust tube position. d) MD must deflate esophageal balloon to adjust tube position. To prevent air leaks from balloon. To prevent air leaks from balloon. To prevent esophageal trauma. Ensure adequate balloon inflation for tamponade. Avoid mucosal injury and necrosis. Traction firmly holds tube in place and places pressure on varices. Acts as a safety to prevent dislodgement of tube. In event of esophageal balloon migration resulting in airway occlusion. In event of esophageal balloon migration resulting in airway occlusion. In accordance with the MoHLTC 4 moments of hand hygiene and LHSC infection control policies in an effort to reduce risk of transmission of microorganisms and secretions. Care of the Patient I. Inspect traction q4h and prn. Ensure traction is being applied appropriately. Ensure proper placement of tube and for signs of ulceration. To prevent mucosal necrosis. | 13. Pull back gently on tube. | Ensure resistance on the |
| gastric and/or esophageal placement. 15. Mark placement of tube with a black marker as it emerges from mouth or nose. 16. If esophageal balloon is to be inflated/deflated this must be performed by MD: a) Connect the sphygmomanometer to the esophageal balloon port. b) Using the second access off this port, inflate the balloon to 35-45 mm Hg using a cathetertipped syringe. c) Clamp the esophageal balloon port. d) MD must deflate esophageal balloon to adjust tube position. d) MD must deflate esophageal balloon to adjust tube position. d) MD must deflate esophageal balloon to adjust tube position. To prevent air leaks from balloon. To prevent air leaks from balloon. To prevent esophageal trauma. Ensure adequate balloon inflation for tamponade. Avoid mucosal injury and necrosis. Traction firmly holds tube in place and places pressure on varices. Acts as a safety to prevent dislodgement of tube. In event of esophageal balloon migration resulting in airway occlusion. In event of esophageal balloon migration resulting in airway occlusion. Ensure adequate balloon inflation for tamponade. Avoid mucosal injury and necrosis. Traction firmly holds tube in place and places pressure on varices. Acts as a safety to prevent dislodgement of tube. In event of esophageal balloon migration resulting in airway occlusion. In event of esophageal balloon migration resulting in airway occlusion. Ensure proper placement and LHSC infection control policies in an effort to reduce risk of transmission of microorganisms and secretions. Care of the Patient Inspect traction q4h and prn. Ensure proper placement of tube and for signs of ulceration. To prevent mucosal necrosis. | | gastroesophageal junction. |
| 15. Mark placement of tube with a black marker as it emerges from mouth or nose. 16. If esophageal balloon is to be inflated/deflated this must be performed by MD: a) Connect the sphygmomanometer to the esophageal balloon port. b) Using the second access off this port, inflate the balloon to 35-45 mm Hg using a catheter-tipped syringe. c) Clamp the esophageal balloon port. d) MD must deflate esophageal balloon to adjust tube position. 17. Apply traction by attaching a 500 ml bag of IV solution to the rope located on the pulley system (see photo). Tie rope to end of the esophageal balloon port. 18. Tape a tongue depressor 1" from the proximal pulley (see photo). 19. Tape scissors to bed for quick access. Scissors must always accompany patient if transporting. If needed, cut tube closest to insertion site. 20. Remove PPE and perform hand hygiene. Care of the Patient 1. Inspect traction q4h and prn. 2. Inspect the tube placement and insertion site q1h. 3. Balloon will be deflated and traction released per physician preference within 12-24h by physician 4. Oral/nasal care q4h and prn. Teneded care point if tube dislodged. Esophageal balloon will only be inflated if bleeding continues after gastric balloon first. Esophageal balloon first. Higher pressures may cause esophageal balloon. To prevent air leaks from balloon. To prevent desophageal balloon inflated. | | |
| emerges from mouth or nose. 16. If esophageal balloon is to be inflated/deflated this must be performed by MD: a) Connect the sphygmomanometer to the esophageal balloon port. b) Using the second access off this port, inflate the balloon to 35-45 mm Hg using a cathetertipped syringe. c) Clamp the esophageal balloon port. d) MD must deflate esophageal balloon to adjust tube position. d) MD must deflate esophageal balloon to adjust tube position. To prevent air leaks from balloon. To prevent esophageal trauma. Ensure adequate balloon inflation for tamponade. Avoid mucosal injury and necrosis. Traction firmly holds tube in place and places pressure on varices. See photo). Tie rope to end of the esophageal balloon port. 18. Tape a tongue depressor 1" from the proximal pulley (see photo). 19. Tape scissors to bed for quick access. Scissors must always accompany patient if transporting. If needed, cut tube closest to insertion site. 20. Remove PPE and perform hand hygiene. Care of the Patient 1. Inspect traction q4h and prn. 2. Inspect the tube placement and insertion site q1h. 3. Balloon will be deflated and traction released per physician preference within 12-24h by physician 4. Oral/nasal care q4h and prn. To prevent air leaks from balloon. To prevent air leaks from balloon. To prevent esophageal trauma. Linspect has from balloon inflated. Never inflate esophageal balloon inflated. Never inflate esop | gastric and/or esophageal placement. | |
