Looking for Trouble: The Work up of Suspected Cancer

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for

Community-Based CPD Programming | Thompson

15 September, 2023

Case1: Tania, age 35

- Tania presents on a humid Friday afternoon with two complaints: a lump in the right side of her neck and an itchy rash which she says is present everywhere but worst over her back. Aside from a bout of infectious mononucleosis which you diagnosed five years ago, Tania had been in good health prior to the onset of these symptoms. She reports having lost about 7 lbs. in the past three weeks. Tania thinks her diffuse itching is from the stress of her job as inspector at a meat packaging plant. She thinks the hot weather over the past few weeks is also bothering her. She tends to sweat a lot at night, and feels restless when she tries to sleep.
- A rounded swelling in the vicinity of the anterior border of the mid-portion of her right sternomastoid is evident. Ovoid, firm, smooth and non-tender, it measures about 3 cm in its vertical axis. The horizontal diameter is difficult to assess because the lateral portion of the node seems to disappear under the muscle belly of the sternomastoid.

Lymphadenopathy

- Lymphadenopathy (lymph nodes that are abnormally large or have an abnormal consistency) estimated annual incidence of 0.6%.[1]
- Malignancy is the cause of unexplained lymphadenopathy in approximately 1.1% of cases in the general population, increasing significantly with age.[2]

1. Gaddey HL, Riegel AM. Unexplained lymphadenopathy: evaluation and differential diagnosis. Am Fam Physician 2016;94(11):896–903.

2. 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(4):373–6

QUESTION #1: WHAT QUESTIONS DO YOU HAVE FOR TANIA?

- Tania denies having recently had a sore throat, fever, coryza, or cough.
- She is unaware of any sores in her mouth.
- She noticed the neck lump about two weeks ago; it has doubled in size since she noticed it. The node is not sore.
- Tania's energy has been mostly "OK", although she thinks that job-related stress has fatigued her just slightly in the past few weeks. She sleeps somewhat fitfully.
- The itching has been present almost continuously for the past three weeks.
- She has no known scabies contacts.
- Tania does not consume alcoholic beverages.
- Tania has no history of recent travel.
- Her parents are of Scottish and Ukrainian background; she grew up in the south end of Winnipeg; and she has no known history of exposure to tuberculosis.

QUESTION #2: WHAT SHOULD THE PHYSICAL EXAMINATION INCLUDE IN A PATIENT WHO PRESENTS WITH A LATERAL NECK MASS?

- A complete history and physical examination, including the following:
  - the patient's general appearance and vital signs;
  - A head and neck examination*, with special attention to the upper aerodigestive tract. The examination of the head and neck of patients who present with a lateral neck mass should include inspection of the face and neck for skin lesions suggestive of skin cancers (melanoma, squamous or basal cell). Take care to examine the scalp and the nape of the neck, which are often overlooked. In addition to inspection of the lips, tongue, dentition, gums and pharynx, an examination of the oral cavity should include inspection and (if clinically warranted) gloved palpation of the mucosa of the buccal and lingual sulci; and the base of the tongue.
  - A cranial nerve examination;
  - A full body lymph node examination;
  - A full body skin examination with particular attention paid to findings suspicious for melanoma;
  - Lung auscultation;
  - Careful palpation of the abdomen, looking especially for masses and for hepato- and splenomegaly;

Case 1 continued:

- **Tania's resting pulse is 96, her blood pressure (right arm sitting) 104/72, T 36^{8}, O_2 saturation 95% on room air. Her head & neck examination discloses the enlarged right neck node, which is non-tender and slightly mobile, and a slightly ruddy complexion. The oropharynx appears normal. On careful examination you cannot appreciate any other enlarged nodes of the head, neck, axillae, epitrochlear areas or groins. Her rash consists only of scattered faint scratches over her trunk and limbs, and some larger and slightly inflamed excoriations of her upper back, sparing the areas beyond the reach of her fingers. Her cardiorespiratory and abdominal examinations disclose no other abnormalities.**

QUESTION #3: WHAT IS ON THE DIFFERENTIAL DIAGNOSIS OF A LATERAL NECK MASS?

- **LATERAL NECK MASSES FALL BROADLY INTO THREE CATEGORIES: INFLAMMATORY; CONGENITAL; AND NEOPLASTIC. THESE COULD INCLUDE:**

- Benign reactive adenopathy, e.g. from a viral or bacterial upper respiratory infection
- Lymphomas, both Hodgkin and NHL
- Nodal involvement from a primary cancer of the upper aerodigestive tract
- Nodal involvement from a primary cancer of thyroid or salivary glands
- Other primary tumors of the head and neck (e.g. Schwannoma, paraganglioma)
- Tuberculous lymphadenopathy of the neck (“scrofula”)
- Other bacterial lymphadenitis (e.g. Staph aureus, Streptococcal, tularemia)
- HIV
- nodal spread from a skin cancer of the head or neck
- metastatic spread from a lung cancer
- branchial cleft cysts
- hemangiomas and vascular malformations

Case 1 continued:

- **you are especially concerned, in view of Tania's cervical lymphadenopathy and constitutional symptoms, and diffuse pruritus, that she might have a malignancy. You are eager to obtain a tissue diagnosis.**

QUESTION #4: HOW SHOULD YOU GO ABOUT OBTAINING A TISSUE DIAGNOSIS?

- In the workup of an as-yet undiagnosed pathological lymph node of the lateral neck, it is recommended that a fine-needle aspirate (FNA) be obtained prior to proceeding (in particular) with an excisional biopsy. This is done to rule out a primary squamous carcinoma of the head and neck. Excision of a nodal neck metastasis from a squamous carcinoma of the head or neck, if performed outside the context of definitive surgical management, can make subsequent surgery more extensive and difficult and can also increase the risk for recurrence of the disease in the contralateral neck. FNA biopsy of enlarged neck nodes is usually done by the consulting ENT surgeon or Head and Neck surgical oncologist; primary care clinicians, if comfortable with the procedure, can also perform FNA biopsy of suspicious neck nodes, but should not delay referral to a consultant (for example, pending return of the pathology report, or for the sake of scheduling a second visit for the procedure).

