

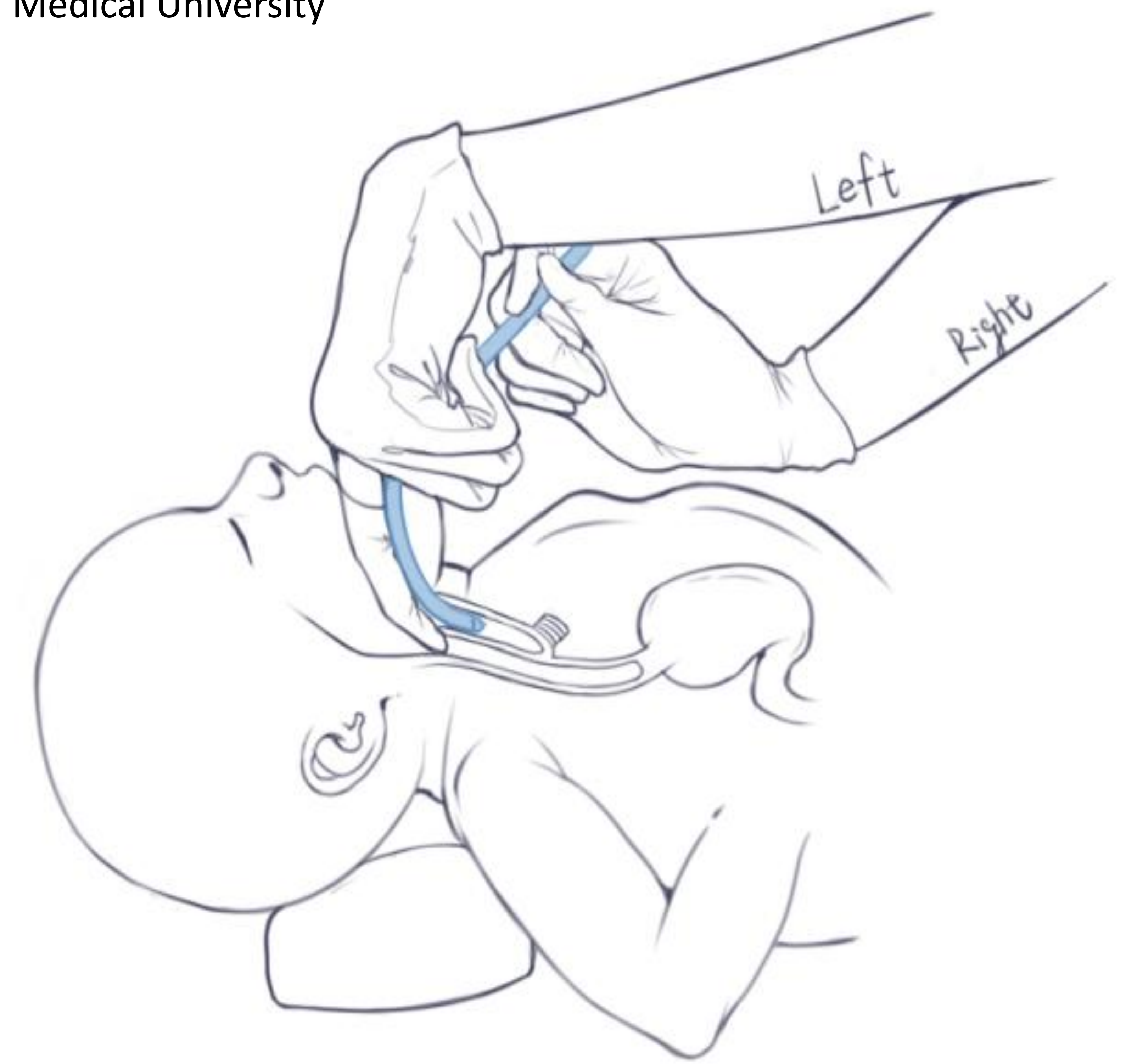
Application of finger guided blindly vision orotracheal intubation in resuscitation of neonatal asphyxia

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□ **Part A.** The medical documents of FGBI in resuscitation of 1063 asphyxiated newborns during January 1st, 2000 to June 30th, 2019 in Beijing Obstetrics and Gynecology Hospital affiliated to Capital Medical University were analyzed retrospectively. The success rate of intubation, incidence of secondary intubation and the adverse symptom related intubation were noted.

□ **Part B.** Laryngoscopy guided direct vision orotracheal intubation(LGVI) and finger guided blindly vision orotracheal intubation(FGBI) on manikins completed respectively by same 10 operators during September 1st, 2024 to December 31th, 2024. The insertion time of intubation of each group were recorded and compared between the two group.



Schematic illustration of blind endotracheal intubation in a neonate
by Jingyi Zhu

Results – FGBI as one of the backup intubation techniques for neonatal asphyxia resuscitation especially in emergency situation or in medical material shortage places can be considered

□ **Result A.** All 1063 cases of asphyxia neonates were successfully intubated by FBVI, the success rate of FBVI intubation was 100% in retrospective analysis. 5 cases of reintubation were recorded in all asphyxia resuscitation, the reintubation incidence rate was 0.47%. No adverse symptom as pharynx and larynx edema and/or hemorrhage after resuscitation were recorded.