| 16. If esophageal balloon is to be inflated/deflated this must be performed by MD: a) Connect the sphygmomanometer to the esophageal balloon port. b) Using the second access off this port, inflate the balloon to 35-45 mm Hg using a cathetertipped syringe. c) Clamp the esophageal balloon port. d) MD must deflate esophageal balloon to adjust tube position. d) MD must deflate esophageal balloon to adjust tube position. To prevent air leaks from balloon. To prevent esophageal trauma. Ensure adequate balloon inflation for tamponade. Avoid mucosal injury and necrosis. Traction firmly holds tube in place and places pressure on varices. Traction firmly holds tube in place and places pressure on varices. Acts as a safety to prevent dislodgement of tube. 19. Tape a tongue depressor 1" from the proximal pulley (see photo). If eneded, cut tube closest to insertion site. 20. Remove PPE and perform hand hygiene. Care of the Patient 1. Inspect traction q4h and prn. Ensure traction inflated. Never inflate esophageal balloon first. Higher pressures may cause esophageal balloon inflated. Never inflate esophageal balloon first. Higher pressures may cause esophageal balloon. To prevent esophageal balloon. To prevent esophageal trauma. Ensure adequate balloon inflation for tamponade. Avoid mucosal injury and necrosis. Traction firmly holds tube in place and places pressure on varices. Acts as a safety to prevent dislodgement of tube. In event of esophageal balloon migration resulting in airway occlusion. In accordance with the MoHLTC 4 moments of hand hygiene and LHSC infection control policies in an effort to reduce risk of transmission of microorganisms and secretions. Care of the Patient 1. Inspect traction q4h and prn. Ensure traction is being applied appropriately. Ensure proper placement of tube and for signs of ulceration. To prevent mucosal necrosis. | 15. Mark placement of tube with a black marker as it | Reference point if tube dislodged. |
| this must be performed by MD: a) Connect the sphygmomanometer to the esophageal balloon port. b) Using the second access off this port, inflate the balloon to 35-45 mm Hg using a cathetertipped syringe. c) Clamp the esophageal balloon port. d) MD must deflate esophageal balloon to adjust tube position. To prevent air leaks from balloon. To prevent esophageal trauma. Ensure adequate balloon inflation for tamponade. Avoid mucosal injury and necrosis. Traction firmly holds tube in place and places pressure on varices. 17. Apply traction by attaching a 500 ml bag of IV solution to the rope located on the pulley system (see photo). Tie rope to end of the esophageal balloon port. 18. Tape a tongue depressor 1" from the proximal pulley (see photo). 19. Tape scissors to bed for quick access. Scissors must always accompany patient if transporting. If needed, cut tube closest to insertion site. 20. Remove PPE and perform hand hygiene. Laccordance with the MoHLTC 4 moments of hand hygiene and LHSC infection control policies in an effort to reduce risk of transmission of microorganisms and secretions. Care of the Patient 1. Inspect traction q4h and prn. Ensure traction is being applied appropriately. Ensure proper placement of tube and for signs of ulceration. To prevent mucosal necrosis. | emerges from mouth or nose. | |
| a) Connect the sphygmomanometer to the esophageal balloon port. b) Using the second access off this port, inflate the balloon to 35-45 mm Hg using a catheter-tipped syringe. c) Clamp the esophageal balloon port. d) MD must deflate esophageal balloon to adjust tube position. To prevent air leaks from balloon. To prevent esophageal trauma. Ensure adequate balloon inflation for tamponade. Avoid mucosal injury and necrosis. Traction firmly holds tube in place and places pressure on varices. Acts as a safety to prevent dislodgement of tube. In event of esophageal balloon migration resulting in chest pain. To prevent air leaks from balloon. To prevent esophageal trauma. Ensure adequate balloon inflation for tamponade. Avoid mucosal injury and necrosis. Traction firmly holds tube in place and places pressure on varices. Acts as a safety to prevent dislodgement of tube. In event of esophageal balloon migration resulting in airway occlusion. In accordance with the MoHLTC 4 moments of hand hygiene and LHSC infection control policies in an effort to reduce risk of transmission of microorganisms and secretions. Care of the Patient I. Inspect traction q4h and prn. Ensure traction is being applied appropriately. Ensure proper placement of tube and for signs of ulceration. To prevent mucosal necrosis. | | |
