Nasogastric tube insertion: the simple yet impossible

Nasogastric tube (NGT) insertion is a common procedure with wide range of indications from elective insertion in a healthy patient undergoing anesthesia for a routine surgery to critically ill comatose patients. It is usually easier to perform in awake cooperative patients who can direct NGT into esophagus by swallowing. However, it is often challenging in anaesthetized and/or critically ill patients who cannot swallow and their airway has been secured by tracheal tube.

Two main groups of factors for difficult NGT insertion are: characteristics of NGT and anatomy of the throat. Being softer and less traumatic than previous types, the polyurethane NGTs are broadly used in our daily practice. This advantage comes with its own disadvantages. Becoming softer on exposure to body temperature, NGTs are more prone to kink; this in turn leads to unsuccessful NGT insertion. Other NGT related factors contributing to unsuccessful NGT insertion are: 1. Several nonopposing lateral distal eyes (holes in the wall of NGT) causing NGT kink, 2. Curved NGT, when in the packet, encouraging NGT coiling while entering the mouth and 3. Tracheal tube's inflated balloon in intubated patients obstructing NGT passage.

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Anatomic structure of the throat also halts easy passage of NGT into the esophagus and immensely contributes to unsuccessful NGT insertion. Piriform sinus -two pouches in right and left parts of throat- and arytenoid cartilages -as excrescence of trachea to the entrance of esophagus- are the most common places wherein NGT is usually lodged and make it difficult to direct NGT into esophagus.

Numerous techniques have been developed and introduced to facilitate NGT insertion. These techniques include reverse NGT insertion assisted by guide wire, neck flexion with lateral neck pressure, and even using prone position ie turning the patient to sleep on abdomen.

To address these concerns, SORT maneuver was suggested. SORT is mnemonic for the four main steps of the maneuver: sniffing position, NGT orientation, contralateral rotation, and twisting movement.

Detail of technique is as follows: After patient is placed in sniffing position, NGT is oriented from nose to esophagus entrance based on anatomy. It should be taken into consideration that no force should be applied against any resistance while insertion. We change the position of NGT tip by back and forth and rotational movements until it find its way through esophagus without resistance. Rotation of head to contralateral side (of NGT entrance) is very important step; this blunts the ipsilateral piriform sinus while sniffing position thrusts arytenoid cartilage away from esophageal entrance. Then NGT tip can be directed deep into esophagus by twisting movements to reduce

resistance. External pressure on piriform sinus area might be applied if the initial maneuver fails. The rule is “first doing no harm” in employing SORT maneuver. This maneuver could also be of assistance in trans esophageal echocardiography (TEE) probe insertion. We tried SORT maneuver successfully in an 80-year old man who had coronary artery bypass surgery and TEE was needed for the evaluation of and making decision on his moderate mitral regurgitation (video). Piriform sinus is the most common place for TEE probe to stuck. Slight flexion of the tip toward front in addition to little rotation of the probe toward midline would be helpful. It would be recommendable to practitioners to try this maneuver for themselves and contact us to send their feedback.

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