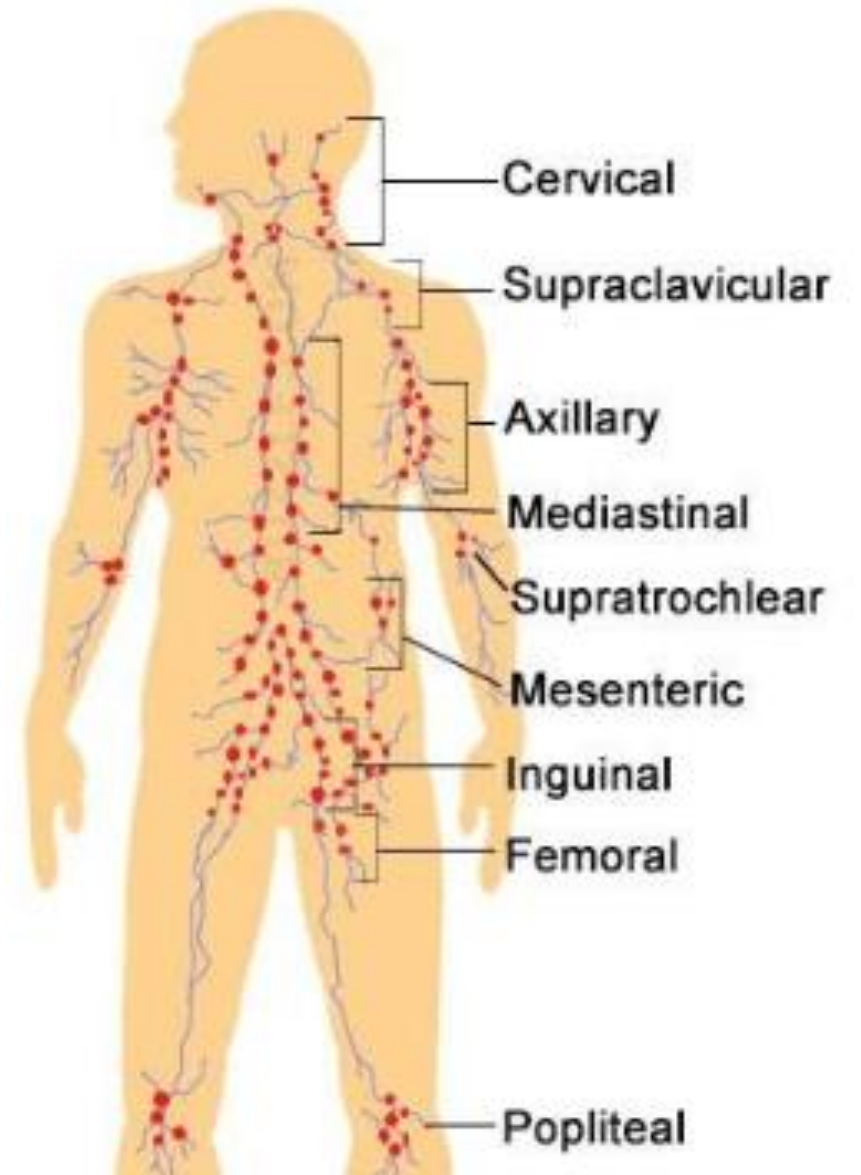


Lymphadenopathy- 5 step approach to management

Dr A Jain



Definition

- Lymphadenopathy is defined as the presence of one or more lymph nodes of more than 1 cm in diameter, with or without an abnormality in character.([1](#))
- In children, cervical lymphadenopathy is the most common cause of lymphadenopathy and neck masses

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Incidence

- Cervical lymphadenopathy is the most common cause of lymphadenopathy in the paediatric population- it presents to Primary Care either as a primary complaint of neck mass or as an incidental finding during clinical examination. Park reported that 90% of all children aged 4–8 years have palpable lymphadenopathy.([2](#))
- In another study by Larsson et al in Sweden, this rate was reported to be 38–45% in school aged healthy children ([4](#)).