| esophageal balloon port. b) Using the second access off this port, inflate the balloon to 35-45 mm Hg using a catheter-tipped syringe. c) Clamp the esophageal balloon port. d) MD must deflate esophageal balloon to adjust tube position. To prevent esophageal trauma. To prevent esophageal trauma. Ensure adequate balloon inflation for tamponade. Avoid mucosal injury and necrosis. Traction firmly holds tube in place and places pressure on varices. See photo). Tie rope to end of the esophageal balloon port. To prevent esophageal trauma. Ensure adequate balloon inflation for tamponade. Avoid mucosal injury and necrosis. Traction firmly holds tube in place and places pressure on varices. See photo). Tie rope to end of the esophageal balloon port. To prevent esophageal trauma. Ensure adequate balloon inflation for tamponade. Avoid mucosal injury and necrosis. Traction firmly holds tube in place and places pressure on varices. Acts as a safety to prevent dislodgement of tube. In event of esophageal balloon migration resulting in airway occlusion. In event of esophageal balloon inflation for tamponade. Acts as a safety to prevent dislodgement of tube. In event of esophageal balloon inflation for tamponade. In event of esophageal balloon inflation for tamponade. Acts as a safety to prevent dislodgement of tube. In event of esophageal balloon inflation for tamponade. Acts as a safety to prevent dislodgement of tube. In event of esophageal balloon inflation for tamponade. Acts as a safety to prevent dislodgement of tube. In event of esophageal balloon inflation for tamponade. In accordance with the MoHLTC 4 moments of hand hygiene and LHSC infection control policies in an effort to reduce risk of transmission of microorganisms and secretions. Care of the Patient I. Inspect traction q4h and prn. Ensure traction is being applied appropriately. Ensure proper placement of tube and for signs of ulceration. To prevent mucosal necrosis. | · | |
| b) Using the second access off this port, inflate the balloon to 35-45 mm Hg using a catheter-tipped syringe. c) Clamp the esophageal balloon port. d) MD must deflate esophageal balloon to adjust tube position. To prevent air leaks from balloon. To prevent esophageal trauma. Ensure adequate balloon inflation for tamponade. Avoid mucosal injury and necrosis. Traction firmly holds tube in place and places pressure on varices. Traction firmly holds tube in place and places pressure on varices. 18. Tape a tongue depressor 1" from the proximal pulley (see photo). 19. Tape scissors to bed for quick access. Scissors must always accompany patient if transporting. If needed, cut tube closest to insertion site. 20. Remove PPE and perform hand hygiene. Care of the Patient 1. Inspect traction q4h and prn. Ensure traction is being applied appropriately. Ensure proper placement of tube and for signs of ulceration. To prevent air leaks from balloon. To prevent esophageal necrosis resulting in chest pain. To prevent air leaks from balloon. To prevent esophageal trauma. Higher pressures may cause esophageal necrosis resulting in chest pain. To prevent esophageal halloon. To prevent esophageal trauma. Ensure adequate balloon inflation for tamponade. Avoid mucosal injury and necrosis. Acts as a safety to prevent dislodgement of tube. In event of esophageal balloon migration resulting in airway occlusion. In accordance with the MoHLTC 4 moments of hand hygiene and LHSC infection control policies in an effort to reduce risk of transmission of microorganisms and secretions. Ensure traction is being applied appropriately. Ensure proper placement of tube and for signs of ulceration. To prevent mucosal necrosis. | a) Connect the sphygmomanometer to the | balloon inflated. Never inflate |
| the balloon to 35-45 mm Hg using a catheter- tipped syringe. c) Clamp the esophageal balloon port. d) MD must deflate esophageal balloon to adjust tube position. To prevent air leaks from balloon. To prevent esophageal trauma. Ensure adequate balloon inflation for tamponade. Avoid mucosal injury and necrosis. Traction firmly holds tube in place and places pressure on varices. Traction firmly holds tube in place and places pressure on varices. Traction firmly holds tube in place and places pressure on varices. Acts as a safety to prevent dislodgement of tube. In event of esophageal balloon migration resulting in airway occlusion. In accordance with the MOHLTC 4 moments of hand hygiene and LHSC infection control policies in an effort to reduce risk of transmission of microorganisms and secretions. Care of the Patient Inspect traction q4h and prn. Ensure traction is being applied appropriately. Ensure proper placement of tube and for signs of ulceration. To prevent air leaks from balloon. To prevent air leaks from balloon. To prevent air leaks from balloon. To prevent desophageal trauma. Ensure adequate balloon inflation for tamponade. Avoid mucosal injury and necrosis. Traction firmly holds tube in place and places pressure on varices. In event of esophageal balloon migration resulting in airway occlusion. In accordance with the MOHLTC 4 moments of hand hygiene and LHSC infection control policies in an effort to reduce risk of transmission of microorganisms and secretions. Ensure traction is being applied appropriately. Ensure proper placement of tube and for signs of ulceration. To prevent mucosal necrosis. | esophageal balloon port. | esophageal balloon first. |
