Providence HEALTH CARE	Department: **Respiratory Services**	Date Originated: October 2000 Date Reviewed/Revised: **April 2010**
PROCEDURE	Topic: Emergency - Fastrach Laryngeal mask Airway (LMA) (Respiratory Therapy) Number: B-00-12-12043	Related Links:

APPLICABLE SITES:

St. Paul's Hospital
Mount Saint Joseph Hospital

GENERAL INFORMATION:

The LMA Fastrach is an advanced airway adjunct designed to facilitate tracheal intubation with an endotracheal tube. It permits right handed insertion without moving the head and neck from a neutral position, and without placing fingers in the patient's mouth.

In the Emergency Department, the LMA is used in difficult intubation situations. The LMA forms an end-to-end seal around the glottis, and the appropriate size ensures that the LMA is not inserted into either the esophagus or tracheal.

CAUTIONS:

When used alone, the LMA Fastrach airway does not reliably protect the airway from the effects of regurgitation and aspiration. If used incorrectly it is possible to obtain an unreliable or obstructed airway.

Armored endotracheal tubes that are specifically made for the LMA must be used. All three sizes of ETT will fit each size of LMA if lubricated properly.

EQUIPMENT:

- LMA Fastrach single use airway
  - Size 3
  - Size 4
  - Size 5
- Fastrach armored endotracheal tubes
  - Size 7.0
  - Size 7.5
  - Size 8.0
- Stabilizer rod
- Lubricant
- 60 mL syringe

PROCEDURE FOR PRE-INSERTION PREPARATION:

1. Gather all necessary equipment. Examine the Fastrach LMA and ensure it's free from blockage or loose particles. Do not use if cuts or tears are present.

2. Carefully insert a syringe into the valve port and fully deflate the cuff so that the cuff walls are tightly flattened against each other. Remove the syringe from the valve port. Examine the cuff walls to determine whether they remain tightly flattened against each other.

3. Reinsert the syringe and test for leakage by overinflating the cuff with the volume of air as noted below:

    - Size 3 use 30 mL of air
    - Size 4 use 45 mL of air
    - Size 5 use 60 mL of air

4. Any tendency of the cuff to deflate indicates a leak and should be evident within two minutes. Examine the symmetry of the inflated cuff. There should be no uneven bulging at either end or on the sides, and it should not be spherical shaped.

5. While the device remains overinflated, examine the blue inflation indicator balloon situated beneath the syringe port and valve. The balloon shape should be elliptical with no bulges.

6. The cuff should be tightly deflated using a syringe so that no air is left in the cuff and it forms a smooth "wedge" or "spoon" shape without any wrinkles. This can be achieved by compressing the mask tip between finger and thumb to achieve the correct shape.

7. While withdrawing air from the cuff, pull back gently on the inflation line to obtain the correct shape. A completely smooth, tightly deflated leading edge facilitates insertion, avoids contact with the epiglottis, and is important to assure success when positioning the device.

8. Just prior to insertion, apply a bolus of water-soluble lubricant to the posterior mask tip.

PROCEDURE FOR INSERTION OF THE FASTRACH LMA:

1. Check that the LMA is the correct size for the patient as follows:

    - Size 3 for 30 – 50 Kg
    - Size 4 for 50 – 70 Kg
    - Size 5 for 70 – 100 Kg

2. Ensure the cuff is fully deflated by firmly pulling back on the deflating syringe and gently pulling on the inflation line.

3. Pre-oxygenate the patient. Ensure a spare LMA is readily available.

4. Position the head by placing a pillow or folded blanket under their head to achieve a neutral position. Do not extend the head.

5. Hold the LMA by its handle with the handle approximately parallel to the patient's chest. Carefully position the mask tip so it is flat against the hard palate just inside the mouth, immediately posterior to the upper incisors.

6. Slide the mask tip briefly back and forth on the palate to distribute the lubricant while also pressing it against the palate to prevent accidental folding of the tip. Slide the mask backwards, following the curve of the rigid airway tube.