Causes

Infective	Bacterial, viral, fungal, parasitic, spirochaetal, mycobacterial
Neoplastic	Usually leukaemia or lymphoma but can be secondary (metastasis) from any solid tumour elsewhere in the body. The commonest solid tumours in children are neuroblastoma, rhabdomyosarcomas, osteosarcomas, nasopharyngeal carcinoma and thyroid cancers. Note that brain tumours very rarely metastasize to lymph nodes.
Immunological	JIA, SLE, Vasculitic disease Special mention to Kawasaki Disease
Metabolic	Lipid storage disorders – such as Gaucher disease and Niemann-Pick disease
Drugs	Phenytoin, allopurinol, atenolol, carbamazepine, penicillin
Miscellaneous	Post live vaccines, e.g BCG

Causes of lymphadenopathy

- In a systematic review of paediatric cervical lymphadenopathy involving 2,687 patients, two thirds of the cases were due to non-specific benign aetiology with no definitive diagnosis, and 4.7% were secondary to malignancy.(3)

Deosthali A, Donches K, DelVecchio M, Aronoff S. Etiologies of pediatric cervical lymphadenopathy:a systematic review of 2687 subjects. *Glob Pediatr Health*. 2019;6:2333794X19865440. [[PMC free article](#)] [[PubMed](#)] [[Google Scholar](#)]

- Assessment by a specialist was required in 10% of 2556 patients with unexplained lymphadenopathy and biopsy was performed in 82 (3.2%) patients. Malignancy was found in 29 of all patients (1.1%) (5)

Fijten GH, Blijham GH. Unexplained lymphadenopathy in family practice. An evaluation of the probability of malignant causes and the effectiveness of physicians' workup. *J Fam Pract*. 1988;27:373-6. [[PubMed](#)] [[Google Scholar](#)]

Characteristics of lymphadenopathy	Associated symptoms
<ul style="list-style-type: none"> • Location • Duration • Pain • Redness 	<ul style="list-style-type: none"> • Fatigue • Weight loss • Fever • Bleeding or easy bruising • Joint pain or swelling • Rash • Pallor (looking very pale) • Cough or shortness of breath
Recent infections	Other
<ul style="list-style-type: none"> • Upper respiratory tract infection • Dental infections • Skin infections • Sexually transmitted infections 	<ul style="list-style-type: none"> • Foreign travel • Exposure to TB (contact/travel) • Immunisations and medications