Case 1 continued:

- **You proceed with an FNA of the enlarged neck node on the occasion of that visit. Anticipating the possible need for an excisional biopsy of the node to confirm your suspicion of a malignancy, and concerned about her 'B' symptoms, you dictate a referral letter to a Head & Neck Surgeon, explaining the urgency of the matter to your clinic administrative staff, who promise to get the referral 'out the door in 24'. To further expedite the referral, you telephone the consultant, who advises you he will see your patient within the next 14 days*.**
- ***visit CancerCare Manitoba's website at http://www.cancercare.mb.ca/diagnosis and click on the various disease-specific *In Sixty* Pathways to see the recommended timelines pertinent to the work-up of a suspected cancer.**

QUESTION #5: WHAT OTHER WORK UP SHOULD YOU UNDERTAKE WHILE WAITING FOR THE EXCISIONAL BIOPSY?

- You should provide Tania with requisitions for a chest X-ray, a CBC and HIV serology to be done that same day. If the lymphocyte count is elevated on the CBC, you should also order flow cytometry.
- Renal function tests and LFTs should be obtained
- Send an urgent requisition for computed tomography of the neck, chest, abdomen & pelvis. Ensure that the report is copied to the Head & Neck surgeon and to any other consultant to whom you refer your patient.
- Offer your patient a referral to Cancer Navigation services at your local/regional Hub. A Nurse Navigator can answer your patient's questions about Manitoba's cancer care system, track your patient's progress through the system, and arrange for tissue pathology reports to be forwarded to you and to the specialists involved in your patient's care.

Case 1 continued:

- **The chest radiograph report arrives early the next week. It suggests possible mediastinal lymphadenopathy. You telephone the radiologist at the community hospital to which the CT requisition was sent; he agrees to expedite the appointment for the CT scans you have requested.**
- **Tania comes back to see you for review the next week, two weeks after her initial visit with you. The FNA showed numerous lymphocytes but was not adequate for diagnosis. She has already had an excisional biopsy of the enlarged neck node. You telephone the Head & Neck Surgeon, who says he has just received the pathology report which confirms the suspected diagnosis of Hodgkin lymphoma. The CT report, just back this morning, mentions two other enlarged nodes in the neck, including a posterior cervical node and a supraclavicular node, both on the right. Bulky mediastinal lymphadenopathy is also remarked, including a node which impinges on the superior vena cava. Tania notes that along with the work stress she has felt restless at night, she is having insomnia, and she feels particularly agitated if she lies down, so she has been sleeping in her recliner for the past week. As Tania takes a seat in your examination room, you are struck by the ruddiness of her complexion.**

Question #6: What condition is complicating Tania's newly diagnosed Hodgkin lymphoma? How will you manage it?

- Tania has an evolving superior vena cava syndrome. Depending on Tania's clinical status and your practice setting, you might send her directly to the nearest ER, or arrange through the on-call hematologist for Tania's admission that same day to a tertiary care facility where she can be given high dose steroids, with a view to starting chemotherapy in the next 24-48 hours.
- Radiotherapy is also a treatment that can be given for SVC syndrome if urgent initiation of chemotherapy is not feasible.
- Send to CCMB along with the written (urgent) hematology-oncology request all relevant history, lab data, and imaging and pathology reports.
- There are no proven connections between environmental exposures and Hodgkin Lymphoma, but an increase in incidence has been reported in woodworkers, farmers, and meat workers.
- About 70% of Hodgkin lymphoma cases present with cervical adenopathy alone, with no associated B-symptoms.

IN SIXTY CANCER ACTION

Work-Up of Lymphadenopathy Suspicious for LYMPHOMA

Timeline and Legend pg.5

RISK FACTORS: HIGH risk: immune deficiency (ie. HIV or organ transplant), autoimmune disease +/- immune suppressing medications, and history of lymphoma

PRACTICE POINTS: ***Consider your differential diagnosis*** including reactive LN due to infection/inflammation, metastatic malignancy, and autoimmune disease. This document applies to adults 17 years of age or older.

PRACTICE POINTS: **All referrals sent within 24 hrs of visit.** Provide complete information as requested to avoid delays. Ensure patient and family is well informed and receives appointment information. If patient is in distress, offer referral to local counsellor. See ***Supporting Information for Clinicians*** (pg 4) for contacts and resources. Contact the **Cancer Question Helpline for Primary Care** for assistance.

Emergent
- Airway compromise
- Superior vena cava compression
- Spinal cord compression

→ **Send to Emergency Department**

Palpable Lymphadenopathy (LN)
- Abnormal LN: >2-3 cm, persistent enlargement & without obvious cause

Lymphadenopathy on Imaging

→ **History & Physical Exam**
*** Consider your differential diagnosis*****
Order CBC, HIV test, Chest X-ray

→ **No ↑ Lymphocyte Count**

High Suspicion / Concerning Features
PROCEED without delay
- HIGH Risk Patients (as above)
- LN + Abnormal Bloodwork (severe anemia, thrombocytopenia, pancytopenia)
- Widespread LN +/- splenomegaly or bulky LN (mass >6cm)
- Mediastinal mass
- LN with rapid growth
- LN & B symptoms (drenching sweats, unexplained fever, weight loss)
- Patient symptomatic from abnormal LN (ie: short of breath, abdominal pain)

If ANY Concerning features - Determine* best site for diagnostic biopsy
- **Order CT scans if not already done,** including neck, chest, abdomen & pelvis
- **Preference for site of biopsy:** Palpable >Mediastinal >CT guided
- **Order CBC, chemistry (including Ca, LDH, Cr) and INR if not already done**

if assistance is needed contact Hematologist on call for advice

→ **Continue to Diagnostic pathway pg.2**

If NONE Clinical Follow up → **Persistent /progressive LN** on exam (>4weeks) or imaging (after serial examination)

↑ Lymphocyte Count → **Order flow cytometry on peripheral blood** (query CLL vs other lymphoma) → **Positive for CLL or monoclonal lymphocyte population** → **REFER TO CCMB**

In Sixty All referrals / orders sent within 24 hrs of visit

In Sixty In Sixty timeline starts with evidence of concerning features

In Sixty All imaging done within 2 weeks

Suspicion Pathway Notes:

Sixty day suspicion to first treatment timeline begins on the date of patient visit when a high clinical suspicion of cancer triggers further cancer-focused investigation.
Only requisitions for patients who fit the red pathway should be noted as "urgent " to ensure urgent resources and timeline capacity can be maintained in next stages of the pathway.
Pathways are subject to clinical judgement and actual practice patterns may not always follow the proposed steps in this pathway.

