York and Scarborough Teaching Hospitals
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Paediatric Lymphadenopathy (and when to suspect malignancy) Guideline

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Summary	Paediatric Lymphadenopathy and when to suspect malignancy	
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Version Control

Change Record

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27/01/23	Dr R Proudfoot	1.2	all	Transferred to Trust Guideline format

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1. Introduction

Paediatric haematologists and oncologists in the UK consider small (<1 cm) palpable lymph nodes to be physiological, even if they are persistent.[1] In particular, cervical lymph nodes that are small and fluctuate in size are almost certainly benign and are likely to be reactive in nature. [2] Lymph nodes that continue to measure greater than 2 cm for longer than 6 weeks warrant referral to secondary care.[1]

2. Scope

This document is for all clinicians who may potentially see children for concerns about their lymph nodes, as well as all clinicians who see children for any medical care where lymph node abnormalities may become apparent (primary care, A&E, surgical and paediatric clinics and paediatric wards). This is a brief overview of how to assess and investigate abnormal lymph nodes and how to refer those suspected of malignancy.

3. Duties and responsibilities

All staff seeing children have a duty to discuss with a senior paediatrician if they suspect childhood malignancy.

4. Main Content

4.1 Clinical assessment of children with lymphadenopathy

Assessment History – ask about:

- Characteristics of lymph node – onset, size, duration, pain, distribution
- Recent infections – sore throat, earache, rash
- Constitutional symptoms – fever, night sweats, weight loss
- Ill contacts
- Recent travel and exposure to TB
- Food – unpasteurised milk, undercooked meats
- Immunisation – BCG
- Pets – most importantly cats
- Sexual history in adolescents

Examination:

- Lymph node – size, site, colour, tender/non-tender, mobile, distribution, fluctuant, consistency
- Examine all lymph nodes regions
- Head and neck – oropharynx, conjunctiva, ears, scalp
- Abdomen – hepatosplenomegaly
- Skin – rashes, pallor
- Plot height and weight

4.2 Investigations

Acute lymphadenopathy < 2 weeks		Persistent lymphadenopathy (>6 weeks, >1cm)
Well	No investigations routinely required if nodes < 2cm and no suspicious features[ϕ]	**Small (1cm or less) mobile nodes can persist indefinitely** and be simply normal palpable lymph nodes. Consider: • FBC & blood film • CRP, ESR, LDH, LFTs • Serology: EBV, CMV, HIV • Toxoplasmosis, Bartonella henselae • If TB suspected: discuss with micro/paediatric ID • If malignancy suspected: CXR • Ultrasound if >2cm,progressively enlarging or fixed, painless mass of rubbery consistency[β] • Biopsy* • Check for local skin inflammation: persistent lymphadenopathy can be due to scalp eczema and/or acne
	If nodes are >2cm and any suspicious features[ϕ], consider: • Ultrasound[β] • CXR • FBC & film • CRP, ESR, LDH, LFTs, CRP • Biopsy*	
Unwell	• Consider Kawasaki and/or PIMS-TS • Consider neck US if suspected abscess • Consider referral to MaxFax if dental cause suspected • Investigations as above if any suspicious features[ϕ]	

[ϕ]Suspicious features: see section below, when to suspect malignancy

*All biopsies for suspected malignancy should be discussed with paediatric oncology (see below)

[β]See Ultrasound section below

4.3 Management

Observation and reassurance without investigation is usually appropriate for the well appearing child with cervical lymphadenopathy and lymph nodes <2cm.
Follow local antibiotic guidelines if infective lymphadenitis is suspected.
Book for review at the end of the antibiotic course to ensure an adequate response.

4.4 When to suspect malignancy and when to refer [3]

In children where a single lymph node is greater than 2cm in diameter, any of the following additional features may prompt referral to a paediatrician:

- Absence of a clear infectious cause
- Persistence of significantly enlarged nodes (>2cms diameter) for 6 weeks or more with no decrease in size
- Widespread distribution
- Abnormal consistency (firm or hard) or non-mobile
- Absence of pain

Features which should prompt referral regardless of lymph node size would include:

- Supraclavicular site
- Associated splenomegaly, night sweats or weight loss
- Bone pain/limp
- Presence of mediastinal widening on chest radiograph

Findings that may be associated with a cancer diagnosis in childhood:

	CONSIDER WATCHFUL WAIT	CONSIDER REFERRAL	REQUIRES REFERRAL	
Lymphadenopathy	• Clear infectious cause • <2cm • Responsive to antibiotics	• Widespread distribution (offer very urgent FBC) • Abnormal consistency (firm or hard) • Non-mobile • Absence of pain	• Persistent enlarged nodes >2cms for >6 weeks with no decrease in size • Supraclavicular site	Urgent referral
			• Associated splenomegaly, night sweats, weight loss or pruritus	Very urgent referral (48hrs)
			• Symptoms/signs of mediastinal mass • Associated bone pain	Immediate referral

Summary taken from the CCLG Referral guidance for suspected cancer in children and young people [4]

4.5 Referral Pathways for Paediatric Oncology Are Different [4]

In patients where there is a very high suspicion of malignancy in primary care, same day telephone discussion directly with an acute paediatrician is advised.