History

- **History:**

Examination

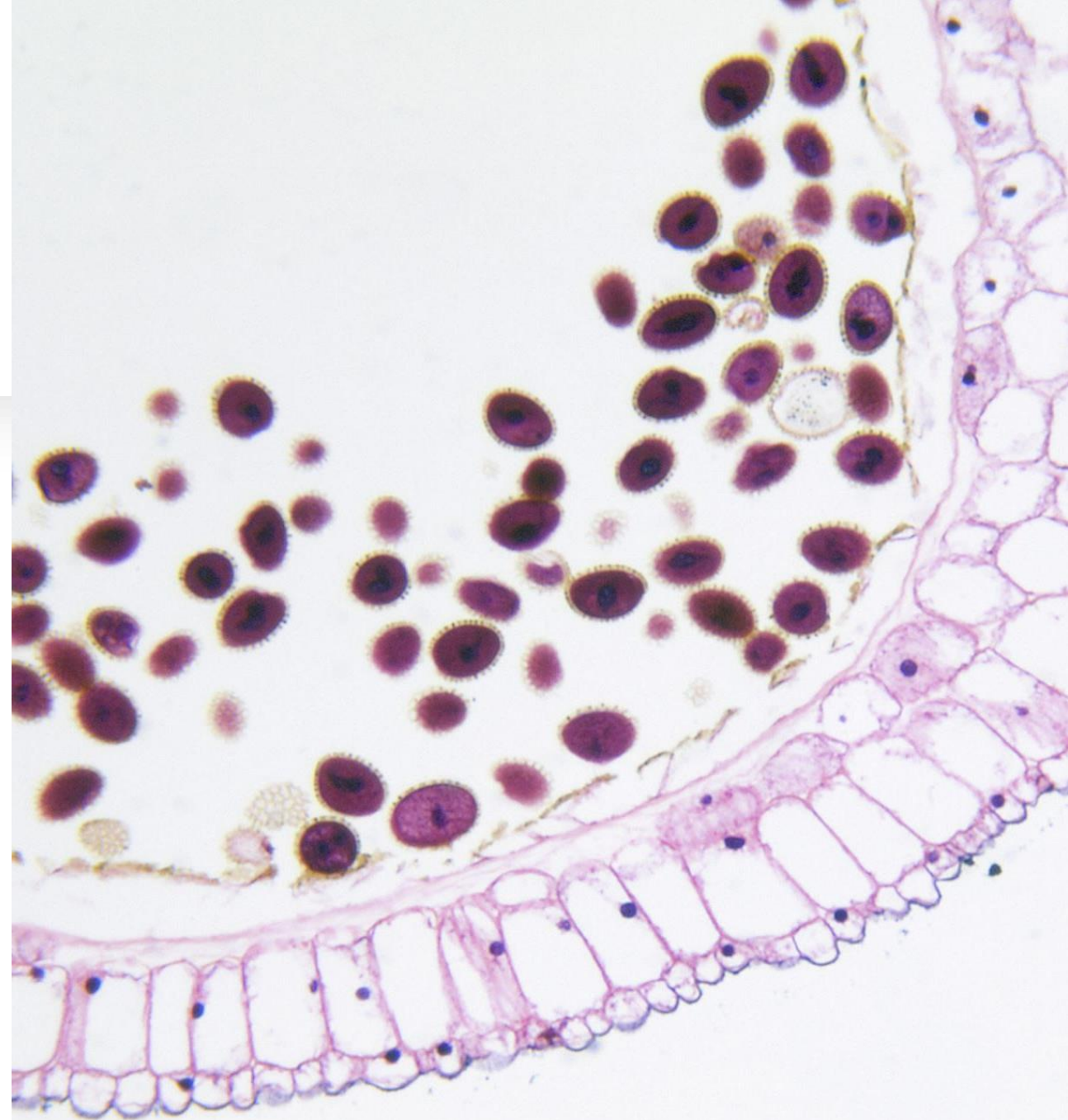
General	Lymphadenopathy
<ul style="list-style-type: none">• Is the child well or ill?• Height and weight• Fever• Pallor• Rash <p>Signs of Kawasaki Disease</p>	<ul style="list-style-type: none">• Size• Location• Fixation• Consistency• Tenderness• Skin changes• Any other lymph nodes?
Head and neck	Rest of systems
<ul style="list-style-type: none">• ENT• Scalp (including cradle cap)	<ul style="list-style-type: none">• Respiratory• Cardiovascular• Abdomen• Musculoskeletal if symptoms• Skin/presence of eczema

Examination

Examination:

Shotty lymphadenopathy (multiple small nodes that feel like buckshot or pellets under the skin) = reactive lymphadenopathy

Hard and irregular or firm or rubbery mass that is immobile or fixed to the deep tissues of the neck ? malignancy.





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- o Neck lumps in children- D/D from left to right-1) Thyroglossal Cyst/ 2)Cystic Hygroma/3)Large single firm fixed cervical node/4) cervical lymphadenitis

Case history and 5 Step approach

- Jack is a 3 year old who is brought to the GP by his parents with chief concerns about swelling in his neck for 2-3 weeks
- On examination he is noted to have 1.5 cm swelling on right side below the angle of mandible



A close-up, blue-tinted photograph of a pen writing on a document. The pen is positioned at the top right, and a line graph is visible on the left side of the page. The graph shows a series of peaks and valleys, with the most prominent peak in the center. The background is a light blue color with a subtle grid pattern.