IN60_LYMS
15-05-2015

Case 2: Helen Bighetty

- Helen Bighetty is a 58 year old female, well known to you, presenting today with a recurrence of low back pain she has had on & off for 10+ years.
- Helen has hypertension diagnosed with a home blood pressure mean BP of 138/86
- treated with amlodipine 5 mg daily.
- 35 pack-year history of cigarette smoking.
- slightly overweight.
- Cholecystectomy age 36.
- NKA

Helen Bighetty

- “I’ve thrown my back out again.”
- What do you want to know?
- Her pain in mid-to-low back (higher in her back than usual)
- Past 5 weeks
- Wakes with pain
- Partial relief with acetaminophen 650 mg QID +/- ibuprofen up to 400 mg TID
- No leg pain or paraesthesias
- Denies fecal incontinence or urinary retention

Helen Bighetty

On examination:

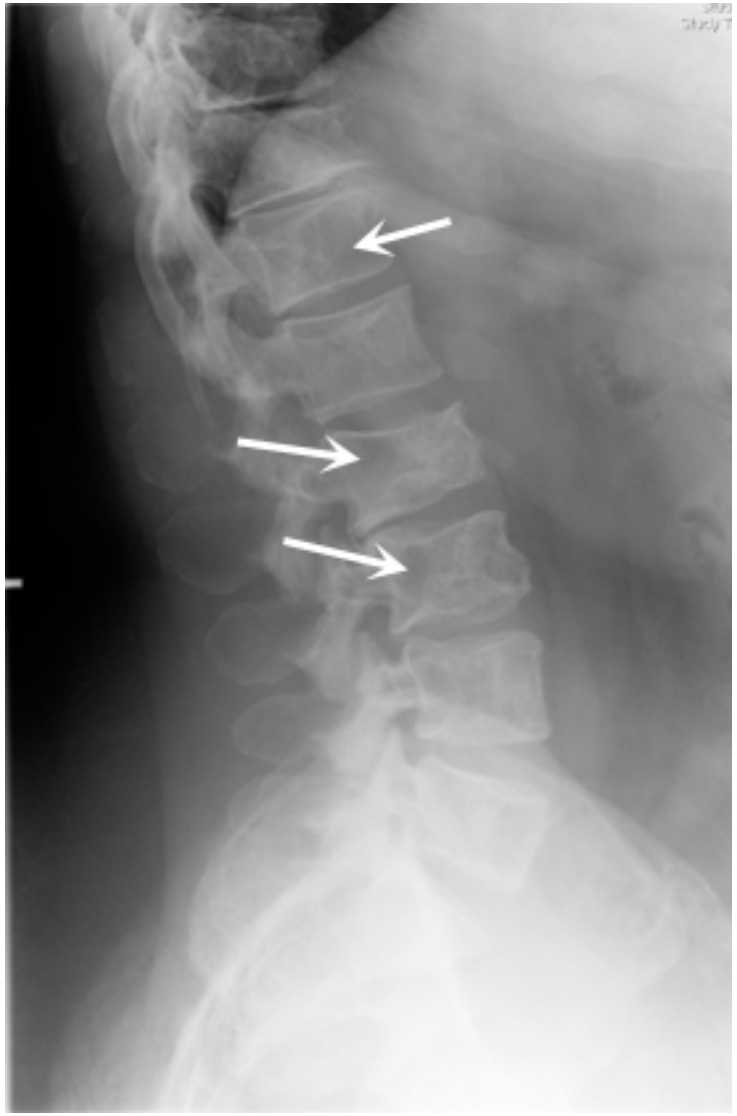
- LS spine ROM within normal for age
- No provocation of pain with flexion or extension
- Punch tenderness at ~ T12 and L2
- SLR negative bilaterally
- Lower limb power and sensation normal
- Anal sphincter tone normal
- Perianal sensation normal.

Helen Bighetty

***What imaging do you want*?**

- Plain radiographs of T, LS spine
- Lytic lesions at T12 and L1,2 & 3 vertebral bodies

Helen Bighetty



https://www.stritch.luc.edu/lumen/meded/radio/curriculum/neurology/spine_plain_xray_2013.htm

Lytic Spine Lesions

- **FOG MACHINES**
- **F:** fibrous dysplasia (FD) or fibrous cortical defect (FCD)
- **O:** osteoblastoma
- **G:** giant cell tumor (GCT) or geode
- **M:** metastasis(es)/myeloma
- **A:** aneurysmal bone cyst (ABC)
- **C:** chondroblastoma or chondromyxoid fibroma
- **H:** hyperparathyroidism (brown tumor)
- **I:** infection (osteomyelitis) or infarction
- **N:** non-ossifying fibroma (NOF)
- **E:** enchondroma or eosinophilic granuloma (EG)
- **S:** simple (unicameral) bone cyst

Hakim T, Ashraf A, Sharma R, et al. Lucent/lytic bone lesion - differential diagnosis (mnemonic). Reference article, Radiopaedia.org (Accessed on 24 Aug 2023) https://doi.org/10.53347/rID-450

