

octagon[®] LAO Tube

Lindholm Anatomical Oval Orotracheal Tube

- **Less complications - Shorter rehabilitation**
- **Improved patient comfort**
- **Reduced surgical intervention**
- **Cost savings**



Simplifies the care - improves the health outcome

Designed to supercede the standard semi-circular tube that is renowned for causing painful laryngeal damage and hoarseness in as many as 70% of intubations, Professor Carl-Eric Lindholm's LAO Tube conforms to both the contour of the airway and the arytenoid cartilages. This results in safer and more comfortable intubations for the patient (delaying the need for any eventual tracheostomy), thus achieving shorter recovery times and cost savings.

It is hailed by an increasing amount of ENT departments across Sweden as the best news for intubated patients in eighty years. The LAO Tube is the clear choice for all intubations and can considerably reduce follow-up surgery, which results in less wasted human and financial resources.

Potential cost savings using the LAO Tube

Erikson, Lindholm and Wenström (2004) found that there are considerable cost savings for hospitals using the LAO Tube instead of a standard semi-circular tube. Their research showed a cost saving of greater than € 10 000 on 1 000 prolonged intubated patients when using the LAO Tube.

Fogless in facts

Fogless[®] develops and produces medical devices to enhance the quality of life for people with respiratory problems. Fogless[®] introduces medical devices in a responsible way in co-operation with qualified partners with good reputation on the specific market.

Today we are represented worldwide in more than 30 countries.

Fogless[®] is certified according to SS-EN ISO 9001:2008 and SS-EN ISO13485:2003.

"A better life with Fogless[®]"



Made in Sweden by Fogless International AB • P.O. Box 84 • SE-551 12 Jönköping
Phone: +46 (0)36 14 41 00 • Fax: +46 (0)36 14 41 16
e-mail: mail@fogless.se • Website: www.fogless.se

octagon[®] LAO Tube is patented and CE marked



octagon[®] LAO Tube

Lindholm Anatomical Oval Orotracheal Tube

Common problems after tracheal intubation (non LAO Tube)

1. The standard shaped tracheal tube exerts pressure at the posterior part of the larynx and at the anterior wall of the trachea, fig 1.

Cause

The standard shaped tracheal tube is forced to assume the contour of the airway and due to the tube's elasticity it exerts pressure posteriorly at the larynx and anteriorly at the trachea, see references 1, 3, 4, 6 and 7.

Solution with LAO Tube

The LAO Tube has the same anatomical contour as the airway, which is why the tube does not exert pressure posteriorly at the larynx and it assumes a central position in the trachea, fig 2.

2. The space between the arytenoid cartilages is too small to accommodate a round tube, fig 3.

Cause

The outer diameter of commonly used round tubes is larger than the distance between the arytenoid cartilages in at least half of the population, see reference 5.

Solution with LAO Tube

The LAO Tube has an oval cross section contrary to the standard tube, which is round. The smallest diameter of the oval cross section is located between the arytenoid cartilages, thereby minimising the lateral pressure on this area, fig 4. The frequency and severity of these pressure induced lesions at the arytenoid cartilages will therefore be substantially reduced, see reference 2 and 5.

Patents

Sweden and most major countries.

References

1. Benjamin, B. "Prolonged intubation injuries of the larynx: Diagnosis, classification and treatment" - Ann. Otol, Rhinol. Suppl. 102: 1 - 35, 1993.
2. Benjamin, B. & Holinger, L. "Laryngeal Complications of Endotracheal Intubation", - Annals of Otology, Rhinology & Laryngology 117(9) Suppl 200, 2008.
3. Eckerbom, B., et al. "Airway lesions caused by prolonged intubation with standard tubes and with anatomically shaped tracheal tubes. A post mortem study." - Acta Anaesthesiol. Scand. 30: 366 - 373, 1986.
4. Lindholm, C.E. "Prolonged endotracheal intubation" - Acta Anaesthesiol. Scand. Suppl. 33, 1969.
5. Randestad, A., et al. "Dimensions of the cricoid cartilage and the trachea" - Laryngoscope 110: 1957 - 1961, 2000.
6. Steen, A.J., et al. "Tracheal tube forces on the posterior larynx: Index of laryngeal loading" - Crit Care Med. 10: 186 - 189, 1982.
7. Verhulst, J., et al. "Laryngotracheal complications due to prolonged intubation" - Tracheal tubation (book). Editors: Cros, Anne-Mari; Janvier, Gerhard. Editions Paradel, Paris 1992.

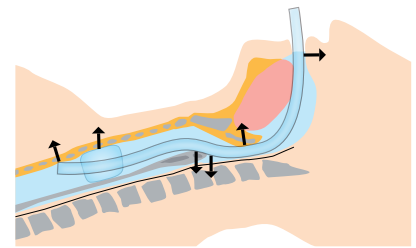


Fig 1

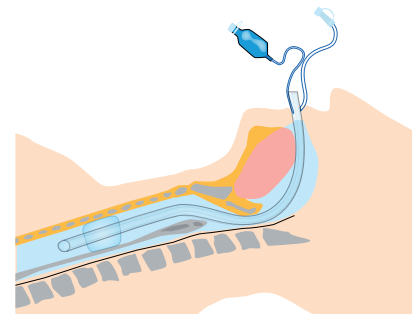


Fig 2

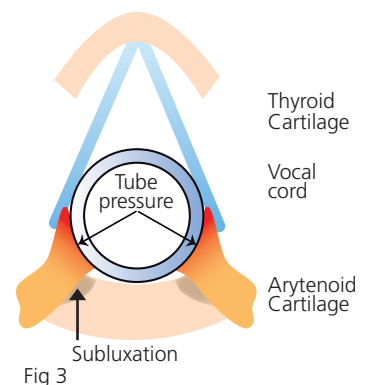


Fig 3

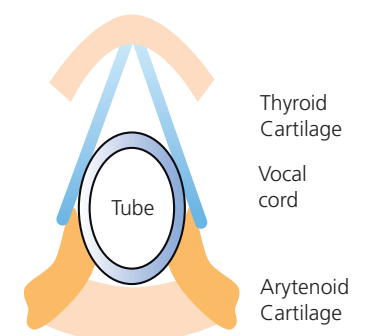


Fig 4

