



## 總論

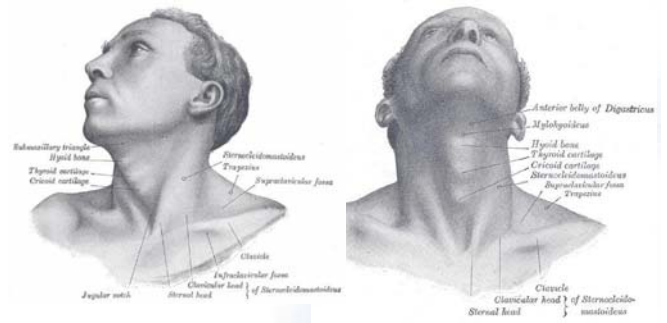
- ❖ 頭頸部構成廣泛的解剖區域，其涵蓋許多呼吸消化，唾液腺，淋巴，內分泌，神經和血管結構。許多影響這些器官系統的病理解況可通過超音波進行成像。結合細針抽吸細胞學，培養，賀爾蒙測定，粗針穿刺切片和分子標記，高頻超音波是不可缺少的臨床工具。



## 機器設備

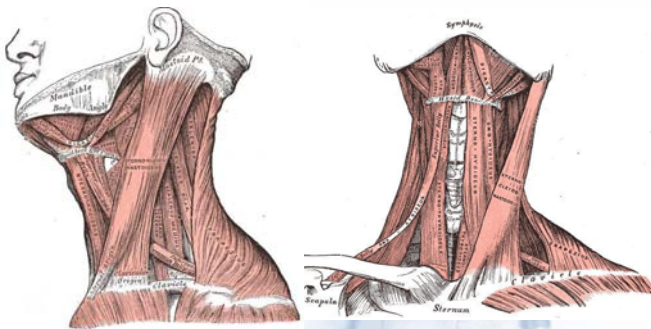
- ❖ 頭頸部檢查應使用線性探頭進行。應調整設備以在最高臨床適當的頻率下操作，注意在解析度和音波穿透之間存在折衷。對於大多數患者，優選8至12MHz的平均頻率
- ❖ 儘管一些患者可能需要較低頻率的探頭用於更深的穿透。
- ❖ 解析度應具有足夠的品質以評估可見病變的內部形態。
- ❖ 都普勒頻率應適應調整為最優化血流量檢測。
- ❖ 最優化診斷信息，同時保持低的總超音波暴露。

## 頭頸部解剖構造



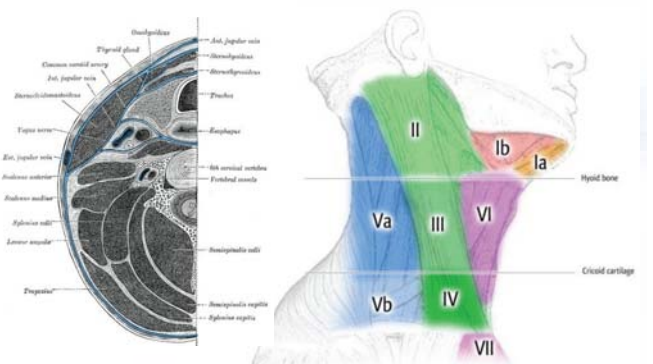
Lewis (1918) Gray's Anatomy 20th ed

## 頭頸部解剖構造



Lewis (1918) Gray's Anatomy 20th ed

## Levels of the neck



Lewis (1918) Gray's Anatomy 20th ed

## The indications for head and neck ultrasound examinations

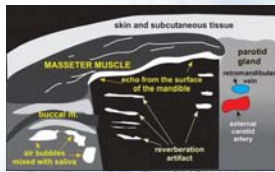
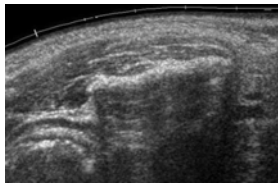
- ❖ A. Salivary glands
- ❖ B. Lymph nodes
- ❖ C. Congenital lesions
- ❖ D. Miscellaneous mass lesions
- ❖ E. Infection and trauma
- ❖ F. Endocrine

## Salivary gland

### Indications

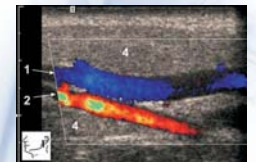
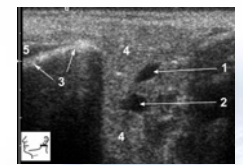
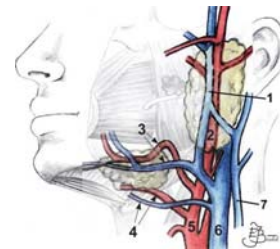
- ❖ Diffuse enlargement and tenderness consistent with inflammatory sialadenitis
- ❖ Suspected abscess formation
- ❖ Recurrent swelling suggesting Sjogren's disorder
- ❖ Swelling with alimentionation, suggestive of obstructing calculus
- ❖ Discrete solitary mass suggestive of a benign or malignant neoplasm
- ❖ Multiple masses, possibly consistent with cysts suggesting human immunodeficiency virus
- ❖ Anterior floor-of-the-mouth lesion, which may be solid or cystic, the latter suggestive of a simple or plunging ranula