Helen Bighetty

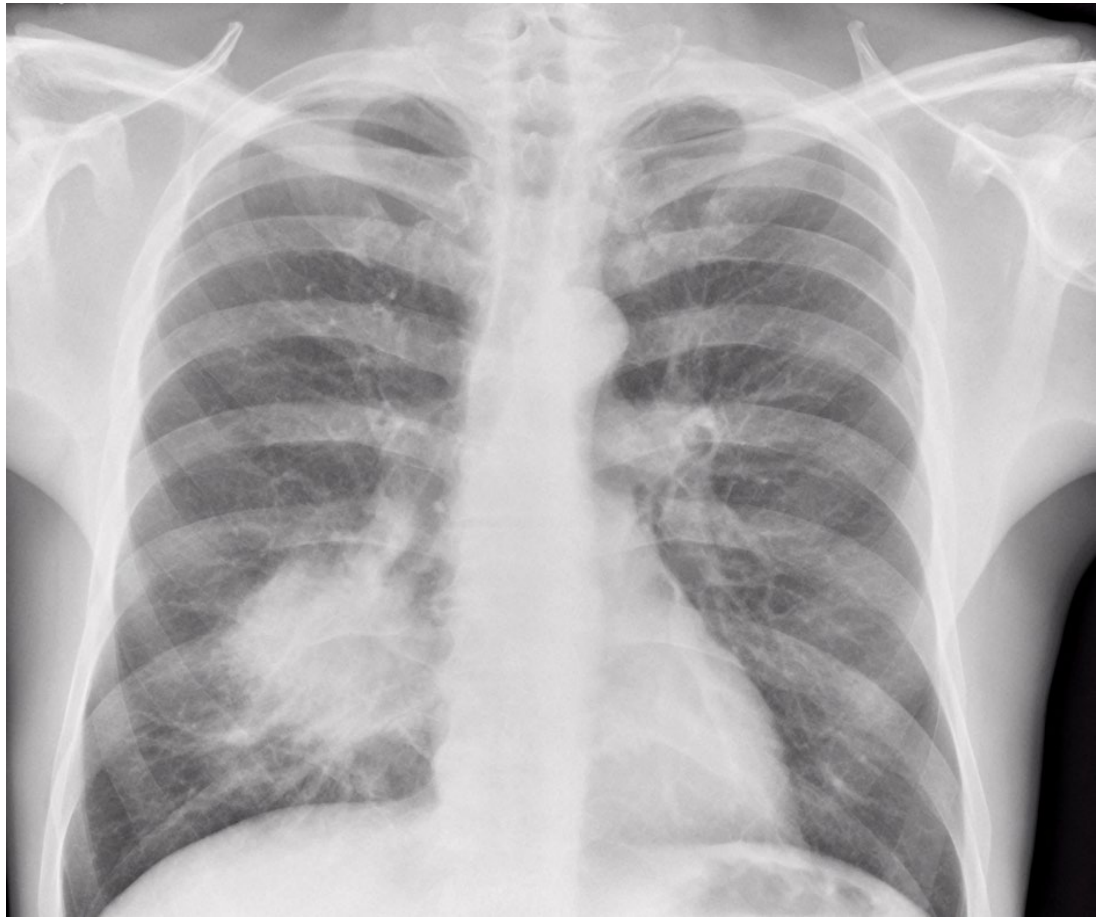
What further imaging do you want?

- CT: T, LS spine
- Chest radiograph

What lab work do you want?

- CBC, SPEP, FLRCR, serum Cr, extended ‘lytes, liver enzymes.
- U/A for blood

Helen Bighetty



IN SIXTY CANCER ACTION

Work-Up of Suspected LUNG CANCER

Timeline and Legend pg.5

RISK FACTORS:
1. Smokers, former smokers, second hand smoke exposure
2. History of COPD
3. Previous Cancer
4. History of TB, Silicosis;
5. Asbestos / radon / wood dust / silica exposure

PRACTICE POINTS: **All referrals sent within 24 hrs of visit.** Provide complete information as requested to avoid delays. Ensure patient and family is well informed and receives appointment information. If patient is in distress, offer referral to local counsellor.
See ***Supporting Information for Clinicians*** (pg 4) for contacts and resources.
Contact the **Cancer Question Helpline for Primary Care** for assistance.

Emergent
- Signs of superior vena cava obstruction (swelling of the face or neck with fixed elevation of jugular venous pressure, prominent veins on chest)
- Stridor
- Massive hemoptysis (more than 1 cup/250ml in 24 hrs)
- New neurological signs (suggestive of brain metastases or cord compression)

→ **Send to Emergency Department**
Thoracic Surgeon or Respirologist
On Call in Winnipeg or Brandon

Urgent
- Two or more episodes of hemoptysis (1 tblsp/15ml or more of clotted blood)
- Supraclavicular lymphadenopathy
- Incidental CT finding: any solid or ground glass nodule **greater than** 1cm

Order and refer in same day →
- **Referral to Diagnostic Specialist** (Thoracic Surgeon or Respirologist) → **Continue to Diagnostic pathway**
- **Order Infused CT Scan of Thorax ±Upper Abdomen**

Semi-Urgent

Immediate Chest X-Ray
- Unexplained single episode of hemoptsis
- Finger clubbing
- Suspicious cervical lymphadenopathy
- Features suggestive of paraneoplastic syndrome (unexplained hyponatremia, hypercalcemia, etc.)

Persistent Symptoms
Unexplained new symptoms lasting more than 3 weeks (OR sooner in patients with risk factors)
- Cough
- Chest +/or shoulder pain
- Loss of appetite / weight
- Unexplained changes in symptoms with chronic lung disease
- Hoarseness
- Dyspnea
- Dysphagia
- Abnormal chest signs

→ **Order Chest X-ray (PA & LAT)**
*Record history, exam, Diff DX & risk factors on Requisition (DI Lab)

- **Normal finding, but high clinical suspicion** → **Order Infused CT Scan of Thorax +/- Upper Abdomen** → **Continue to Diagnostic pathway**
- **Normal finding: low clinical suspicion**
Monitor and manage
- **Abnormal findings triggering suspicion CA:**
  - Single or multiple pulmonary nodules
  - Mediastinal orhilar lymphadenopathy
  - Unexplainable large unilateral pleural effusion
  - Infiltrate, consolidation or effusion attributed to pneumonia and not resolved in 6 week follow-up X-ray
- **Abnormal findings suggestive of Pneumonia**
Treat with antibiotics, repeat chest X-ray in 6 wks to confirm resolution

Non-Urgent
- Interstitial Lung Disease
- On CT: Any solid or ground glass nodule **less** than 1 cm

→ **Non-urgent referral**
Respirologist

In Sixty → Referrals/ Orders sent within 24 hrs of visit

In Sixty → CT Scan within 7 days of order

In Sixty → Diagnostic specialist appointment within 10 days after referral by primary care.

Suspicion Pathway Notes:

Sixty day suspicion to first treatment timeline begins on the date of patient visit when a high clinical suspicion of cancer triggers further cancer-focused investigation.
Only requisitions for patients who fit the red pathway should be noted as "urgent " to ensure urgent resources and timeline capacity can be maintained in next stages of the pathway.
Pathways are subject to clinical judgement and actual practice patterns may not always follow the proposed steps in this pathway.

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IN SIXTY CANCER ACTION

Diagnostic & Treatment Plan Pathway: LUNG CANCER

Timeline and Legend pg.5

PRACTICE POINT: All patients return to Diagnostic Specialist within 14 days of diagnostic appointment, unless referred to Palliative Care during initial diagnostic appointment.

PRACTICE POINT: Ensure patient is well informed and receives appointment information. Allow time for questions. Offer patients connections with psychosocial clinicians and cancer navigation services (see ***Supporting Information for Clinicians,*** pg 4.) Ensure the referring primary care provider is informed of results, direct referrals, and result discussion with patients.

