Lymph Node Assessment Primary Care Pathway

Quick Links: Primer & Expanded details | Provider resources | Patient resources | Provide feedback

Features of Lymphadenopathy Concerning for Lymphoma

On Clinical Examination

Presence of all three features below are indications for referral to the Lymphoma Diagnosis Program

- Size >1cm supraclavicular, >2cm neck, >3cm axilla/groin
- Persistent or enlarging node(s) >2 weeks
- Nodes are not explained by signs or symptoms of:
  - Autoimmune disease (arthritis, morning stiffness, rash, Raynaud's)
  - Infection (chills, morning/afternoon fever, sore throat, nasal congestion, cough, diarrhea, skin ulcers/lesions, recent travel or other exposures)

Features particularly concerning for lymphoma

- Age >40 years
- Fixed or Matted (non-mobile)
- Supraclavicular location
- Lymphadenopathy that is only mildly- or non-tender
- Generalized lymphadenopathy (two or more regions involved)
- Systemic signs and symptoms: "B" symptoms (fever, drenching night sweats, >10% weight loss), hepatosplenomegaly, pruritis

On Imaging
(Assuming no other malignancy/condition to explain findings)

Presence of any features below are indications for biopsy

- Single enlarged lymph node >3cm short axis and abnormal morphology suggestive of lymphoma
- Multiple enlarged lymph nodes with abnormal morphology suggestive of lymphoma and with some nodes usually reaching a size ≥ 2cm in short axis
- A conglomerate nodal mass (neck, mediastinum, mesentery, retroperitoneum)
- A mass where the primary imaging concern is lymphoma
- Splenomegaly with multiple focal solid abnormalities

If patient is >18 years old

Essential labs (CBCD, Lytes, Creatinine, LFTs, LDH) and Chest X-Ray (AP/ Lateral)

AND

Refer to Lymphoma Diagnosis Program for expedited access to urgent whole body CT scan, image-guided core biopsy (FNA strongly discouraged as it does not provide adequate tissue for diagnosis) and cancer centre appointment

If patient is <18 years old

Page Pediatric Oncologist on Call or send urgent referral to:

Edmonton Stollery Children's Hospital – Fax: 780-407-8821 or Page through Switchboard at 780-407-8821

Calgary Alberta Children's Hospital – Fax: 403-955-2647 or Page through Switchboard at 403-955-7211

LYMPHOMA DIAGNOSIS PROGRAMS

Referral Form Link: www.AlbertaReferralDirectory.ca (search: "lymphoma")

Edmonton: 780-432-8681 (fax)
Calgary: 403-521-3245 (fax)
Red Deer: 1-403-592-4243 (fax)
Lethbridge: 1-403-476-1802 (fax)
Medicine Hat: 403-529-8007 (fax)

BEWARE OF EMERGENT PRESENTATIONS: *NOT APPROPRIATE FOR OUTPATIENT LYMPHOMA DIAGNOSIS PROGRAM REFERRAL*

- **AIRWAY COMPROMISE or**
- **SUPERIOR VENA CAVA COMPRESSION:**

SEND TO EMERGENCY DEPARTMENT FOR STABILIZATION / URGENT ASSESSMENT BY THORACIC SURGERY FOLLOWING USUAL PROCEDURES*

CALGARY - ADVISE HEMATOLOGIST ON-CALL

- **SPINAL CORD COMPRESSION:**

SEND TO EMERGENCY DEPARTMENT FOR STABILIZATION / URGENT ADMISSION FOLLOWING USUAL PROCEDURES*

EDMONTON - ADVISE MALIGNANT HEMATOLOGY SERVICE AT CROSS CANCER INSTITUTE

CALGARY - ADVISE HEMATOLOGIST ON-CALL

* Family physicians communicate with Emergency when sending patients as per local standards.

This primary care pathway was co-developed by primary and specialty care and includes input from multidisciplinary teams. It is intended to be used in conjunction with specialty advice services, when required, to support care within the medical home.