| tipped syringe. c) Clamp the esophageal balloon port. d) MD must deflate esophageal balloon to adjust tube position. To prevent air leaks from balloon. To prevent esophageal trauma. Ensure adequate balloon inflation for tamponade. Avoid mucosal injury and necrosis. Traction firmly holds tube in place and places pressure on varices. 17. Apply traction by attaching a 500 ml bag of IV solution to the rope located on the pulley system (see photo). Tie rope to end of the esophageal balloon port. 18. Tape a tongue depressor 1" from the proximal pulley (see photo). 19. Tape scissors to bed for quick access. Scissors must always accompany patient if transporting. If needed, cut tube closest to insertion site. 20. Remove PPE and perform hand hygiene. Care of the Patient 1. Inspect traction q4h and prn. Ensure traction is being applied appropriately. Ensure proper placement of tube and for signs of ulceration. To prevent air leaks from balloon. To prevent esophageal trauma. To prevent esophageal trauma. To prevent esophageal trauma. To prevent esophageal trauma. Take and places pressure on varices. Acts as a safety to prevent dislodgement of tube. In event of esophageal balloon migration resulting in airway occlusion. In accordance with the MoHLTC 4 moments of hand hygiene and LHSC infection control policies in an effort to reduce risk of transmission of microorganisms and secretions. Ensure traction is being applied appropriately. Ensure proper placement of tube and for signs of ulceration. To prevent mucosal necrosis. | b) Using the second access off this port, inflate | Higher pressures may cause |
| To prevent air leaks from balloon. d) MD must deflate esophageal balloon to adjust tube position. To prevent esophageal trauma. To prevent esophageal trauma. To prevent esophageal trauma. To prevent esophageal trauma. Ensure adequate balloon inflation for tamponade. Avoid mucosal injury and necrosis. Traction firmly holds tube in place and places pressure on varices. Traction firmly holds tube in place and places pressure on varices. Acts as a safety to prevent dislodgement of tube. In event of esophageal balloon migration resulting in airway occlusion. In accordance with the MoHLTC 4 moments of hand hygiene and LHSC infection control policies in an effort to reduce risk of transmission of microorganisms and secretions. Care of the Patient In spect traction q4h and prn. Ensure traction is being applied appropriately. Ensure proper placement of tube and for signs of ulceration. To prevent air leaks from balloon. To prevent esophageal trauma. To prevent esophageal trauma. To prevent esophageal trauma. Traction firmly holds tube in place and places pressure on varices. Acts as a safety to prevent dislodgement of tube. In event of esophageal balloon migration resulting in airway occlusion. In accordance with the MoHLTC 4 moments of hand hygiene and LHSC infection control policies in an effort to reduce risk of transmission of microorganisms and secretions. Care of the Patient In Inspect traction q4h and prn. Ensure traction is being applied appropriately. Ensure proper placement of tube and for signs of ulceration. To prevent mucosal necrosis. | the balloon to 35-45 mm Hg using a catheter- | esophageal necrosis resulting in chest |
| d) MD must deflate esophageal balloon to adjust tube position. Ensure adequate balloon inflation for tamponade. Avoid mucosal injury and necrosis. 17. Apply traction by attaching a 500 ml bag of IV solution to the rope located on the pulley system (see photo). Tie rope to end of the esophageal balloon port. 18. Tape a tongue depressor 1" from the proximal pulley (see photo). 19. Tape scissors to bed for quick access. Scissors must always accompany patient if transporting. If needed, cut tube closest to insertion site. 20. Remove PPE and perform hand hygiene. In accordance with the MoHLTC 4 moments of hand hygiene and LHSC infection control policies in an effort to reduce risk of transmission of microorganisms and secretions. Care of the Patient 1. Inspect traction q4h and prn. Ensure traction is being applied appropriately. Ensure proper placement of tube and for signs of ulceration. To prevent esophageal trauma. Ensure adequate balloon inflation for tamponade. Avoid mucosal injury and necrosis. Traction firmly holds tube in place and places pressure on varices. Acts as a safety to prevent dislodgement of tube. In event of esophageal balloon migration resulting in airway occlusion. In accordance with the MoHLTC 4 moments of hand hygiene and LHSC infection control policies in an effort to reduce risk of transmission of microorganisms and secretions. Ensure traction is being applied appropriately. Ensure proper placement of tube and for signs of ulceration. To prevent mucosal necrosis. | tipped syringe. | pain. |
