Infrahyoid Ultrasound

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The infrahyoid neck extends from the hyoid bone to thoracic inlet & is divided into five major anatomical spaces. These include visceral space, carotid space, posterior cervical space, perivertebral space & retropharyngeal space.

Abnormalities in the infrahyoid neck are site specific as the contents of the neck spaces are known. The visceral space contains thyroid, larynx, hypopharynx & cervical esophagus. The main contents of the carotid space include carotid artery, internal jugular vein & vagus nerve. The posterior cervical space mainly contains fat, a chain of nodes & nerves. The retropharyngeal space predominantly contains fat & the perivertebral space contents are mostly muscles.

The aim of imaging infrahyoid neck masses is to provide an accurate diagnosis & the pre-operative anatomical extent, as management of many of the lesions is often surgical. The anatomical origin/location of infrahyoid neck masses provides the first clue to their nature & a short differential diagnosis. Imaging features further refine the differential diagnosis, often providing an accurate diagnosis, obviating the need for confirmatory biopsy in most instances.

Abnormalities in these spaces are often evaluated by CT or MR. However, ultrasound is an ideal initial imaging modality as their superficial location makes them amenable to interrogation by high resolution ultrasound. After identifying the anatomical origin of these masses, ultrasound accurately predicts their nature based on their sonographic characteristics. In addition, ultrasound safely guides needle placement for both diagnostic & therapeutic techniques.

This short presentation will focus on sonographic features of commonly encountered miscellaneous neck masses, both solid & cystic. These commonly include, thyroglossal duct cyst, branchial cleft anomalies, vascular lesions, lymphangioma, abscess, paraganglioma & schwannoma. The advantages & limitations of ultrasound in evaluating these abnormalities will also be addressed.