## Transverse US image

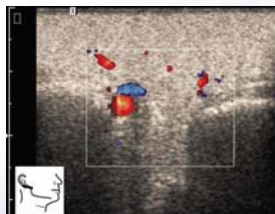
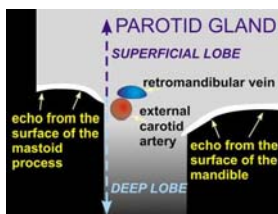


RadioGraphics 2006 26:3, 745-763

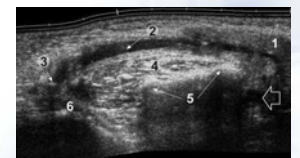
## Parotid gland



## Parotid gland



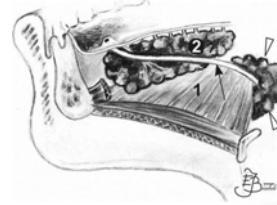
## Stenon duct



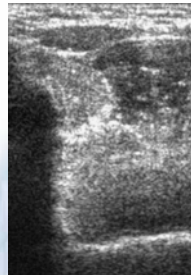
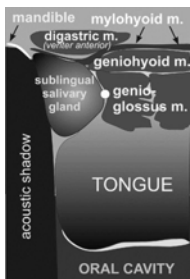
## Submandibular gland



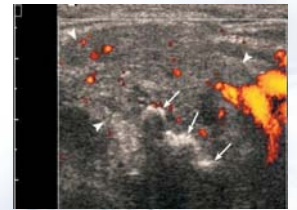
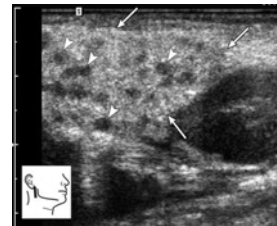
## Wharton duct



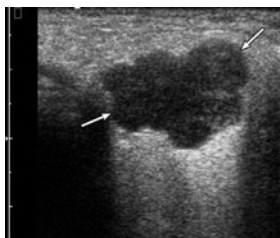
## Sublingual gland



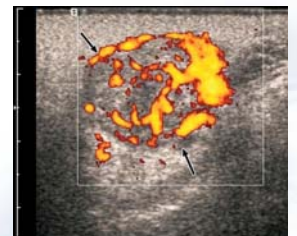
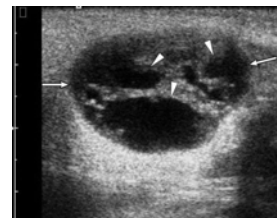
## Sjögren syndrome