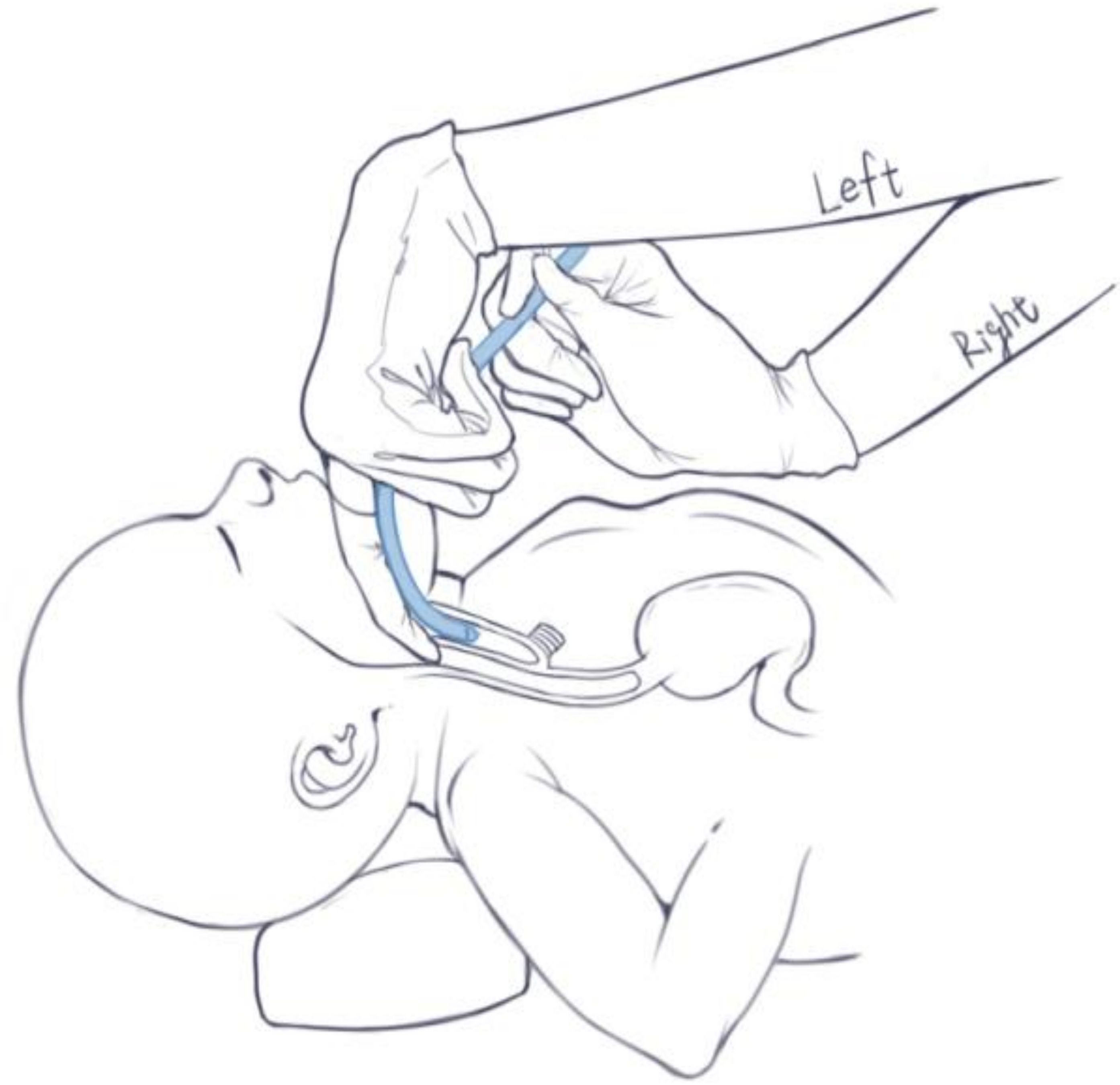
Table 1 The comparison of the finger guided blindly vision orotracheal intubation FGBI to laryngoscopy guided direct vision orotracheal intubation LGVI in 20 cases neonatal asphyxia resuscitation

Group	Cases	Success rate of intubation %	Intubation Frequency (time)	Duration (s)
Laryngoscopy guided direct vision orotracheal intubation laryngoscopy LGVI	10	100	1	18.71±1.07
Finger guided blindly vision orotracheal intubation FGBI	10	100	1	5.22±0.71*

* p=0. 000

□ **Result B.** The average insertion time were prospective observed, it was 5.22 + 0.71s by FGBI, significantly lower than that by LGVI 18.71 + 1.97s, with statistically significant difference (F = 4.642, t = 20.341, P = 0.000) (Table 1). All 20 intubations were completed at once time, no reintubation occurred.

Finger guided blindly vision orotracheal intubation FGBI in resuscitation of neonatal asphyxia.



Schematic illustration of blind endotracheal intubation in a neonate
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Attention:

1. Keep gently during operation.
2. If the first intubation is unsuccessful and/or the operation time is more than 10 seconds, withdraw the catheter and guide to oxygenate, adjust the tracheal catheter and try again. If the second intubation failed, use other methods to intubate.

Preparation: The newborn lie in supine position, olfactory position, avoiding excessive back of neck. The operator stands at the foot side of the child, wearing sterile gloves and hold sterile disposable tracheal tube in the right hand.

Step 1: The operator inserts the left index finger through oral cavity down to the epiglottis, the lingual cartilage can be felt by the finger, and the fingertip reaches the position around the level of the thyroid hyoid.

Step 2: Hold the trachea catheter in the right hand and lead it to the epiglottis through the oral cavity and oropharynx via the guidance of left finger. The front end of the catheter is located at left finger tip which can feel the front end of the catheter. Push the tracheal tube gently at the glottis level, and the tube enters the trachea without resistance. Left finger senses and confirms the insertion and depth of the endotracheal tube, evacuates the airway. Orotracheal intubation were completes.

Follow up measures: Adjust the tracheal tube to appropriate depth according to the newborn's weight, assistant connect positive pressure resuscitation air bag for positive pressure ventilation, and confirm the position of the tracheal tube again through bilateral chest auscultation and chest wall movement.