7. Do not use the handle as a lever to force the mouth open. The curved part of the tube should be advanced without rotation until it contacts the patient's chin, then kept in contact with the patient's chin as the device is rotated inwards. Do not begin rotation until the straight part of the airway is in contact with the patient's chin.

8. The tube curvature closely follows the anatomical curve of the palate and the posterior pharyngeal wall with the head and neck in the neutral position. Keep the mask firmly applied to the soft palate and posterior pharyngeal wall as it is swung down into place to avoid accidental folding of the mask tip.

9. After insertion, inflate the cuff with just enough air to obtain a seal, corresponding to a pressure of approximately 60 cmH_2O. Usually only half of the recommended maximum cuff volume is adequate for a seal, as noted below:

    - Size 3 use maximum 20 mL
    - Size 4 use maximum 30 mL
    - Size 5 use maximum 40 mL

10. Short term manual ventilation may be provided by attaching directly to the LMA at this point.

PROCEDURE FOR INTUBATION THROUGH THE FASTRACH LMA:

1. Pre-oxygenate the patient.

2. Place a small amount of lubrication on the cuff of the endotracheal tube.

3. Grasp the LMA handle with one hand and gently pass the ETT into the airway tube, rotating it and moving it up and down within the airway to distribute the lubricant until it passes freely through the entire extent of the tube.

4. When using the Fastrach LMA, the longitudinal line on the ETT should face the handle of the LMA. The ETT should not be advanced beyond the transverse line which indicates the point at which the beveled tip is about to enter the mask aperture of the LMA, which is the 15 cm marking on an ETT.

5. Grip the handle firmly, and use it to draw the larynx forward a few millimeters, which increases the pressure of the seal, and ensures optimal alignment of the axis of the trachea and the ETT.

6. Gently attempt to pass the ETT about 1.5 cm past the transverse marking on the tube. Do not press the handle downward while doing this.

7. If no resistance is felt, continue to slowly advance the ETT, using clinical judgment to determine when the tube is in good position within the trachea.

8. Inflate the cuff on the endotracheal tube. Confirm intubation using capnography.

TIPS FOR OVERCOMING ETT INSERTION RESISTANCE:

Resistance felt ___ cm beyond ETT transverse line	**Possible Reason**	**Possible Solution**
2 cm	Tube impaction on vestibular wall	Rotating the ETT bevel
2 cm	Epiglottis folded down	Reoptimize and reattempt intubation
3 cm	Fastrach LMA too small	Change to larger size
Immediately	Fastrach LMA too large	Change to smaller size
4 cm	Fastrach LMA too large	Use smaller size

PROCEDURE FOR REMOVAL OF THE FASTRACH LMA POST-INTUBATION:

1. Using the LMA stabilizer rod, measure the approximate distance between the proximal end of the endotracheal tube and the patient's teeth and note the marking.

2. Pre-oxygenate the patient. Remove the ETT connector.

3. Fully deflate the cuff of the Fastrach LMA. Leave the cuff of the ETT fully inflated.

4. With the stabilizer tip attached to the end of the ETT, ease the LMA out by gently tapping or swinging the handle around the chin. This is the reverse of the insertion procedure.

5. Using the curvature of the tube, swing the mask out of the pharynx into the oral cavity while applying counter-pressure to the ETT with a finger.

6. When the proximal end of the ETT is level with the proximal end of the LMA, hold the stabilizer rod in place and slide the LMA out until it is clear of the mouth and the ETT can be directly grasped at the level of the incisors.

7. Remove the stabilizer rod and steady the ETT to prevent accidental dislodgement. Carefully remove the inflation line and pilot balloon from the tube of the LMA.

8. Use the stabilizer rod again to check for the position of the ETT by measuring the distance from the proximal end to the teeth and compare to the earlier measurement. Adjust the tube position if necessary.

9. Replace the ETT connector and secure the endotracheal tube. Ventilate as appropriate.