EXPANDED DETAILS

Pathway Primer

- Lymphoma is the 5th most common cancer in Canada. Early diagnosis can allow for cure, but in 2016-17 at least 30% of new lymphoma patients were diagnosed only after admission to hospital – 80% of those being urgent admissions. The Lymphoma Diagnosis Program has since been created to minimize diagnostic and treatment delay for patients with suspicious lymphadenopathy.
- The pathway's objectives are to expedite and support patients with highly suspicious presentations that have high likelihood of being a lymphoma diagnosis from the point of suspicion through diagnostic work-up and staging to a consult with a hematologist/oncologist.
- Other problems being addressed are: 1) psychosocial and symptom management support, 2) patient education, 3) reduction in multiple, non-diagnostic biopsy investigations, and, 4) delayed staging investigations.
- Two intake points have been identified. These criteria are high specificity based on clinical consensus and available evidence:
    - **Symptomatic presentations in primary care or emergency department** - For suspicious symptomatic presentations, patients would be referred to the cancer centre and flagged for lymphoma triage nurses to coordinate diagnostic and staging investigations including whole body CT and core needle biopsy instead of excisional biopsy, to organize consults with oncologist/hematologist and to deliver patient support education.
    - **Suspicious findings on incidental imaging (Ultrasound and CT)** - Patients with suspicious findings on ultrasound or CT scan would have their imaging results notified to both ordering provider and the cancer centre, which would get flagged for lymphoma triage nurses to close the loop with the ordering provider and ensure the patient gets a timely referral to the cancer centre and coordination of further diagnostic and staging investigations.
- For the few patients with a negative biopsy, there will be follow-up with primary care including information resources. The operational model for triage and case review for uncertain cases or cases with delayed referrals or diagnostic or staging tests would be a team-based approach that includes rotating hematologist/oncologist and lymphoma triage nursing staff.

Features of Lymphadenopathy Concerning for Lymphoma

1. Clinical Assessment of Lymphadenopathy

- History (Think MIAMI; see section 3)
    - Age?
    - Duration and progression – persistence beyond 2 weeks?
    - Characteristics of concerning lymph nodes – mobility, consistency, sensation?
    - Site(s) of lymphadenopathy – spreading? abnormalities of surrounding skin/ mucosa?
    - Autoimmune and/or systemic symptoms?
    - Travel history or sick contacts?
    - Culprit medications (*Allopurinol, Atenolol, Captopril, Carbamazepine, Gold, Hydralazine, Penicillins, Phenytoin, Primidone, Pyrimethamine, Quinidine, Trimethoprim/sulfamethoxazole, Sulindac)?

- Physical Exam
  - Fever
  - Weight loss (unintentional loss of >10% of usual body weight in <6 months)
  - Full-body lymph node exam with further attention to associated lymph node drainage area for areas of concern
  - Abdominal exam focused on assessment for organomegaly
  - Skin and joint exam focusing on assessment of autoimmune features

Radiology reports do not typically indicate non-obstructing kidney stone as a specific finding. However, a kidney stone can be considered non-obstructing when it is in a calyceal or peripheral location of the kidney and there is no hydronephrosis. Most patients will be asymptomatic from these stones, but some patients with non-obstructing stones can present with symptoms including, but not limited to, flank pain, abdominal pain, and groin pain.

2. Possible Etiology Based on Clinical Assessment

Table 1

Malignancy	Infection	Autoimmune	Other
• Enlarging node(s) > 2 weeks • Supraclavicular location • Fixed or Matted Size: ≥ 1cm supraclavicular ≥ 2 cm neck ≥ 3 cm axilla/groin Increased risk: • Age > 40 yrs • Generalized, non-tender Hepatosplenomegaly • Fever, >10 % weight loss • Drenching night sweats	• Fever, chills • Sore throat • Nasal congestion • Cough • Diarrhea • Skin lesions • Travel, bites, STDs, other exposures • Malaise, fatigue	• Arthritis • Morning stiffness • Rash • Raynaud's • Dry eyes/mouth	• Medications • Sarcoidosis (hilar) Granulomatous • Reactive • Rare conditions • Unexplained
Action:	**Action:**	**Action:**	**Action:**
• CBC&diff, Electrolytes, Creatinine, LFTs, LDH • CXR PA/Lat • **Refer to Lymphoma Diagnosis Program for CT scan and Core needle biopsy**	• Specific testing according to suspected Infection (see Table 2) such as CBC&diff, Monospot, LFTs, Cultures, Serologies • Seek advice from Infectious Disease	• Specific testing according to suspected disorder, such as CBC&diff, creatinine, LFTs, CRP, ANA, RF, CK, Urine R&M, EMG, Muscle biopsy • Seek advice from Rheumatology	• Observe x1 month if low risk. • Hold suspected medications • Re-assess other causes & consider biopsy if node persists