Step 1

Is there presence of Red flag signs?

- Severe pallor
- Weight loss
- Loss of appetite
- Loss of energy
- Fever/signs of sepsis/signs of Kawasaki disease
- Unexplained bruising or bleeding
- Splenomegaly or hepatosplenomegaly
- Any suggestion of mediastinal mass (shortness of breath or discomfort lying down, unexplained fever or night sweats, unexplained weight loss, chest pain)

Management-red flag signs

- If there are any red flag signs- please contact the paediatric hotline/Paediatric team as soon as possible for acute Paediatric referral



Step-2-History and examination suggestive of reactive lymphadenopathy?

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Manage underlying cause

02

Reassure the child and family

03

Review if clinically warranted

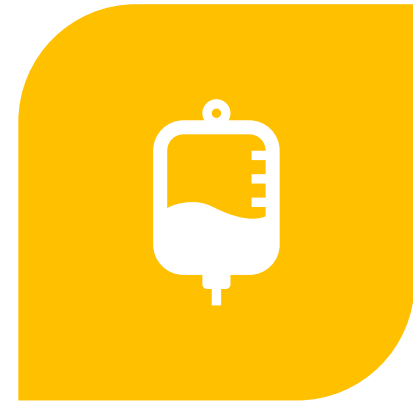
Step-3 History and examination suggestive of bacterial lymphadenitis?