First Patient Appointment with Diagnostic Specialist (Thoracic Surgeon or Respirologist)

- Patient seen and evaluated to establish a clinical diagnosis and stage
- Routine required testing (bloodwork, EKG, PFT)
- Ensure CT scan already done; if not done, order CT scan immediately

Choose the most appropriate diagnostic procedure customized for each Patient.
First Diagnostic/ Staging Procedure Menu:

- Bronchoscopy under local anesthesia*
- Bronchoscopy & Mediastinoscopy under general anesthesia*
- Needle Biopsy of Lung by radiologist*
- Endobronchial Ultrasound (EBUS)*
- PET Scan

*Pathology report

→ **All Test Results signed off & returned to diagnostic specialist** within 14 patient wait days* of diagnostic specialist visit.

→ **Positive for Cancer or high suspicion remains despite results**

→ **Patient Return Appointment to Diagnostic Specialist** (no later than 18 days after Diagnostic procedures appointment)

- Staging complete - Review results, formulate and communicate plan with patient:
- Book appropriate next step for the patient:
  1. Surgery
  2. Refer to CancerCare Manitoba Referral Office
  3. Further investigation
  4. Referral to surgeon
  5. Palliative Care Involvement: Consultation services and/ or program application

→ **Continue to Lung Cancer Treatment pathway**

→ **Negative for Cancer**

In Sixty: Diagnostic specialist appt. within 10 patient wait days after referral by primary care.

In Sixty: Diagnostic procedures and Pathology report back to specialist within 14 patient wait days. *7 days for procedure + 7 days for pathology

In Sixty: Follow-up appointment with diagnostic specialist within 4 patient wait days of pathology report.

Diagnostic Pathway Notes:

Sixty day suspicion to first treatment timeline begins on the date of patient visit when a high clinical suspicion of cancer triggers further cancer-focused investigation.
Only requisitions for patients who fit the red pathway should be noted as "urgent " to ensure urgent resources and timeline capacity can be maintained in next stages of the pathway.
Pathways are subject to clinical judgement . Patients may be moved on to next clinically appropriate step prior to "all" test results returned.

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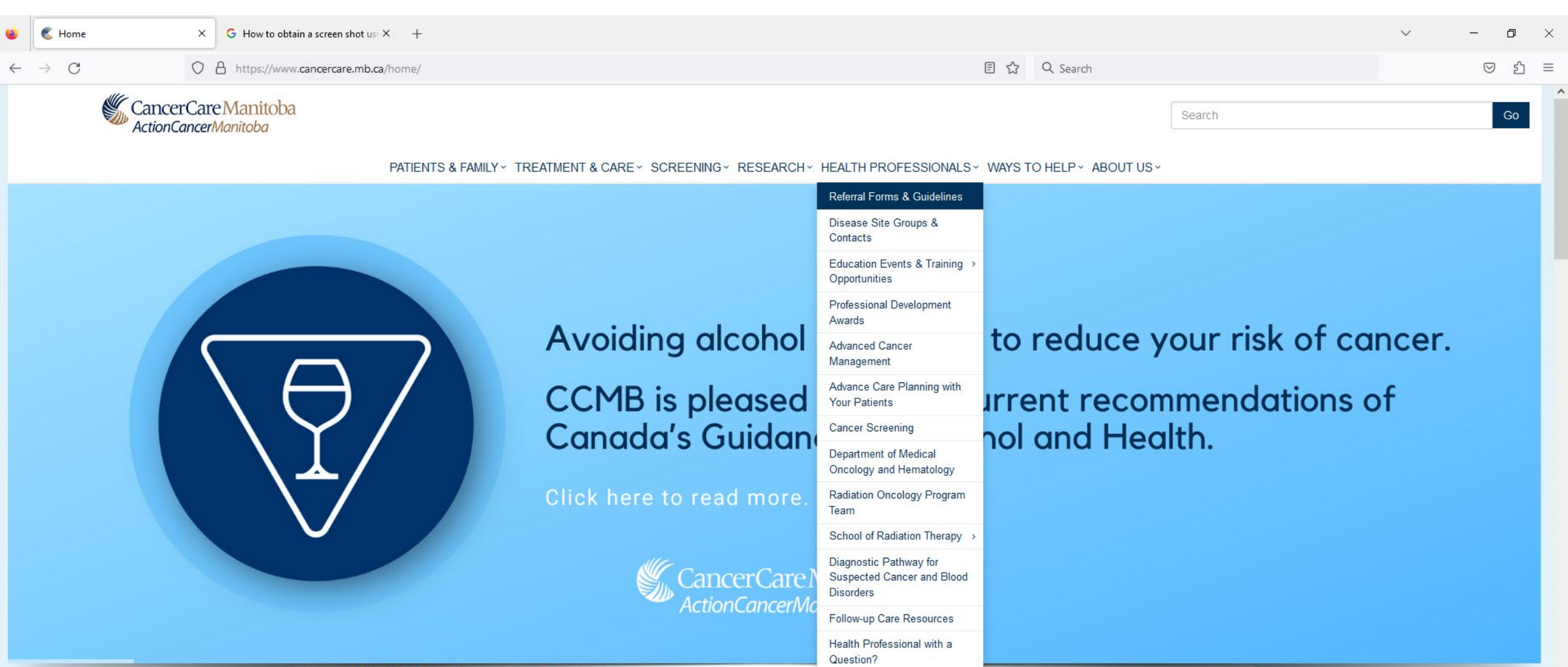

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Diagnostic Pathways for Suspected Cancer and Blood Disorders

CancerCare Manitoba specialists from Disease Site Groups have developed evidence-based guidelines for physicians. Information is updated so visit this page regularly. These pathways are intended to provide clinical guidance on the work-up of suspected cancer and to demonstrate the most effective and efficient way for patients to get to diagnosis and treatment or to have cancer ruled out.

Please click on a link to view guidance algorithms by Disease Site Group, as well as supporting information for clinicians such as contact phone numbers.

