Airway regional anesthesia: What is the usage for ultrasound guided (USG) approach?

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In recent years, there have been many advances using ultrasound to visualize the airway and related structures. Airway regional techniques are essentially used for providing airway anesthesia for Awake Direct Laryngoscopy or Fibro-Optic Intubation. The three major neural supplies to the airway are: Trigeminal, Glossopharyngeal and Vagus. Blocking these individual nerves usually provide more profound anesthesia than simple local anesthetic (LA) topicalization and will reduce the total dose. Objective of this presentation is to discuss some of the techniques of blocking the nerves of the airway and whether using ultrasound as a nerve localization method can be helpful. Glossopharyngeal nerve innervates the oropharynx, soft palate, posterior portion of the tongue and the pharyngeal surface of the epiglottis. Block on this nerve will provide an anesthetize passage for endotracheal tube (ETT) as well as abolishes the gag reflex. This nerve can be anesthetized using either intraoral or extraoral approaches. USG for the extraoral has been described for patients with chronic pain. However it can be easily blocked as it crosses the palatoglossal arch. Superior Laryngeal Nerve provides sensation to the base of the tongue, posterior surface of the epiglottis, aryepiglottic fold and the arytenoids. Block of this nerve has been used as a sole technique for intubation and can be done at the level of the thyrohyoid membrane inferior to the cornu of the hyoid bone. USG is useful especially when finding landmarks become difficult. Recurrent Laryngeal Nerve, which provides sensory innervation to the vocal folds and the trachea, can be easily blocked by the transtracheal block. Ultrasound has been useful in finding landmarks to perform this block. Block of this nerve can prevent coughing and bucking in reaction to presence of the ETT. Nasal passage is anesthetized by blocking the palatine and anterior ethmoidal nerves.

Biography
Sassan Sabouri is an Instructor at Harvard Medical School, USA. He is a graduate from Medical School in Shahid Beheshti Medical University (SBMU) in Tehran, Iran. He has completed his Anesthesiology Residency in SBMU and gained his major experience by practicing anesthesia in different cities across Iran for 10 years. In 2006, he started his Residency in General Surgery in Temple University in Johnstown PA and then Anesthesiology Residency in New York State University at Buffalo NY, where he became one of the Chief Residents. After graduation from Residency, he became one of the Staff at the Department of Anesthesia, Critical Care and Pain Medicine at Massachusetts General Hospital, USA. His clinical innovations are primarily focused on regional anesthesia. Collaboratively, he started General Surgery Regional Service in MGH in 2012.

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