REVIEW CLINICALLY



IF STABLE AND CAN TOLERATE-
TREAT WITH ORAL ANTIBIOTICS



IF CLINICALLY UNWELL- REFER TO
PAEDIATRICS FOR IV ANTIBIOTICS
AND FURTHER MANAGEMENT

Step 4 -patients
with unexplained
lymphadenopathy
with large nodes

cervical node more than 2 cm

Inguinal node more than 1.5 cm

Axillary/epitrochlear/supraclavicular node more than 1 cm

Discuss with paediatric consultant on hotline/ERS and get a Rapid access review

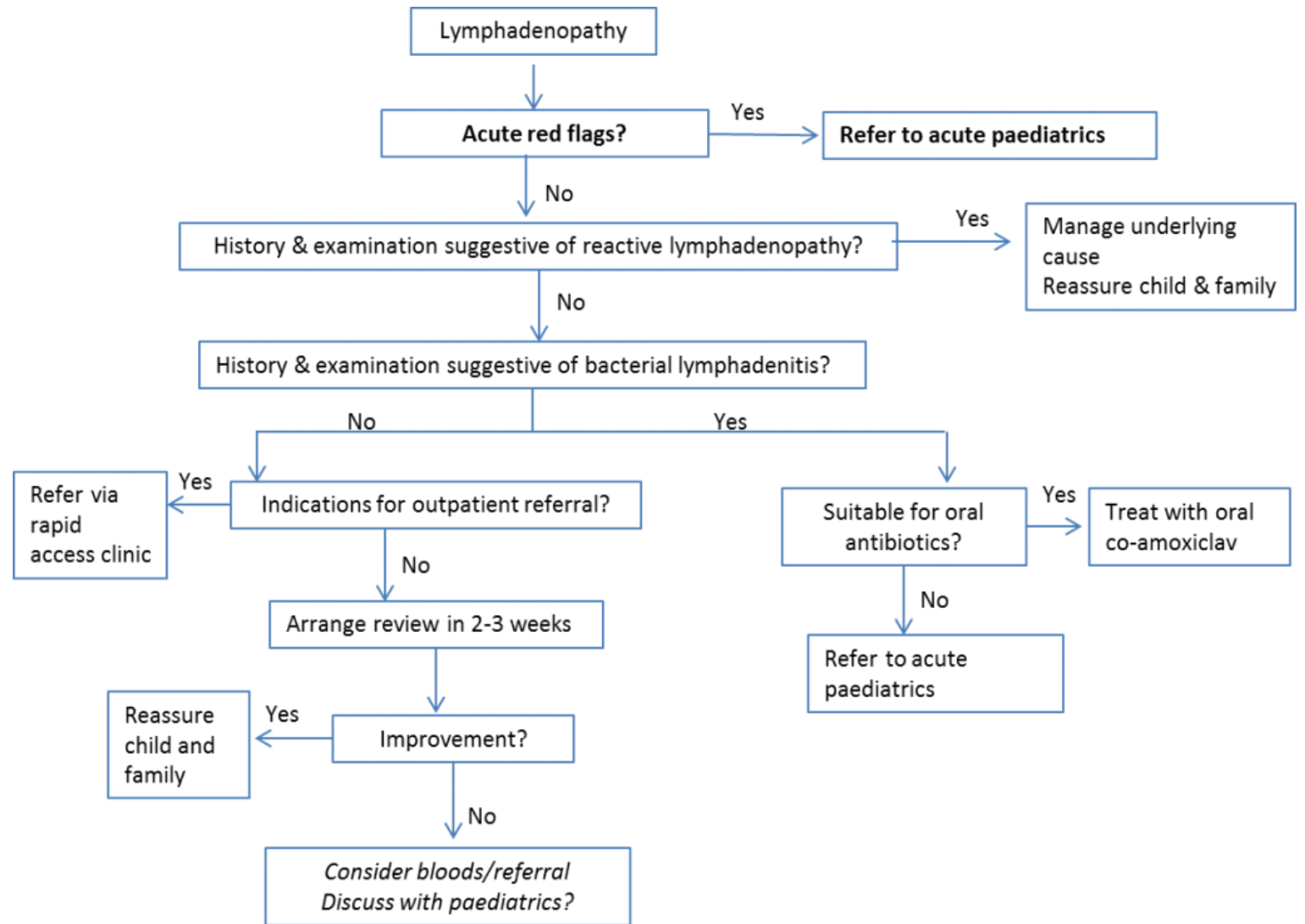
If possible, please arrange FBC, blood film, LFTs, ESR,LDH
consider ASOT/CMV/EBV serology if thought to be relevant.

Step-5
patients with
unexplained
lymphadenopathy
but well and
without large
nodes

Arrange review in 2-3
weeks

If no improvement- do
bloods and refer to
Paediatrics

5 step approach



To Summarise

Lymphadenopathy is one of the most common presentation to Primary care

Cervical chain of lymph nodes most commonly affected

Majority of the causes benign or self limiting

Please remember the red flag signs as they indicate serious pathologies including malignancies, Kawasaki's disease or inflammatory pathologies

References

- 1. Ferrer R. Lymphadenopathy:differential diagnosis and evaluation. *Am Fam Physician*. 1998;58:1313–20. [[PubMed](#)] [[Google Scholar](#)]
- 2. Park YW. Evaluation of neck masses in children. *Am Fam Physician*. 1995;51:1904–12. [[PubMed](#)] [[Google Scholar](#)]
- 3. Deosthali A, Donches K, DelVecchio M, Aronoff S. Etiologies of pediatric cervical lymphadenopathy:a systematic review of 2687 subjects. *Glob Pediatr Health*. 2019;6:2333794X19865440. [[PMC free article](#)] [[PubMed](#)] [[Google Scholar](#)]
- 4. Larsson LO, Bentzon MW, Berg Kelly K, et al. Palpable lymph nodes of the neck in swedish schoolchildren. *Acta Paediatr*. 1994;83:1091–4. <http://dx.doi.org/10.1111/j.1651-2227.1994.tb12992.x>. [[PubMed](#)] [[Google Scholar](#)]
- 5. Fijten GH, Blijham GH. Unexplained lymphadenopathy in family practice. An evaluation of the probability of malignant causes and the effectiveness of physicians' workup. *J Fam Pract*. 1988;27:373–6. [[PubMed](#)] [[Google Scholar](#)]



- Many thanks for listening
- Any questions?