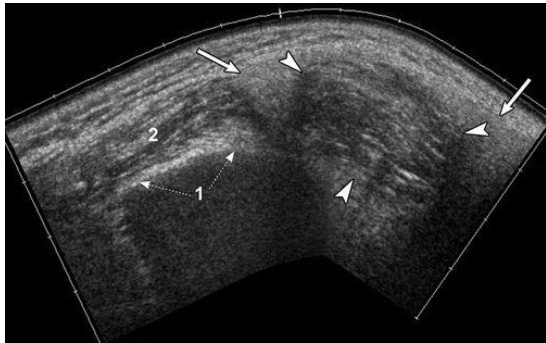
## pleomorphic adenoma



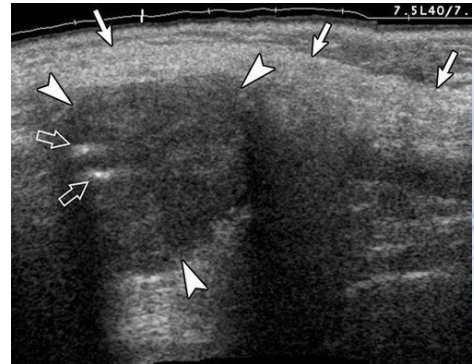
## Warthin tumor



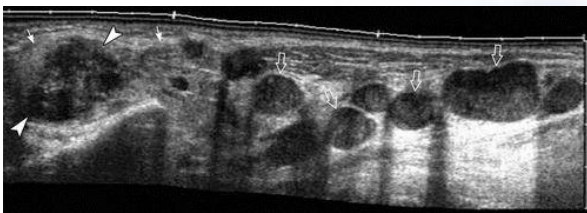
lipoma



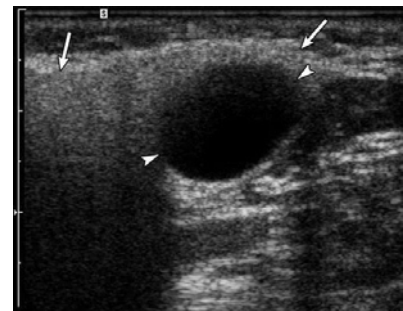
acinic cell carcinoma



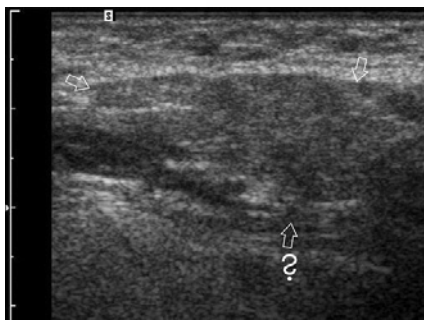
primary adenocarcinoma



simple cyst



irradiation of the neck



## Lymph Nodes

### Indications:

- ❖ Determination of likely inflammation from metastatic malignant lymph nodes
- ❖ Determination of a lymph node from another mass lesion such as a cyst, schwannoma, paraganglioma, lipoma, or parathyroid adenoma;
- ❖ Determination of possible lymphomatous node
- ❖ Determination of the presence of metastatic lymphadenopathy at specific levels to determine the required type of neck dissection
- ❖ Determination of the specific level of metastatic squamous cell carcinoma within lymph node(s) to assist in defining the primary source
- ❖ Fine-needle aspiration (FNA) for cytology
- ❖ Core sampling for lymphoma

## Congenital Lesions

### Indications:

- ❖ Localization of lymphangioma
- ❖ Localization of hemangioma
- ❖ Localization of a parotid cyst
- ❖ Localization of a branchial cleft cyst
- ❖ Localization of a thyroglossal duct cyst
- ❖ Localization of parathyroid and thymic cysts
- ❖ Indirect determination of an undescended thyroid gland

## Neurovascular and Mass Lesions

### Indications:

- ❖ Identification of paraganglioma of the carotid bifurcation (carotid body tumor)
- ❖ Identification of paraganglioma, schwannoma, lymphoma, or pleomorphic adenoma of the parapharyngeal space
- ❖ Identification of internal jugular vein thrombosis
- ❖ Identification of carotid artery atherosclerosis as an incidental finding during a routine head and neck ultrasound examination
- ❖ Identification of schwannoma of the mid-lower neck
- ❖ Identification of lipoma
- ❖ Identification of Zenker's diverticulum

## Infection and Trauma

### Indications:

- ❖ Identification of multiple enlarged lymph nodes with benign characteristics
- ❖ Differentiating cellulitis from abscess formation
- ❖ Differentiating an abscess from confluent lymphadenopathy
- ❖ Detection of subcutaneous emphysema in blunt neck trauma
- ❖ Identification of fractures of the laryngeal framework
- ❖ Identification of tracheal transection
- ❖ Detection of the size and location of hematoma

## Endocrine

### Indications:

- ❖ Evaluation of the location and characteristics of palpable neck masses
- ❖ Evaluation of abnormalities detected by other imaging examinations or laboratory studies, eg, areas of abnormal uptake seen on radioisotope thyroid examinations
- ❖ Evaluation of the presence, size, and location of the thyroid gland
- ❖ Evaluation of high-risk patients for occult thyroid malignancy
- ❖ Follow-up of thyroid nodules, when indicated
- ❖ Evaluation for recurrent disease or regional nodal metastases in patients with proven or suspected thyroid carcinoma
- ❖ Localization of parathyroid abnormalities in patients with suspected primary or secondary hyperparathyroidism
- ❖ Assessment of the number and size of enlarged parathyroid glands in patients who have undergone previous parathyroid surgery or ablative therapy with recurrent symptoms of hyperparathyroidism
- ❖ Localization of thyroid/parathyroid abnormalities or adjacent cervical lymph nodes for biopsy, ablation, or other interventional procedures
- ❖ Identification of unsuspected thyroid pathology after parathyroid

## 其他重要議題

- ❖ Quality control
- ❖ Patient education
- ❖ Infection control
- ❖ Safety

## 衛教

- ❖ 我們將請您平躺在治療台上，肩下墊一枕頭，使頭部後仰及頸部伸張。先用超音波檢查頭頸部，若有異常，會先找出病灶位置，再用針經皮採取一些細胞或液體，視情況進行化驗。
- ❖ 下針時會有疼痛的感覺，請配合醫師指示勿吞口水或亂動以免危險。抽完後我們將為您處理傷口，請配合指示壓迫止血約 15 分鐘。回家後若有患處腫脹或呼吸困難，請立即至急診處掛號就醫。

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## 參考資料

- ❖ AIUM Practice Parameter for the Performance of Ultrasound Examinations of the Head and Neck
  - ❖ Ewa B, Wieslaw J, Piotr Z. US of the Major Salivary Glands: Anatomy and Spatial Relationships, Pathologic Conditions, and Pitfalls RadioGraphics 2006 26:3, 745-763
  - ❖ Ahuja A, Ying M. Sonography of neck lymph nodes, part II: abnormal lymph nodes. Clin Radiol 2003;58:359-366.
  - ❖ Som P, Curtin H, Mancuso A. Imaging-based nodal classification for evaluation of neck metastatic adenopathy. AJR Am J Roentgenol 2000; 174:837-845.
  - ❖ Solbiati L, Osti V, Cova L, Tonolini M. Ultrasound of thyroid, parathyroid glands and neck lymph nodes. Eur Radiol 2001; 11:2411-2424.
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