| tube position. Ensure adequate balloon inflation for tamponade. Avoid mucosal injury and necrosis. 17. Apply traction by attaching a 500 ml bag of IV solution to the rope located on the pulley system (see photo). Tie rope to end of the esophageal balloon port. 18. Tape a tongue depressor 1" from the proximal pulley (see photo). 19. Tape scissors to bed for quick access. Scissors must always accompany patient if transporting. If needed, cut tube closest to insertion site. 20. Remove PPE and perform hand hygiene. 10. In accordance with the MoHLTC 4 moments of hand hygiene and LHSC infection control policies in an effort to reduce risk of transmission of microorganisms and secretions. Care of the Patient 1. Inspect traction q4h and prn. Ensure traction is being applied appropriately. 2. Inspect the tube placement and insertion site q1h. 3. Balloon will be deflated and traction released per physician preference within 12-24h by physician 4. Oral/nasal care q4h and prn. To prevent mucosal necrosis. | c) Clamp the esophageal balloon port. | To prevent air leaks from balloon. |
| Ensure adequate balloon inflation for tamponade. Avoid mucosal injury and necrosis. 17. Apply traction by attaching a 500 ml bag of IV solution to the rope located on the pulley system (see photo). Tie rope to end of the esophageal balloon port. 18. Tape a tongue depressor 1" from the proximal pulley (see photo). 19. Tape scissors to bed for quick access. Scissors must always accompany patient if transporting. If needed, cut tube closest to insertion site. 20. Remove PPE and perform hand hygiene. In accordance with the MoHLTC 4 moments of hand hygiene and LHSC infection control policies in an effort to reduce risk of transmission of microorganisms and secretions. Care of the Patient 1. Inspect traction q4h and prn. Ensure traction is being applied appropriately. Ensure proper placement of tube and for signs of ulceration. 3. Balloon will be deflated and traction released per physician preference within 12-24h by physician 4. Oral/nasal care q4h and prn. To prevent mucosal necrosis. | , , | To prevent esophageal trauma. |
| tamponade. Avoid mucosal injury and necrosis. 17. Apply traction by attaching a 500 ml bag of IV solution to the rope located on the pulley system (see photo). Tie rope to end of the esophageal balloon port. 18. Tape a tongue depressor 1" from the proximal pulley (see photo). 19. Tape scissors to bed for quick access. Scissors must always accompany patient if transporting. If needed, cut tube closest to insertion site. 20. Remove PPE and perform hand hygiene. 10. In accordance with the MoHLTC 4 moments of hand hygiene and LHSC infection control policies in an effort to reduce risk of transmission of microorganisms and secretions. 18. Tape a tongue depressor 1" from the proximal pulley (see photo). 19. Tape scissors to bed for quick access. Scissors must always accompany patient if transporting. In event of esophageal balloon migration resulting in airway occlusion. In accordance with the MoHLTC 4 moments of hand hygiene and LHSC infection control policies in an effort to reduce risk of transmission of microorganisms and secretions. 19. Tape scissors to bed for quick access. Scissors must always accompany patient if transporting. In event of esophageal balloon migration resulting in airway occlusion. 19. Tape scissors to bed for quick access. Scissors must always accompany patient if transporting. In event of esophageal balloon migration resulting in airway occlusion. 10. In accordance with the MoHLTC 4 moments of hand hygiene and LHSC infection control policies in an effort to reduce risk of transmission of microorganisms and secretions. 10. Ensure traction is being applied appropriately. 11. Ensure proper placement of tube and for signs of ulceration. 12. In prevent mucosal necrosis. | 1 | Ensure adequate balloon inflation for |
| Avoid mucosal injury and necrosis. 17. Apply traction by attaching a 500 ml bag of IV solution to the rope located on the pulley system (see photo). Tie rope to end of the esophageal balloon port. 18. Tape a tongue depressor 1" from the proximal pulley (see photo). 19. Tape scissors to bed for quick access. Scissors must always accompany patient if transporting. If needed, cut tube closest to insertion site. 20. Remove PPE and perform hand hygiene. 20. Remove PPE and perform hand hygiene. Care of the Patient 1. Inspect traction q4h and prn. Ensure traction is being applied appropriately. Ensure proper placement of tube and for signs of ulceration. To prevent mucosal necrosis. | | <u> </u> |
