Management of hydropneumothorax following the inadvertent intrapleural placement of a nasogastric feeding tube

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Introduction
Parents and caregivers of children with long-term nasogastric feeding tubes (NGT) are taught how to replace them at home, should they become blocked or fall out. In the community the correct placement is not normally verified radiologically. In addition it may be difficult to aspirate gastric contents from the smaller calibre NGTs. Presented here is the anesthetic management of a child requiring a video assisted thoracoscopic (VATS) because intrapleural placement of his NGT resulted in a hydropneumothorax.

Case Study
The patient was a 10 month old, 11kg boy with developmental delay and swallowing difficulties. His long-term feeding NGT had fallen out and was replaced by his mother at home. He initially coughed on passing the NGT but settled quickly and was subsequently fed infant formula at a rate of 2ml/kg/hr. After approximately 5hrs he was noted to be tired and agitated with laboured breathing and so was brought to the Emergency Room (ER). In the ER, supplemental oxygen was required to maintain his saturations above 92% and he was mildly dehydrated and lethargic. A chest x-ray revealed a right-sided hydropneumothorax so he was transferred to the Operating Rooms (OR) for an emergency VATS procedure.

In the OR his chest was prepped in case urgent chest drain insertion was required. Mask induction was commenced with a slow progressive increase of sevoflurane in oxygen and spontaneous ventilation was maintained throughout this period. Direct laryngoscopy with a size 2 Mackintosh blade revealed a grade 1 larynx and the NGT was seen passing through the vocal cords. The trachea was intubated with a cuffed 4.0 endotracheal tube (ETT). A fiberoptic scope was inserted through the ETT into the left main bronchus and then the ETT advanced over it. Once lung isolation was confirmed, the patient was paralysed with cisatracurium and commenced on one lung ventilation. A right VATS revealed approximately 110mls of intrapleural white fluid (infant feed). Once this was drained the NGT was seen in the pleural cavity. The NGT was removed, the cavity washed out with saline and his ETT was then withdrawn to the trachea. A chest drain was inserted and successful two lung ventilation established. The patient was hemodynamically stable throughout procedure and the lowest SpO2 was 94%. The child was extubated after 11 days due to slow resolution of his residual pneumothorax.

References