3. Causes of Lymphadenopathy

MIAMI

- Malignancy
    - Lymphoma, metastatic carcinoma/melanoma, Kaposi sarcoma, leukemias
- Infections
    - Bacterial: cutaneous infections or abscess (staphylococcal or streptococcal), tuberculosis, lymphogranuloma venereum, syphilis, brucellosis, cat-scratch disease (Bartonella), chancroid, tularemia, typhoid fever
    - Fungal: coccidioidomycosis, cryptococcosis, histoplasmosis
    - Viral: infectious mononucleosis (Epstein-Barr virus), adenovirus, cytomegalovirus, human immunodeficiency virus, hepatitis, herpes zoster, rubella
    - Other: helminthic, Lyme disease, rickettsial, scrub typhus, toxoplasmosis
- Autoimmune disorders
    - Rheumatoid arthritis, Systemic lupus erythematosus, Sjögren syndrome, Still disease, Dermatomyositis
- Miscellaneous/unusual conditions
    - Angiofollicular lymph node hyperplasia (Castleman disease), berylliosis, silicosis histiocytosis, Kawasaki disease, Kikuchi lymphadenitis, Kimura disease, sarcoidosis
- Iatrogenic causes
    - Medications (Allopurinol, Atenolol, Captopril, Carbamazepine, Gold, Hydralazine, Penicillins, Phenytoin, Primidone, Pyrimethamine, Quinidine, Trimethoprim/sulfamethoxazole, Sulindac)
    - Serum sickness

4. Presentations Suggesting Causes of Lymphadenopathy and Initial Testing

Table 2

Symptoms	Suggested Diagnoses	Initial Testing
Fever, drenching night sweats, weight loss, or nodes located in supraclavicular, popliteal, or iliac region, matted/fixed/large nodes, bruising, splenomegaly	Lymphoma, leukemia, solid tumor metastasis	CBC, nodal biopsy, imaging with ultrasonography or computed tomography (imaging should not delay referral for biopsy)
Fever, chills, malaise, sore throat, nausea, vomiting, diarrhea; fatigue	Bacterial or viral pharyngitis, influenza, mononucleosis, tuberculosis, hepatitis, rubella	Limited illnesses may not require any additional testing; depending on clinical assessment, consider CBC, monospot test, liver function tests, cultures, and disease- specific serologies as needed
High-risk sexual behavior	Chancroid, HIV infection, lymphogranuloma venereum, syphilis	HIV-1/HIV-2 immunoassay, rapid plasma reagin, culture of lesions, nucleic acid amplification for chlamydia, migration inhibitory factor test
Animal Contact: Cats	Cat-scratch disease (*Bartonella*) Toxoplasmosis	Serology and polymerase chain reaction Serology

Animal Contact: Rabbits, Sheep or Cattle (Wool, Hair, Hides, Undercooked Meat)	Brucellosis Tularemia	Serology and polymerase chain reaction Blood culture and serology
Recent Travel or Insect Bites	Diagnosis based on endemic region	Serology and testing as indicated by suspected exposure
Arthralgias, rash, joint stiffness, fever, chills, muscle weakness	Rheumatoid arthritis, Sjögren syndrome, dermatomyositis, systemic lupus erythematosus	Antinuclear antibody, anti- doubled-stranded DNA, erythrocyte sedimentation rate, CBC, rheumatoid factor, creatine kinase, electromyography, or muscle biopsy as indicated

Adapted from: Gaddey, H.L. & Riegel, A.M. (2016). Unexplained Lymphadenopathy: Evaluation and Differential Diagnosis. *Am Fam Physician*, 94(11), 896-903.