| 17. Apply traction by attaching a 500 ml bag of IV solution to the rope located on the pulley system (see photo). Tie rope to end of the esophageal balloon port. 18. Tape a tongue depressor 1" from the proximal pulley (see photo). 19. Tape scissors to bed for quick access. Scissors must always accompany patient if transporting. If needed, cut tube closest to insertion site. 20. Remove PPE and perform hand hygiene. 20. Remove PPE and perform hand hygiene. Care of the Patient 1. Inspect traction q4h and prn. Care of the Uplacement and insertion site q1h. 2. Inspect the tube placement and insertion site q1h. 3. Balloon will be deflated and traction released per physician preference within 12-24h by physician 4. Oral/nasal care q4h and prn. Traction firmly holds tube in place and places pressure on varices. Traction firmly holds tube in place and places pressure on varices. Traction firmly holds tube in place and places pressure on varices. Traction firmly holds tube in place and places pressure on varices. Acts as a safety to prevent dislodgement of tube. In event of esophageal balloon migration resulting in airway occlusion. In accordance with the MoHLTC 4 moments of hand hygiene and LHSC infection control policies in an effort to reduce risk of transmission of microorganisms and secretions. Ensure traction is being applied appropriately. To prevent mucosal necrosis. | | · |
| solution to the rope located on the pulley system (see photo). Tie rope to end of the esophageal balloon port. 18. Tape a tongue depressor 1" from the proximal pulley (see photo). 19. Tape scissors to bed for quick access. Scissors must always accompany patient if transporting. If needed, cut tube closest to insertion site. 20. Remove PPE and perform hand hygiene. 20. Remove PPE and perform hand hygiene. In accordance with the MoHLTC 4 moments of hand hygiene and LHSC infection control policies in an effort to reduce risk of transmission of microorganisms and secretions. Care of the Patient 1. Inspect traction q4h and prn. Ensure traction is being applied appropriately. 2. Inspect the tube placement and insertion site q1h. 3. Balloon will be deflated and traction released per physician preference within 12-24h by physician 4. Oral/nasal care q4h and prn. To prevent mucosal necrosis. | 17. Apply traction by attaching a 500 ml bag of IV | |
| (see photo). Tie rope to end of the esophageal balloon port. 18. Tape a tongue depressor 1" from the proximal pulley (see photo). 19. Tape scissors to bed for quick access. Scissors must always accompany patient if transporting. If needed, cut tube closest to insertion site. 20. Remove PPE and perform hand hygiene. In accordance with the MoHLTC 4 moments of hand hygiene and LHSC infection control policies in an effort to reduce risk of transmission of microorganisms and secretions. Care of the Patient 1. Inspect traction q4h and prn. Ensure traction is being applied appropriately. 2. Inspect the tube placement and insertion site q1h. 3. Balloon will be deflated and traction released per physician preference within 12-24h by physician 4. Oral/nasal care q4h and prn. To prevent mucosal necrosis. | | |
| Tie rope to end of the esophageal balloon port. 18. Tape a tongue depressor 1" from the proximal pulley (see photo). 19. Tape scissors to bed for quick access. Scissors must always accompany patient if transporting. If needed, cut tube closest to insertion site. 20. Remove PPE and perform hand hygiene. 20. Remove PPE and perform hand hygiene. In accordance with the MoHLTC 4 moments of hand hygiene and LHSC infection control policies in an effort to reduce risk of transmission of microorganisms and secretions. Care of the Patient 1. Inspect traction q4h and prn. Ensure traction is being applied appropriately. 2. Inspect the tube placement and insertion site q1h. 3. Balloon will be deflated and traction released per physician preference within 12-24h by physician 4. Oral/nasal care q4h and prn. To prevent mucosal necrosis. | | |
| 18. Tape a tongue depressor 1" from the proximal pulley (see photo). 19. Tape scissors to bed for quick access. Scissors must always accompany patient if transporting. If needed, cut tube closest to insertion site. 20. Remove PPE and perform hand hygiene. 20. Remove PPE and perform hand hygiene. In accordance with the MoHLTC 4 moments of hand hygiene and LHSC infection control policies in an effort to reduce risk of transmission of microorganisms and secretions. Care of the Patient 1. Inspect traction q4h and prn. Ensure traction is being applied appropriately. 2. Inspect the tube placement and insertion site q1h. 3. Balloon will be deflated and traction released per physician preference within 12-24h by physician 4. Oral/nasal care q4h and prn. To prevent mucosal necrosis. | · · · | |
| pulley (see photo). 19. Tape scissors to bed for quick access. Scissors must always accompany patient if transporting. If needed, cut tube closest to insertion site. 20. Remove PPE and perform hand hygiene. 20. Remove PPE and perform hand hygiene. In accordance with the MoHLTC 4 moments of hand hygiene and LHSC infection control policies in an effort to reduce risk of transmission of microorganisms and secretions. Care of the Patient 1. Inspect traction q4h and prn. Ensure traction is being applied appropriately. 2. Inspect the tube placement and insertion site q1h. 3. Balloon will be deflated and traction released per physician preference within 12-24h by physician 4. Oral/nasal care q4h and prn. To prevent mucosal necrosis. | | Acts as a safety to prevent |