If you have questions regarding the work-up of suspected cancer or any other cancer-related questions, please contact:
Helpline for Healthcare Professionals
Monday to Friday
8:30 a.m. to 4:30 p.m.
Call or text 204-226-2262
Email: cancerquestion@cancercare.mb.ca

Current Suspect Pathways by Disease Site Group

- Breast Cancer
- Colon or Rectal Cancer
- Hematology
- Lung Cancer
- Lymphoma
- Neck Mass
- Prostate Cancer

Email: cancerquestion@cancercare.mb.ca

Current Suspect Pathways by Disease Site Group

Breast Cancer

Breast Cancer

- Click here for physician alert about ordering mammography and breast ultrasound
- View Breast Cancer Pathway – Work-up of Suspected Breast Cancer
- Diagnostic Specialist Resources for Suspected Breast Cancer
- Click here for the Manitoba Provincial Breast Imaging Consultation Request form (links to external Shared Health Manitoba website)
- Fine Needle Aspiration of a Palpable Breast Mass Instructional Video for Clinicians
- Breast Cancer Neoadjuvant Therapy Referrals

Colon or Rectal Cancer

Hematology

Lung Cancer

Lymphoma

Neck Mass

Prostate Cancer

For more information please contact:
CancerCare Manitoba
Phone: (204) 787-2197
Toll-free: 1-866-561-1026

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ACCREDITATION AGRÉMENT CANADA

IN SIXTY CANCER ACTION

Diagnostic Specialist Resources for Suspected Breast Cancer

Provincial Breast Imaging Requisition Form: fillable pdf- http://dsmanitoba.ca/wp-content/uploads/2015/01/CPJReqForm-Breast.pdf. Also available in Accuro, Jonoke & Med Access EMRs.

WINNIPEG BREAST IMAGING

Note: Churchill refers patients to Winnipeg for these services.

***Direct Referral:** Radiologists who perform diagnostic breast imaging (ultrasound or diagnostic mammography) will arrange for any required follow-up testing. (eg: image-guided biopsy) at Breast Health Centre.

Referrals for surgery: Breast Health Centre will arrange for surgical consultation based on recommendations from follow-up testing performed at that facility

Diagnostic Mammography		
Health Science Centre	Diagnostic mammography and needle localization	204-787-3558 (f) 204-787-3241 (p)
Radiology Consultants of Winnipeg	Diagnostic Mammography and breast ultrasound	204-944-8101 (f) 204-942-6453 (p)
Manitoba X-Ray	Diagnostic Mammography	204-831-0828 (f) 204-832-0273 (p)
Breast Ultrasound ± Biopsy		
Breast Health Centre	Ultrasound; ultrasound guided, stereotactic and hand-guided core biopsies; needle localizations	204-231-3839 (f) 204-235-3906 (p) 1-888-501-5219 (tf)
Radiology Consultants of Winnipeg	Breast ultrasound and diagnostic mammography	204-944-8101 (f) 204-942-6453 (p)
Biopsy		
Breast Health Centre Multi-disciplinary team of breast surgeons, radiologists, nurses, technologists, dietitians, counselors, lymphedema therapists and other experts who specialize in breast health.	Ultrasound guided, stereotactic and hand-guided core biopsies; needle localizations; Ultrasound **Recent (<1yr) diagnostic mammogram report must accompany referral in women 35 years of age or older.*	204-231-3839 (f) 204-235-3906 (p) 1-888-501-5219 (tf)

NORTHERN HEALTH REGION

***Direct Referral:** Radiologists who perform diagnostic breast imaging at Thompson General Hospital will arrange for any required follow-up testing (eg: image-guided biopsy) at the Breast Health Centre in Winnipeg (or other site, as per patient.)

Referrals for surgery are the responsibility of the Primary Care Provider
-**Exceptions**: Breast Health Centre will arrange for surgical consultation based on recommendations from follow-up testing performed at that facility

Mammography / Breast Ultrasound		
Thompson General Hospital	Refer out for core biopsies	204-667-5341 (f)

SOUTHERN HEALTH—SANTÉ SUD

***Direct Referral:** Radiologists who perform diagnostic breast imaging at Boundary Trails Health Centre will arrange for any required follow-up testing at the Boundary Trails Health Centre (ultrasound-guided core biopsy) or the Breast Health Centre in Winnipeg (stereotactic core biopsy.)

Referrals for surgery are the responsibility of the Primary Care Provider
-**Exceptions**: Breast Health Centre will arrange for surgical consultation based on recommendations from follow-up testing performed at that facility.

Mammography / Breast Ultrasound / Biopsy		
Boundary Trails Health Centre	Mammography, breast ultrasound, ultrasound-guided core biopsies and needle localizations.	204-331-8812 (f)

PRAIRIE MOUNTAIN HEALTH

***Direct Referral:** Radiologists who perform diagnostic breast imaging at the Brandon Regional Health Centre will arrange for any required follow-up testing (eg: image-guided biopsy) at that location.

Referrals for surgery are the responsibility of the Primary Care Provider.

Mammography / Breast Ultrasound / Biopsy		
Brandon Regional Health Centre	Mammography, breast ultrasound, ultrasound-guided core biopsies, stereotactic biopsies, needle-guided core biopsies, needle localizations, breast MRI & MR-guided biopsies.	204-578-4986 (f)

From Suspicion of Cancer to Treatment In Sixty Days

For Review: IN60_BCS_2015-07-13

Email: cancerquestion@cancercare.mb.ca

Current Suspect Pathways by Disease Site Group

Breast Cancer

Breast Cancer

- Click here for physician alert about ordering mammography and breast ultrasound
- View Breast Cancer Pathway – Work-up of Suspected Breast Cancer
- Diagnostic Specialist Resources for Suspected Breast Cancer
- Click here for the Manitoba Provincial Breast Imaging Consultation Request form (links to external Shared Health Manitoba website)
- Fine Needle Aspiration of a Palpable Breast Mass Instructional Video for Clinicians
- Breast Cancer Neoadjuvant Therapy Referrals

Colon or Rectal Cancer

Hematology

Lung Cancer

Lymphoma

Neck Mass

Prostate Cancer

For more information please contact:
CancerCare Manitoba
Phone: (204) 787-2197
Toll-free: 1-866-561-1026

ACCREDITED WITH EXEMPLARY STANDING
ACCREDITATION AGRÉMENT CANADA

IN SIXTY CANCER ACTION

Work-Up of Suspected BREAST CANCER

Timeline and Legend pg.6

RISK FACTORS: Family history suggestive of hereditary breast cancer.

