Results for the Study: Tracheal ultrasound to assess endotracheal tube depth

Introduction
This study took place at the Royal University Hospital between June and August 2012. If you participated in this study, we would again like to thank you, and share what we found.

Background
Putting a breathing tube in the windpipe is a common and life saving procedure. It is very important that the breathing tube is in the right place. The breathing tube is in the right place when its tip is roughly in the middle of the windpipe. There are currently several clinical methods to determine whether the breathing tube is in the right place, but none of them are very reliable. Correct positioning can be determined by X-Ray, but this exposes the patient to radiation, and is time consuming and expensive. Our study tried to determine if we could tell when the tip of the breathing tube was in the right place by visualizing it with an ultrasound as it entered the windpipe.

Results
We were able to study 50 adults, including 26 women and 24 men, with an average age of about 57 years. We were able to see the tip of the breathing tube enter the windpipe in 82% of the people studied. When we were able to see the tip of the breathing tube enter the windpipe, this led to correct placement of the tube in about 95% of those patients. When we compared our results to the measurement technique many doctors use to decide to stop advancing a breathing tube, our method was able to detect the proper placement of the breathing tube more often. However, it was not significantly better than feeling the front of a patients’ neck for the tip or the cuff of the breathing tube in the windpipe.

Conclusion
Our results show that ultrasound can work well to see when the breathing tube is in the right place, but that other methods may show more promise.

What We Plan to Do With Our Findings
We are planning a further study to see if manual palpation (feeling the windpipe with the fingertips) can help detect when the breathing tube is wrongly placed in the esophagus (the tube that carries food and liquid to your stomach).

If you have any questions, please feel to contact us.

Sincerely,
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