| 19. Tape scissors to bed for quick access. Scissors must always accompany patient if transporting. If needed, cut tube closest to insertion site. 20. Remove PPE and perform hand hygiene. 20. Remove PPE and perform hand hygiene. In accordance with the MoHLTC 4 moments of hand hygiene and LHSC infection control policies in an effort to reduce risk of transmission of microorganisms and secretions. Care of the Patient 1. Inspect traction q4h and prn. Ensure traction is being applied appropriately. 2. Inspect the tube placement and insertion site q1h. 3. Balloon will be deflated and traction released per physician preference within 12-24h by physician 4. Oral/nasal care q4h and prn. To prevent mucosal necrosis. | · · · · · · · · · · · · · · · · · · · | |
| must always accompany patient if transporting. If needed, cut tube closest to insertion site. 20. Remove PPE and perform hand hygiene. In accordance with the MoHLTC 4 moments of hand hygiene and LHSC infection control policies in an effort to reduce risk of transmission of microorganisms and secretions. Care of the Patient 1. Inspect traction q4h and prn. Ensure traction is being applied appropriately. 2. Inspect the tube placement and insertion site q1h. 3. Balloon will be deflated and traction released per physician preference within 12-24h by physician 4. Oral/nasal care q4h and prn. migration resulting in airway occlusion. In accordance with the MoHLTC 4 moments of hand hygiene and LHSC infection control policies in an effort to reduce risk of transmission of microorganisms and secretions. Ensure traction is being applied appropriately. To prevent mucosal necrosis. | | In event of esophageal balloon |
| If needed, cut tube closest to insertion site. 20. Remove PPE and perform hand hygiene. In accordance with the MoHLTC 4 moments of hand hygiene and LHSC infection control policies in an effort to reduce risk of transmission of microorganisms and secretions. Care of the Patient 1. Inspect traction q4h and prn. Ensure traction is being applied appropriately. 2. Inspect the tube placement and insertion site q1h. 3. Balloon will be deflated and traction released per physician preference within 12-24h by physician 4. Oral/nasal care q4h and prn. To prevent mucosal necrosis. | | |
| moments of hand hygiene and LHSC infection control policies in an effort to reduce risk of transmission of microorganisms and secretions. Care of the Patient 1. Inspect traction q4h and prn. Ensure traction is being applied appropriately. 2. Inspect the tube placement and insertion site q1h. Sensure proper placement of tube and for signs of ulceration. To prevent mucosal necrosis. To prevent mucosal necrosis. | | |
| infection control policies in an effort to reduce risk of transmission of microorganisms and secretions. Care of the Patient 1. Inspect traction q4h and prn. Ensure traction is being applied appropriately. 2. Inspect the tube placement and insertion site q1h. Bensure traction is being applied appropriately. Ensure proper placement of tube and for signs of ulceration. To prevent mucosal necrosis. To prevent mucosal necrosis. | 20. Remove PPE and perform hand hygiene. | In accordance with the MoHLTC 4 |
| reduce risk of transmission of microorganisms and secretions. Care of the Patient 1. Inspect traction q4h and prn. 2. Inspect the tube placement and insertion site q1h. 3. Balloon will be deflated and traction released per physician preference within 12-24h by physician 4. Oral/nasal care q4h and prn. reduce risk of transmission of microorganisms and secretions. Ensure traction is being applied appropriately. Ensure proper placement of tube and for signs of ulceration. To prevent mucosal necrosis. | | moments of hand hygiene and LHSC |
| Care of the Patient 1. Inspect traction q4h and prn. 2. Inspect the tube placement and insertion site q1h. 3. Balloon will be deflated and traction released per physician preference within 12-24h by physician 4. Oral/nasal care q4h and prn. microorganisms and secretions. Ensure traction is being applied appropriately. Ensure proper placement of tube and for signs of ulceration. To prevent mucosal necrosis. | | infection control policies in an effort to |
| 1. Inspect traction q4h and prn. 2. Inspect the tube placement and insertion site q1h. 3. Balloon will be deflated and traction released per physician preference within 12-24h by physician 4. Oral/nasal care q4h and prn. Ensure traction is being applied appropriately. Ensure proper placement of tube and for signs of ulceration. To prevent mucosal necrosis. | | reduce risk of transmission of |