LOW RISK FEATURES: 1. Diffuse nodularity, no discrete lump; 2. Mastalgia (unilateral or bilateral) without a discrete lump; 3. Nipple Discharge is not bloody or bilateral or not spontaneous

- May refer to a specialist on a non-urgent basis, if necessary. Consider non-urgent diagnostic mammogram

***DIRECT REFERRAL:** As of Feb. 2, 2015, Radiologists who perform diagnostic breast imaging (u/s or diagnostic mammography) will arrange for any required follow-up testing. (eg: image-guided biopsy)

PRACTICE POINTS: **All referrals sent within 24 hrs of visit.** Provide complete information as requested to avoid delays. Ensure patient and family is well informed and receives appointment information. If patient is in distress, offer referral to local counsellor, Nurse Navigator or call the The Breast Cancer Patient & Family Educator at the Breast Cancer Centre of Hope (pg.4.) See ***Supporting Information for Clinicians*** (pg 4-5) for contacts and resources. Contact the **Cancer Question Helpline for Primary Care** for assistance.

Urgent
Obvious extensive breast cancer
- large, fixed mass with skin changes +/- axillary lymph nodes

*for help with symptom management, call the WRHA Palliative Care MD on call
*for wound care, consult Home Care

→ **Send Referral to Diagnostic Specialist for Biopsy**
Surgeon or Breast Radiologist → **Continue to Breast Cancer Treatment pathway**

Urgent
Screening Site reports mammogram as suspicious for cancer with biopsy recommended and direct refers patient to biopsy
- Primary Care receives report and confirmation of biopsy appointment.
- Primary Care contacts patient and discloses results and explains next steps.

→ **Suspicious Result triggers Direct Referral to Diagnostic Specialist for Biopsy from Screening Mammogram** (BreastCheck or Private clinic) →

Urgent
Mastitis not resolving with 1 course of antibiotics.

Urgent
Unilateral Nipple changes*
- distortion
- bloody discharge
- dermatitis-like rash limited to the nipple, not responding to 2 weeks of topical steroid

Urgent
Breast Lump
- discrete, palpable, firm

→ **Age 35 + Older**: Order bilateral diagnostic mammogram
→ **Age Under 35**: Order Breast Ultrasound

- Arranged by FP/NP not the patient
- Fill out Provincial Requisition completely to avoid delays
- imaging site managing direct referral for biopsy

→ **Suspicious Results triggers Direct Referral to Diagnostic Specialist** for Ultrasound-guided Core Biopsy or Stereotactic Biopsy →

Little or no fluid; lump persists

Consider immediate FNA
Attempt to aspirate fluid with fine needle (Cytology not required)
<view online video demo>

→ Fluid removed; lump disappears → Re-examine in 4-6 weeks consider non-urgent diagnostic mammogram

In Sixty All referrals / orders sent within 24 hrs of visit

In Sixty Diagnostic Specialist appointment within 14 patient wait days of referral.

Suspicion Pathway Notes: *Unilateral nipple changes merit surgical referral even if mammogram normal.

Sixty day suspicion to first treatment timeline begins on the date of patient visit when a clinical suspicion of cancer triggers further cancer-focused investigation.
Only requisitions for patients who fit the red pathway should be noted as "urgent " to ensure urgent resources and timeline capacity can be maintained in next stages of the pathway. Pathways are subject to clinical judgement and actual practice patterns may not always follow the proposed steps in this pathway.

IN60_BCS_2015-03-04

IN SIXTY CANCER ACTION

Diagnostic & Treatment Plan Pathway: BREAST CANCER

Timeline and Legend pg.6

PRACTICE POINTS: Ensure patient is well informed and receives appointment information. Offer patients connections with psychosocial clinicians and cancer navigation services (See ***Supporting Information for Clinicians,*** pg 4-5.) Ensure the referring primary care provider is informed of results, direct referrals, and result discussions with patient.

Patient Appointment with Diagnostic Specialist (Surgeon, Radiologist)

Clinical exam and assessment with supplemental imaging (at consultant's discretion).

Choose appropriate diagnostic steps:
Surgery (skip to Treatment pathway, pg.3)
Ultrasound with Core Biopsy
Stereotactic Biopsy
Unguided Core Biopsy/FNA
Punch Biopsy
Incisional Biopsy
Excisional Biopsy

→ **All Test Results signed off and returned to *Original* referrer (and Primary Care Provider, if different) and diagnostic specialist** within 7 patient wait days of biopsy appointment.

→ **Positive for Cancer or Atypia or high suspicion remains despite results**

→
- Primary Care reviews pathology results, formulates / communicates plan with patient:
- Surgeon (via Direct Referral from Breast Health Centre Radiologist) or Primary Care refers to the most appropriate next step for the patient:

1. Surgical consult within 7 days of pathology sign-off
2. Advanced disease, Medical /Radiation Oncology consult within 14 days (if needed)
3. Referral to Palliative Care.

→ **Continue to Breast Cancer Treatment pathway**

→ **Negative for Cancer or normal results consistent with clinical impression**

→
- Send back to Primary Care Provider to inform patient of results.

In Sixty → Diagnostic Specialist appointment within 14 patient wait days of referral.

In Sixty → Pathology complete within 7 days of biopsy.

In Sixty → Surgical consult within 7 patient wait days of Pathology.

Diagnostic Pathway Notes:

Sixty day suspicion to first treatment timeline begins on the date of patient visit when a clinical suspicion of cancer triggers further cancer-focused investigation.
Only requisitions for patients who fit the red pathway should be noted as "urgent " to ensure urgent resources and timeline capacity can be maintained in next stages of the pathway.
Pathways are subject to clinical judgement . Patients may be moved on to next clinically appropriate step prior to "all" test results returned.

Suspicious?

- DVT/PE
- Lymphadenopathy
- Cutaneous signs of malignancy
- B-symptoms

Pretest probability of deep vein thrombosis (Wells score)

Clinical feature	Score
Active cancer (treatment ongoing or within the previous six months or palliative)	1
Paralysis, paresis, or recent plaster immobilization of the lower extremities	1
Recently bedridden for more than three days or major surgery, within four weeks	1
Localized tenderness along the distribution of the deep venous system	1
Entire leg swollen	1
Calf swelling by more than 3 cm when compared to the asymptomatic leg (measured below tibial tuberosity)	1
Pitting edema (greater in the symptomatic leg)	1
Collateral superficial veins (nonvaricose)	1
Alternative diagnosis as likely or more likely than that of deep venous thrombosis	-2
Score	
High probability	3 or greater
Moderate probability	1 or 2
Low probability	0 or less
Modification:	
This clinical model has been modified to take one other clinical feature into account: a previously documented deep vein thrombosis (DVT) is given the score of 1. Using this modified scoring system, DVT is either likely or unlikely, as follows:	
DVT likely	2 or greater
DVT unlikely	1 or less

Adapted from:

1. *Wells PS, Anderson DR, Bormanis J, et al. Value of assessment of pretest probability of deep-vein thrombosis in clinical management. Lancet 1997; 350:1795*
2. *Wells PS, Anderson,DR, Rodger M, et al. Evaluation of D-dimer in the diagnosis of suspected deep-vein thrombosis. N Engl J Med 2003; 349:1227.*

DVT/PE – work up for malignancy?