BACKGROUND

About this pathway

- The creation of the Lymphoma Diagnosis Pathway builds on the success of previous pathways including lung, breast and prostate cancer. Building out multiple cancer diagnosis pathways has begun to create end- to-end pathways for cancer patients in Alberta on a provincial scale with the goals of expedited cancer diagnosis and providing better support to patients through that process.
- Initial work on this pathway was started in May 2019 and is being implemented over two years. Patients, providers and administrators from relevant areas were brought together to gather information on current experiences with lymphoma diagnosis, collect data on how the system is performing and review best practice evidence. Provincial principles of care, strategic areas for improvement in Alberta and a provincial measurement and reporting framework were defined.
- Primary Care, diagnostic imaging and lab providers were engaged to co-design pathways with patients, hematologists/oncologists and lymphoma triage nurses. Local implementation teams engaged in work around planning and pathway roll-out, determination of barriers and facilitators, and shared learnings with other sites.
- Performance dashboard reports will be developed and disseminated to provide feedback to clinical teams on pathway performance and outcomes. Sustainability planning will be initiated early with implementation teams to ensure successful transition of pathways to operations at the end of the initiative.

Authors and conflict of interest declaration

- This pathway was reviewed and revised under the auspices of the Cancer Strategic Clinical Network (CSCN) in 2019 by a multi-disciplinary team led by family physicians and hematologists/oncologists. For more information, contact the CSCN at Cancer.SCN@ahs.ca.

Pathway review process, timelines

- Primary care pathways undergo scheduled review every three years, or earlier, if there is a clinically significant change in knowledge or practice. The next scheduled review is June 2026. However, we welcome feedback at any time. Please email comments to Cancer.SCN@ahs.ca.

DISCLAIMER

This pathway represents evidence-based best practice but does not override the individual responsibility of health care professionals to make decisions appropriate to their patients using their own clinical judgment given their patients' specific clinical conditions, in consultation with patients/alternate decision makers. The pathway is not a substitute for clinical judgment or advice of a qualified health care professional. It is expected that all users will seek advice of other appropriately qualified and regulated health care providers with any issues transcending their specific knowledge, scope of regulated practice or professional competence.

PROVIDER RESOURCES

Advice Options

AIRWAY COMPROMISE, SUPERIOR VENA CAVA COMPRESSION or SPINAL CORD COMPRESSION. This patient needs to be directed to hospital through RAAPID or the ER. Call RAAPID for on-call hematologist or 911.

Zone	Program	Online Request	Phone Number	Hours of operation	Anticipated Turnaround Time
Urgent Telephone					
North, Edmonton, Central, Calgary, South	RAAPID	N/A	**North:** 1-800-282-9911 780-735-0811 **South:** 1-800-661-1700 403-944-4486	**7 days per week** 24 hours	1 hour
Non-Urgent Telephone					
Edmonton, North	ConnectMD	Online Request	1-844-633-2263	**Mon - Fri** 9am – 6pm*	2 business days
Calgary	Specialist Link	Online Request	403-910-2551	**Mon - Fri** 8am – 5pm*	1 hour

*There are some exceptions to non-urgent telephone program hours of operation and exclusion

References
Gaddey, H.L. & Riegel, A.M. (2016). Unexplained Lymphadenopathy: Evaluation and Differential Diagnosis. *Am Fam Physician*, 94(11), 896-903.
Mohseni, S.H., Shojaiefard, A., Khorgami, Z., et al. (2014). Peripheral Lymphadenopathy: Approach and Diagnostic Tools. *Iran J Med Sci*, 39(2), 158-170.

PATIENT RESOURCES

Description	Website
Superficial lymph node biopsy	https://myhealth.alberta.ca/Alberta/Pages/superficial-lymph-node-biopsy-care-instructions.aspx