| 1. Inspect traction q4h and prn. 2. Inspect the tube placement and insertion site q1h. 3. Balloon will be deflated and traction released per physician preference within 12-24h by physician 4. Oral/nasal care q4h and prn. Ensure traction is being applied appropriately. Ensure proper placement of tube and for signs of ulceration. To prevent mucosal necrosis. | | microorganisms and secretions. |
| 2. Inspect the tube placement and insertion site q1h. 3. Balloon will be deflated and traction released per physician preference within 12-24h by physician 4. Oral/nasal care q4h and prn. appropriately. Ensure proper placement of tube and for signs of ulceration. To prevent mucosal necrosis. | Care of the Patient | |
| 2. Inspect the tube placement and insertion site q1h. 3. Balloon will be deflated and traction released per physician preference within 12-24h by physician 4. Oral/nasal care q4h and prn. appropriately. Ensure proper placement of tube and for signs of ulceration. To prevent mucosal necrosis. | 1. Inspect traction q4h and prn. | Ensure traction is being applied |
| Inspect the tube placement and insertion site q1h. Balloon will be deflated and traction released per physician preference within 12-24h by physician Oral/nasal care q4h and prn. Ensure proper placement of tube and for signs of ulceration. To prevent mucosal necrosis. To prevent mucosal necrosis. | | = |
| for signs of ulceration. 3. Balloon will be deflated and traction released per physician preference within 12-24h by physician 4. Oral/nasal care q4h and prn. for signs of ulceration. To prevent mucosal necrosis. To prevent mucosal necrosis. | 2. Inspect the tube placement and insertion site a1h. | |
| 3. Balloon will be deflated and traction released per physician preference within 12-24h by physician 4. Oral/nasal care q4h and prn. To prevent mucosal necrosis. To prevent mucosal necrosis. | , | |
| physician preference within 12-24h by physician 4. Oral/nasal care q4h and prn. To prevent mucosal necrosis. | 3. Balloon will be deflated and traction released per | |
| 4. Oral/nasal care q4h and prn. To prevent mucosal necrosis. | · | , |
| | | To prevent mucosal necrosis. |
| , or it you are required to transport a patient with the control maintaine some traction on the | 5. If you are required to transport a patient with the | This maintains some traction on the |

| Scissors must remain with patient at all times. | In event of esophageal balloon migration resulting in airway occlusion. |
|---|---|
| Minnesota tube, remove pulley with the weight attached, and place on the bed near the foot. | Minnesota tube while in transport. |

Removal of Minnesota Tube

| 1. If no further bleeding, the MD will reduce pressure | Gradual deflation of balloon allows for |
|--|--|
| in the balloon gradually at his/her discretion. | the assessment that bleeding has |
| | stopped. |
| 2. MD deflates esophageal balloon first. | If gastric balloon deflated first, an |
| | inflated esophageal balloon can migrate |
| O Observe national for 40 has and required for since of | into the airway. |
| 3. Observe patient for 12 hrs and monitor for signs of | |
| rebleeding | Traction must be released before the |
| 4. If no bleeding reoccurs, release the traction. | gastric balloon is deflated. |
| 5. MD will gradually deflate the gastric balloon in | Gradual deflation of balloon allows for |
| increments. | the assessment that bleeding has |
| morements. | stopped. |
| 6. If bleeding has not reoccurred in 24 hrs, cut the | Ensures complete balloon deflation |
| tube proximal to the patient. | before tube removal. |
| 7. If bleeding reoccurs, the MD will inflate the gastric | |
| balloon and esophageal balloon if needed. | |
| 8. Gently remove remaining Minnesota tube from the | In accordance with the MoHLTC 4 |
| patient and dispose in Biohazard container. Remove | moments of hand hygiene and LHSC |
| PPE and perform hand hygiene. | infection control policies in an effort to |
| | reduce risk of transmission of |
| | microorganisms and secretions. |
| Decumentation | |
| Documentation | |
| 1. On A/I flowsheet, document reason for insertion, | |
| time, site, MD, complications, patient tolerance, | |
| traction, confirmation of placement, status of balloon(s) inflation. | |
| Any adjustments made by MD to traction or balloon | |
| placement. | |
| 2. On kardex, date/time, site of insertion, status of | |
| balloon(s) inflation. | |
| 3.On fluid balance record, hourly output from | |
| esophageal and gastric suction. | |
| | <u> </u> |

Revised 2008

Judy Hackett RN BScN CCTC Clinical Educator Gina Souliere RN BScN CCTC Clinical Educator

Last reviewed: March 23, 2010

References

Lynn-McHale, D.J., Carlson, K.K. AACN Procedure Manual for Critical Care. 5th ed. 2005. Elsevier Saunders: Missouri.

Greenwald, B. (2003) The Minnesota Tube It's Use and Care in Bleeding Esophageal and Gastric Varices. *Gastroenterology Nursing*, 27(5), 212-17.

ICU Procedure for Minnesota Tube: Assisting with Insertion for GI Bleeding. 2004. R. McCready

Bard Limited 1998. Bard Minnesota Four Lumen Esophagastric Tamponade for the Control of Bleeding from Esophageal Varices.