

LUMPS AND BUMPS IN THE HEAD & NECK

Ultrasound is a useful tool as a first line investigation of lumps and bumps in the head and neck. Questions that ultrasound can answer include:

- **Is this a real mass?**

Lumps in the neck may be shown by ultrasound to be a "pseudomass", perhaps an area of focal adipose tissue or an asymmetric but otherwise normal salivary or thyroid gland.

- **Is the mass solid or cystic?**

In children the majority of cystic masses will be congenital such as **branchial cleft cysts** or **venolymphatic lesions**. The latter are often multiseptated and diffuse while the former may not come to attention unless infected. **Thyroglossal duct cysts** are common and will lie between the tongue base and thyroid isthmus, usually midline or paramedian, and move on swallowing. **Ranulas** are mucus retention cysts of the sublingual glands in the floor of the mouth and may rupture or 'dive' into the submandibular region causing a fullness or mass under the jaw.

- **Is the mass nodal or arising from a gland?**

Primary salivary gland tumours are nicely imaged with ultrasound and are more common in adults although benign mixed tumour (pleomorphic adenoma) of the parotid is also often seen in older children. The likelihood of malignancy cannot be determined on ultrasound appearances alone but some general principles can be applied. Tumours arising in the parotid gland are more likely to be benign than those in the submandibular gland which in turn, are more likely to be benign than a sublingual gland mass. **Skin cancers** such as SCC and melanoma may metastasise to the parotid gland as it contains small lymph nodes within the gland parenchyma.

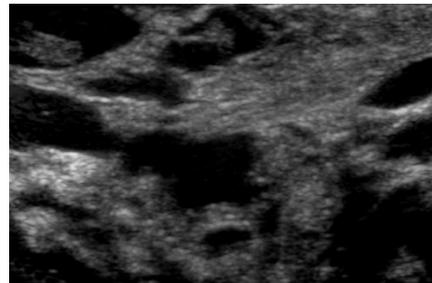


Fig 1.

Lymphangioma in an infant. There are multiple small cysts of varying size and shape.

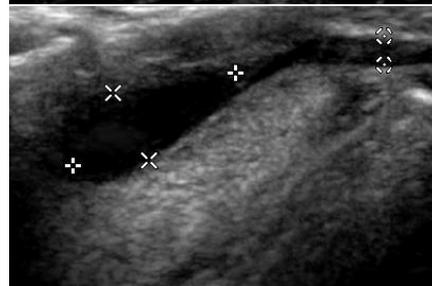


Fig 2.

Thyroglossal duct cyst in an older child. A patent thyroglossal duct extends downwards towards the thyroid.

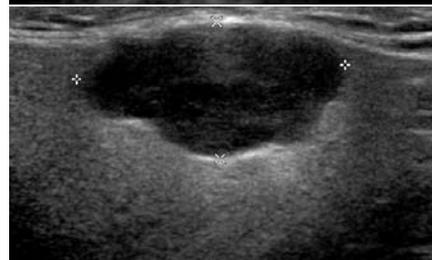


Fig 3a.

Pleomorphic adenoma of the parotid gland, with the appearance of a solid hypoechoic mass.

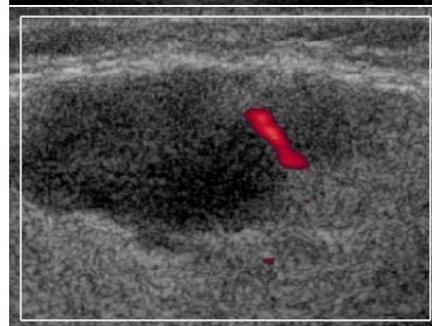


Fig 3b.

Colour Doppler shows a prominent artery supplying the tumour.



Fig 4.

A prominent but otherwise normal lymph node within the substance of the parotid gland. The lymph node hilum is visible.

- **Is lymph node enlargement likely to be benign or malignant?**

There are approximately 300 lymph nodes in the head and neck and enlarged nodes are the most common cause of a palpable neck mass in adults and children. Often this will be due to a **reactive adenitis** and the node will retain its normal shape and fatty hilus but may show some increased blood flow. Ultrasound is useful to exclude the presence of an abscess in the appropriate clinical setting. In adults there is always a concern that nodal enlargement signals an **underlying malignancy** of the aero-digestive tract or skin, or is caused by **lymphoma**. There is therefore usually a lower threshold for recommending biopsy. **Cystic nodes** may be seen in suppurative infections including TB or in cancers such as squamous cell, nasopharyngeal or papillary thyroid carcinoma. In an adult a newly discovered cystic mass should not be described as a congenital lesion until malignancy has been excluded.

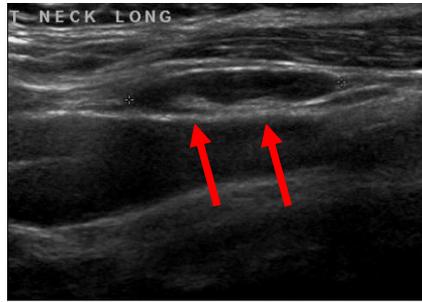


Fig 5.

A normal cervical lymph node. Note its elongated shape and its echogenic hilum.

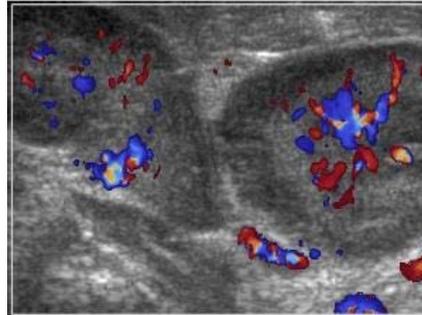


Fig 6.

Hyperaemic lymph nodes in reactive adenitis. The nodes are enlarged but retain their morphology. There is markedly increased blood flow in them.

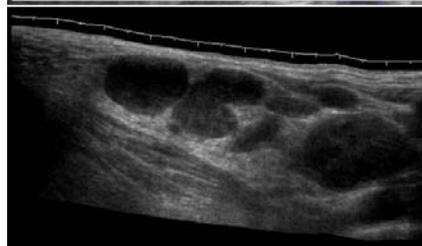


Fig 7.

Multiple enlarged nodes in lymphoma. The nodes are rounded in shape and discrete, with loss of the nodal hila.

Kate O'Connor

Neuroradiologist Andrew Smith returns to ARG.



Dr Andrew Smith has returned to Auckland Radiology Group after spending a year as a fellow in neuroradiology at the Vancouver General Hospital.

Andrew graduated from the University of Auckland (1997) and trained in radiology in the Auckland training scheme. He was an ARG/Auckland City Hospital fellow in neuroradiology in 2006 and was appointed as a consultant neuroradiologist before his departure for Vancouver. He is a radiologist of high calibre and we are delighted to have him as a part of our team.