FEEDBACK TO THE FIELD (FT2F) #10: Observations of Supraglottic Tube Placement *

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FEEDBACK TO THE FIELD (FT2F) #10:

OBSERVATIONS of

SUPRAGLOTTIC TUBE PLACEMENT

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BACKGROUND:

• The King LT-D Disposable Supraglottic Airway (King Systems Corp, Noblesville, IN) is one of the supraglottic tubes used in field resuscitation

• In a review of 7 cases which used the King LT-D, we observed two patterns of tube positioning

• The clinical circumstances and details surrounding tube placements in these cases are unknown

• Case findings are based on autopsies performed at the Port Mortuary, Dover Air Force Base, DE. Lethal injury was present in all cases
BACKGROUND:

• All 7 supraglottic tubes observed in this review were King LT-D, size #4

• Sizing of tubes is based on patient’s height:

<table>
<thead>
<tr>
<th>Height Range</th>
<th>Size</th>
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</thead>
<tbody>
<tr>
<td>4 to 5 ft (122-155 cm)</td>
<td>3</td>
</tr>
<tr>
<td>5 to 6 ft (155-180 cm)</td>
<td>4</td>
</tr>
<tr>
<td>&gt; than 6 ft (180 cm)</td>
<td>5</td>
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</tbody>
</table>

• Tube position was determined by postmortem CT
• Tube cuffs were inflated in 6 of 7 cases
OVERVIEW: KING LT-D

Connectors Color
Size 3 (Yellow) – Size 4 (Red) – Size 5 (Purple)

Depth Markings
(Distance in centimeters from Distal Opening)

Single Inflation Valve

Proximal Cuff
Inflates at the base of the tongue. Isolates the laryngopharynx from the oropharynx and nasopharynx

Distal Cuff
Inflates in the esophagus. Isolates the laryngopharynx from the esophagus.

Two primary Ventilatory Outlets
OVERVIEW: KING LT-D Placement

*Source: King Systems Corp, EMS In-service Program*
**Position 1:**
Recommended by manufacturer

- Proximal cuff (PC) at base of tongue
- Distal cuff (DC) in the esophagus

- Our observation: 3 of 7 King LT-Ds were in Position 1
Case with tube in Position 1
**Position 2:**
Not recommended due to inadequate ventilation

- Proximal cuff (PC) in oropharynx
- Distal cuff (DC) in larynx above tracheal inlet

- Our observation: 4 of 7 King LT-Ds were in Position 2
Case with tube in Position 2
USER TIPS ON INSERTION*

4. Depth of insertion is key to providing a patent airway. Ventilatory openings of the KLTD/KLTSD must align with the laryngeal inlet for adequate oxygenation/ventilation. Experience has indicated that initially placing the KLTD/KLTSD deeper (base of connector is aligned with teeth or gums), inflating the cuffs, and retracting until ventilation becomes easy and free flowing is preferred because:

- It ensures that the distal tip has not been placed laterally in the piriform fossa (see item #3).

- With a deeper initial insertion, only withdrawal is required to realize a patent airway. A shallow insertion will require deflation of cuffs to advance the tube deeper.

- As the KLTD/KLTSD is withdrawn, the initial ventilation opening exposed to/aligned with the laryngeal inlet is the proximal opening. Since the proximal opening is closest to and is partially surrounded by the proximal cuff, airway obstruction is less likely.

- Withdrawal of the KLTD/KLTSD with the cuffs inflated results in a retraction of tissue away from the laryngeal inlet, thereby encouraging a patent airway.

* Source: King Systems Corp, EMS In-service Program
SUMMARY:

• In over half of the cases reviewed (4 of 7), King LT-D #4 tubes were not positioned as manufacturer instructions specify
  o Proximal cuff was located in the oral cavity and distal cuff in the larynx

NOTE of CAUTION:

• The clinical circumstances and details surrounding emergency treatment in these cases is unknown
• This presentation makes no association between supraglottic tube position and patient outcome, lethal injury was present in all cases
DMMPO RECOMMENDATIONS / ACTIONS:

• Services should perform utilization review of supraglottic tubes to determine:
  o Which devices are being trained
  o Which devices are in assemblages
  o Training requirements & Tactics, Techniques and Procedure (TTPs) updates

• Consider standardization of the following:
  o Airway equipment and devices
  o Training procedures
This material is intended for educational and training purposes. If portions are extracted, the following statement must be included:

“Source: Armed Forces Medical Examiner System and DHA Medical Logistics Division”

NOTES of CAUTION:

• The clinical circumstances and details surrounding emergency treatment in these cases is unknown

• This presentation makes no association between device placement and outcome of treatment

• This case series is drawn from cases with fatal injuries, which may skew data
For FT2F Comments / Questions / Requests:
Contact the Armed Forces Medical Examiner System (AFMES)

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