LRI Children's Hospital

Neck Lumps in Children: Investigation & Management

Staff relevant to:	Paediatrics, Paediatric Oncology, ENT, Maxillofacial Surgery, ED, Paediatric Surgery
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Contents

1. Introduction and Who Guideline applies to

Children with neck lumps may present to a number of different services including;

- Paediatrics
- Paediatric Oncology
- ENT
- Maxillofacial Surgery
- Paediatric Emergency Department
- Paediatric Surgery

The purpose of this document is to provide guidelines for clinical staff evaluating this group of patients, with an aim of having a consistent approach to assessment and management irrespective of which service patient presents to.
The guideline also aims to signpost patients to the most appropriate lead team and encourage effective communication between the multi-disciplinary teams to streamline patient pathways.

2. Background

Neck lumps are common in the paediatric population.

The most common reason for neck lumps in infants and young children are congenital lesions. In older children the commonest cause is infection. In children, neoplastic causes of neck lumps are rare but do increase through adolescence, the most common malignant neck lump is lymphoma.

Careful assessment including the age, history (including associated constitutional or head and neck symptoms) and clinical examination will help formulate the differential diagnosis. This will help direct further investigations.

In many cases a clinical diagnosis can be reached, without the need for further investigation, with imaging, serology and/or biopsy, being reserved for selected cases.

3. Clinical Evaluation

History

Ask about the site of the lump, including its onset, growth, change in nature (including the timescale) and pain.
Ask about features in the history that may suggest a cause:

- Symptoms indicative of an upper respiratory tract infection
- Recent travel, insect bites or exposure to pets/other animals - may suggest an inflammatory or infectious cause.
- **Skin problems** e.g. eczema and acne are common causes of reactive lymphadenopathy
- **Airway compromise** – may indicate deep neck space infection e.g. parapharyngeal, retropharyngeal or dental infection/abscess. This is a medical emergency and needs urgent inpatient ENT review.
- **Malignancy** - Head and neck tumours in infants and young children are rare. Clinical symptoms will depend upon the site of the tumour. In older children and adolescence, haematological malignancies, (lymphoma), account for the majority of neoplastic neck

masses. They usually present with a slow growing painless focal neck mass which may feel rubbery on palpation (increasing in size over weeks or months).
There may be associated systemic symptoms such as: fatigue, night sweats, fever, weight loss, generalized itching or breathlessness. Lymphadenopathy may be identified at other sites (e.g. axilla, groin).

Clinical Examination

- Inspect and palpate the neck to identify any visible or palpable mass.
- Assess its site
- Assess its size and mobility i.e. whether it is fixed to underlying structures.
- Ask the patient to swallow whilst assessing whether the lump moves.
- Assess the characteristics of the lump, i.e. is it compressible (a branchial cleft cyst) or pulsatile (a vascular cause).

Examination of other areas:
- Assess the skin of the head, neck and scalp, the ears, and the teeth, tonsils and pharynx. Infection or inflammation in these areas, particularly the throat and skin may cause reactive lymphadenopathy.

Imaging

Reactive cervical lymphadenopathy is one of the commonest causes of neck lump/s. Imaging is not routinely recommended. Observation and clinical follow-up is the management pathway of choice.

Ultrasound can help characterise focal neck lumps/masses and has a high sensitivity and specificity, when ‘supported by ‘typical’ clinical findings. Cross-sectional imaging i.e. MRI and occasionally CT, is reserved for selected cases, where either ultrasound fails to confirm the diagnosis (rarely) or to further characterise and evaluate the extent of lesions or to aid clinical management or surgical planning. Further imaging should be organised within secondary care under the care of an experienced clinician.

Referral Guidelines for Paediatric Neck and Soft Tissue Mass Ultrasound

The following are clinical indications for ultrasound of the neck or soft tissues masses in children;

- Masses related to the anatomical site of the Salivary Glands
- Masses related to the anatomical site of the Thyroid
- Midline neck masses
- Palpable lymph nodes greater than 2 cm (supraclavicular nodes >1cm)
- New masses greater than 2 cm in size
- Masses with a related sinus tract.
- Masses requiring cosmetic surgical treatment
- Masses with deep fixation.
- Acute ‘bacterial’ lymphadenitis which fails to respond to medical therapy (at least 48 hours), especially if there is increasing pain

Distinction should be made between ongoing presence of lymph nodes <1 cm, which is often physiological and persistence of enlarged lymph nodes to avoid unnecessary investigation.