There is good evidence to show that the ‘two-week wait’ system is not useful for children, with at most 1-3% of referred patients ultimately being diagnosed with cancer.

Conversely, more than 95% of children with cancer do not reach the oncology service through the two-week wait system. Accordingly, the recommendation is that referral for suspicion of cancer in childhood should not rely on this route.

In cases of uncertainty, a telephone discussion with an acute paediatrician (or paediatric haematologist or oncologist) is strongly encouraged.

Where a diagnosis of cancer is strongly suspected,

referral should be immediate and by telephone.

4.6 Ultrasound

Do otherwise well, healthy children with palpable cervical lymph nodes require investigation with neck ultrasound? [5]

- Otherwise well, healthy children with small (<2cm) 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).
- Children with palpable cervical lymph nodes greater than 2 cm persisting for more than 6 weeks, or supraclavicular nodes, warrant referral for specialist assessment. An ultrasound at this stage may help direct further investigation and management (Grade B).

Otherwise well, healthy children with palpable cervical lymphadenopathy do not require investigation with neck ultrasound.

Small (1cm or less) mobile nodes can persist indefinitely

and be simply normal palpable lymph nodes.

Ultrasound cannot reliably differentiate between reactive and malignant lymph nodes and must not be used as a screening tool to ‘exclude malignancy’—it may be falsely reassuring, mislead parents/caregivers and may miss cases of malignancy.

Ultrasound can be useful to determine the nature of a lump, for example, to differentiate a lymph node from a developmental cyst, to confirm the presence of an abscess and suitability for drainage, to confirm the presence of a solid mass, and to help direct further investigation and management. In these circumstances the request for US Is best made in secondary care after clinical assessment by Paediatrics, ENT or Max Fax.

4.7 Children seen directly by ENT & LN biopsy in a DGH

If the ENT team have concerns about a LN or nodes, such that biopsy is considered, the child should be discussed with the acute paediatric team for same day assessment.

If LN biopsy is planned outside of a tertiary paediatric oncology centre, please **discuss with paediatric oncology first**, either via the acute paediatric service or directly to Leeds paediatric oncology**.**

Any paediatric (<18 Years) sample needs to be discussed with a paediatric pathologist *for suitability of tissue being obtained prior to operation and commented upon within an acceptable period by a fully constituted paediatric oncology MDT with samples suitable for immuno and genetic testing as a routine.*

FNA is not suitable for paediatric cases as the risk of misdiagnosis from inadequate sampling is too high.

4.8 Safety Netting

Clear advice must be given regarding who to contact if lymph node/s are enlarging:

If seen in clinic, by ENT or on ward 17/18, parents should be advised to contact paediatrics, not the GP.

5. Training Requirements

No specific training required

6. Monitoring Compliance

Element to be monitored	Lead	Tool	Frequency	Reporting arrangements
Pathways to Diagnosis for paediatric cancer	Dr R Proudfoot	Review of all new paediatric malignancy diagnoses	Monthly, during paediatric oncology MDT	

7. Document Review

Reviewed every three years.

8. Associated Trust Documents

Standard Operating Procedure for Paediatric Lymphadenopathy (still in progress)
Parent Information Leaflet Paediatric Lymphadenopathy

9. References

1 Murray MJ, Ruffle A, Lowis S, *et al.* Delphi method to identify expert opinion to support children's cancer referral guidelines. *Arch Dis Child* 2020;**105**:241–6. doi:10.1136/ARCHDISCHILD-2019-317235

2 Locke R, Kubba H, Comfort R. When does an enlarged cervical lymph node in a child need excision? A systematic review. *Artic Int J Pediatr Otorhinolaryngol* Published Online First: 2013. doi:10.1016/j.ijporl.2013.12.011

3 Findings that may be associated with a cancer diagnosis in childhood. www.cclg.org.ukwww.cclg.org.uk/guidelines (accessed 11 Mar 2022).

4 Referral guidance. https://www.cclg.org.uk/Referral-guidance (accessed 11 Mar 2022).

5 Paddock M, Ruffle A, Beattie G, *et al.* Do otherwise well, healthy children with palpable cervical lymph nodes require investigation with neck ultrasound? *Arch Dis Child* 2020;**105**:1012–6. doi:10.1136/ARCHDISCHILD-2020-319648

10. Definitions

Term	Definition