

Throughout my day I often give advice, teach, and even give short unofficial lectures to Respiratory Therapists, Nurses, and even Physicians a wealth of topics. In 2016 this was one of the most popular topics that came up.

Airway Management is a multi-role responsibility, and it is ongoing. Meaning Airway Management doesn't stop when the tube is in. The distance between the tip of the ET tube is every bit as important as the distance between the top of the ET tube balloon and the vocal chords.

Okay, let's focus on that briefly. The tube is in. Where is it? Remember, it's not just about the distance between the tip of the tube and the carina. There is also the distance between the vocal chords and the top of the balloon. Yes, I know. You can't see either one of those. Well, that's what this tip is all about. Finding the balloon, finding the vocal chords, and measuring the distance between them.

The balloon is right before your very eyes. The top of the balloon on most adult sized ET tubes is roughly 7cm above the tip of the tube. Most facilities have digital imaging. Find the ruler, and draw a 7cm line from the tip of the ET tube up superiorly. That line represents the ET tube balloon. If you have an ET tube with a sub-glottic suctioning port you will usually see a radio-paque mark right at the same 7cm level. The mark is showing you where the suctioning port is. It also happens to be right at the top of the ET tube balloon.

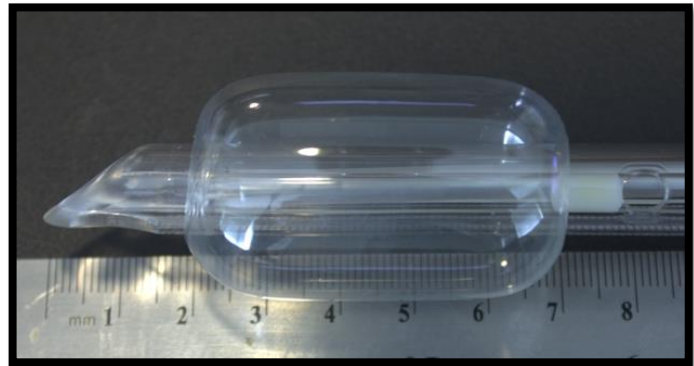


Figure 1: With most adult size ET tubes (6.0 - 8.0) the top of the balloon is 7cm above the tip of the tube. Notice the radiopaque mark right at the top of the balloon, and below the subglottic suctioning port.

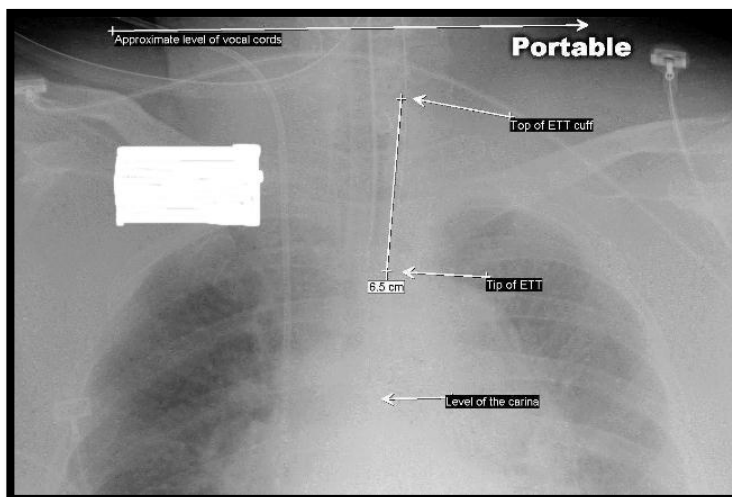


Figure 2: Measuring the distance between the top of the ETT balloon and the approximate level of the vocal chords.

The vocal chords are also invisible on the CXR. This is also easy. Draw a straight line from the top of the left shoulder to the top of the right shoulder. The vocal chords are sometimes higher than that level, but are never below that level. Use that as a guide and measure the distance between that line and the top of the line representing the ETT balloon. A minimum of 2cm is optimal. This allows the tube to slide up and down safely as the patients head moves up and down during routine care (rolling the patient back and forth to change sheets, or repositioning a pillow, etc...).

Our airway is an upside down “L”, and the tube is secured to the mouth. As the head moves down the tube will slide up. If the tube is too close to the chords the inflated balloon will slide right through them – displaced ET tube. Sometimes a patient can actually bend the tube upward in their mouth with their tongue. If the balloon is less than 2cm from the vocal chords – displaced ET tube.

Don't take a chance, take the time. The 2 minutes you will spend taking the drawing the lines and taking the measurements just may save you and your patient a lot of time and risk when it is least expected.