►► Otherwise well, healthy children with palpable cervical lymph nodes do not require investigation with neck ultrasound (Grade B).

►► Ultrasound should not be used as a screening tool to 'exclude malignancy' (Grade B). (Paddock *et al* ADC)

The following are NOT clinical indications for ultrasound of the neck or soft tissue in children;

- Small dermal and subcutaneous soft tissue masses with no requirement for cosmetic surgery
- Small dermal and subcutaneous masses with no interval growth
- Normal sized Lymph nodes that are easily palpable due to their anatomical position (overlying bone, muscle or thin habitus)
- Palpable lymph nodes without interval growth
- Palpable lymph nodes that have reduced in size

The following are clinical indications for direct urgent referral rather than ultrasound for a soft tissue mass in any location;

- Rapidly growing mass, with acute signs of inflammation and/or failure to respond to antibiotics – acute secondary care admission.
- Rapidly growing mass without acute inflammation – 2WW referral
- Mass with systemic symptoms or abnormal full blood count – 2WW referral
- Large mass greater than 5 cm in size – 2WW referral
- Deep seated or deep fixed mass – 2WW referral

This guideline identifies two cohorts of patients.
Those presenting with:

- cervical lymphadenopathy
- other neck lumps

The pathway of investigations is detailed below in Figure 1.

4. Patients with Cervical Lymphadenopathy

Differential includes:

Infection
Granulomatous disease
Neoplastic
Endocrine
Other

If the lymph nodes are clearly reactive / benign, no further investigations are required.
For lymph nodes <1cm and no concerning features, no follow up is needed.

If the diagnosis is not clear, investigate further with chest x-ray and bloods – full blood count, LDH and serology for toxoplasma, cytomegalovirus and Epstein-Barr virus. Consider a trial of antibiotics: co-amoxiclav (or clarithromycin in penicillin allergy) for 7 days, and review after a few weeks with results.

For those patients who have investigations in the Emergency Department (e.g. FBC/CXR) which are normal, no further follow up will be required.
If there are any concerns about abnormal investigations, please discuss with the CAT Senior Decision Maker.

FNA is not an appropriate test for diagnosing lymphoma. Lymph nodes suspicious of malignancy require urgent referral to the Paediatric Haematology Oncology team for MDT discussion and urgent biopsy.

Features which may warrant a lymph node biopsy include:

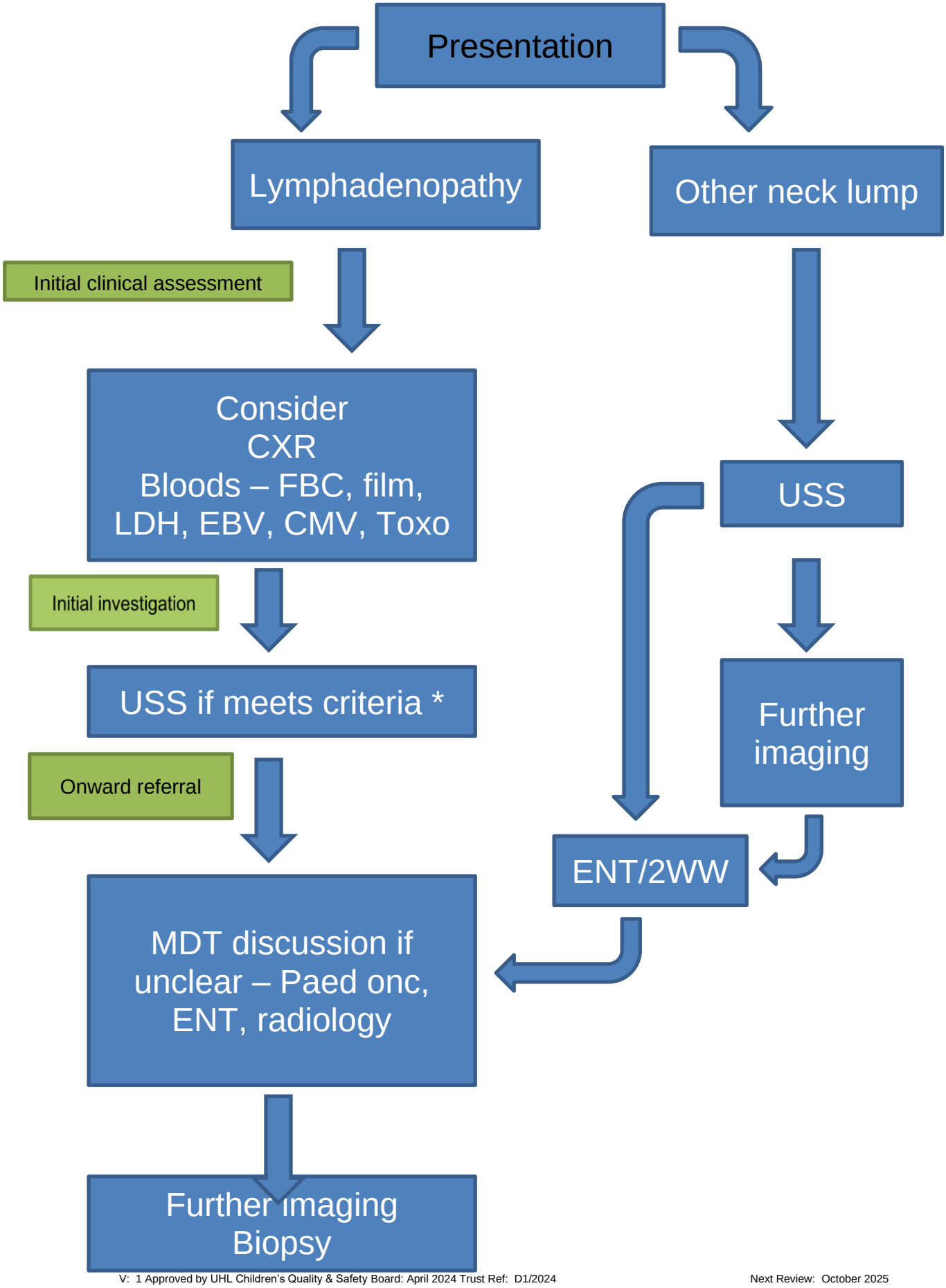
- Lymph node size >2cm
- Lymph node increasing in size over 2 weeks
- No decrease in size after 4-6 weeks
- Node not returned to baseline after 8-12 weeks
- Abnormal consistency – firm/hard, non-mobile
- Abnormal CXR
- Presence of supraclavicular node
- Presence of systemic features
    - Night sweats
    - Hepatosplenomegaly
    - Weight Loss
    - Fever
    - Pruritus
- Bone pain or limp

Tuberculosis should be in the differential diagnosis of cervical lymphadenopathy. At the time of biopsy please ensure that a sample is sent in a plain container for AFB and TB culture.

5. Patients with other Neck Lumps

Due to the wide range of different pathologies management will be determined on an individual basis. Patients who are identified to have “other neck lumps” should be referred to the ENT team for assessment and management. This group of patients will be tracked by the ENT Admin team to streamline their patient pathway.

Figure 1: Referral Pathway



***CRITERIA FOR USS**

Palpable lymph nodes greater than 2 cm (supraclavicular nodes >1cm)

New masses increasing in size, greater than 2 cm in size

Masses with deep fixation.

Masses related to the Salivary Glands or Thyroid

Midline neck masses

Masses with a related sinus tract.

Masses requiring cosmetic surgical treatment

Acute 'bacterial' lymphadenitis which fails to respond to medical therapy (at least 48 hours duration), especially if there is increasing pain

6. Education and Training

Further education of the Paediatrics, Paediatric Oncology, Paediatric ED and ENT will be required to update the team of the pathway and teaching sessions will be provided at the launch of the pathway.

7. Monitoring Compliance

None

8. Supporting References

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9. Key Words

Children's Neck Lump
Cervical Lympadenopathy

The Trust recognises the diversity of the local community it serves. Our aim therefore is to provide a safe environment free from discrimination and treat all individuals fairly with dignity and appropriately according to their needs.
As part of its development, this policy and its impact on equality have been reviewed and no detriment was identified.

CONTACT AND REVIEW DETAILS	
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Details of Changes made during review: New guideline	