- No benefit from working a patient up for an occult cancer in the setting of a provoked DVT
- A limited work up for occult malignancy is justified in patients presenting with an unprovoked first DVT/PE

DVT/PE – work up for malignancy?

Limited — The components of a limited testing strategy in patients with a first episode of uncomplicated unprovoked VTE include the following:

- A complete history for the signs and symptoms of malignancy
- A thorough physical examination, including digital rectal examination, testing for fecal occult blood, and pelvic examination in women
- Basic laboratory testing including complete blood count (CBC) and smear, ESR, urinalysis, electrolytes, calcium, creatinine, and liver function tests
- Routine age-appropriate cancer screening
- Chest radiograph

DVT/PE – work up for malignancy?

- In patients who present with an unprovoked first DVT/PE and are at higher risk for having an occult malignancy, a more extensive work up is suggested
- Investigations are frequently symptom-directed. They may include but are not limited to the following:
- All the components of a limited strategy
- A chest, abdominal, and pelvic CT scan
- Tumor markers (carcinoembryonic antigen, alpha-fetoprotein, CA 19-9, CA 125, PSA)
- Mammography and a Papanicolaou smear in women
- Upper and lower gastrointestinal tract evaluation (eg, endoscopy or CT colonography)

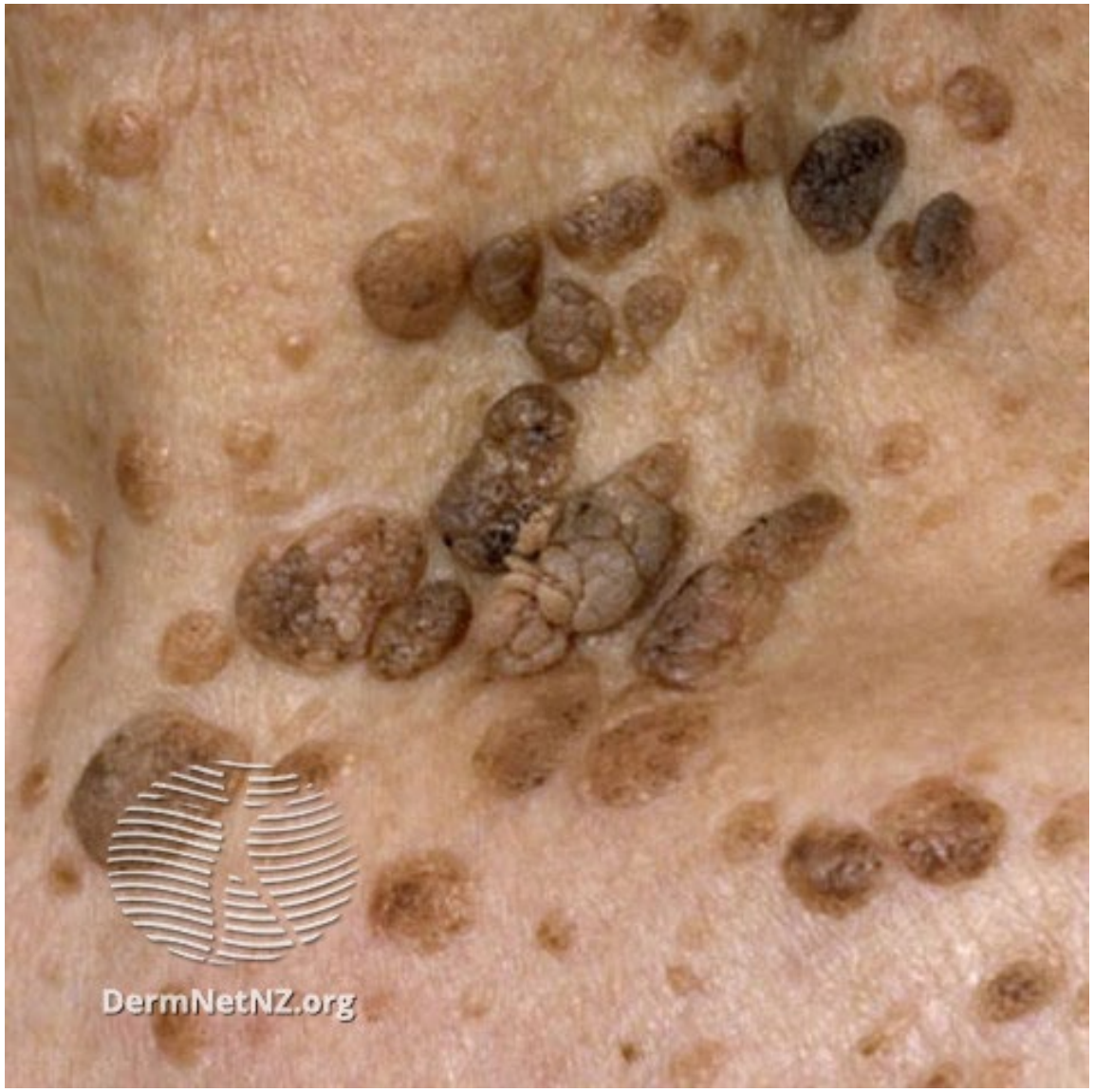
UpToDate: Evaluating adult patients with established venous thromboembolism for acquired and inherited risk factors

Cutaneous Disorders Associated with Cancer

Sign of Leser-Trélat

- Multiple seborrheic keratoses
- often pruritic
- associated with internal malignancies, esp. GI adenocarcinomas:
- Gastric
- Liver
- Colorectal
- Pancreatic

Sign of Leser- Trelat



https://dermnetnz.org/topics/sign-of-leser-trelat

Cutaneous Disorders Associated with Cancer

Acanthosis Nigricans

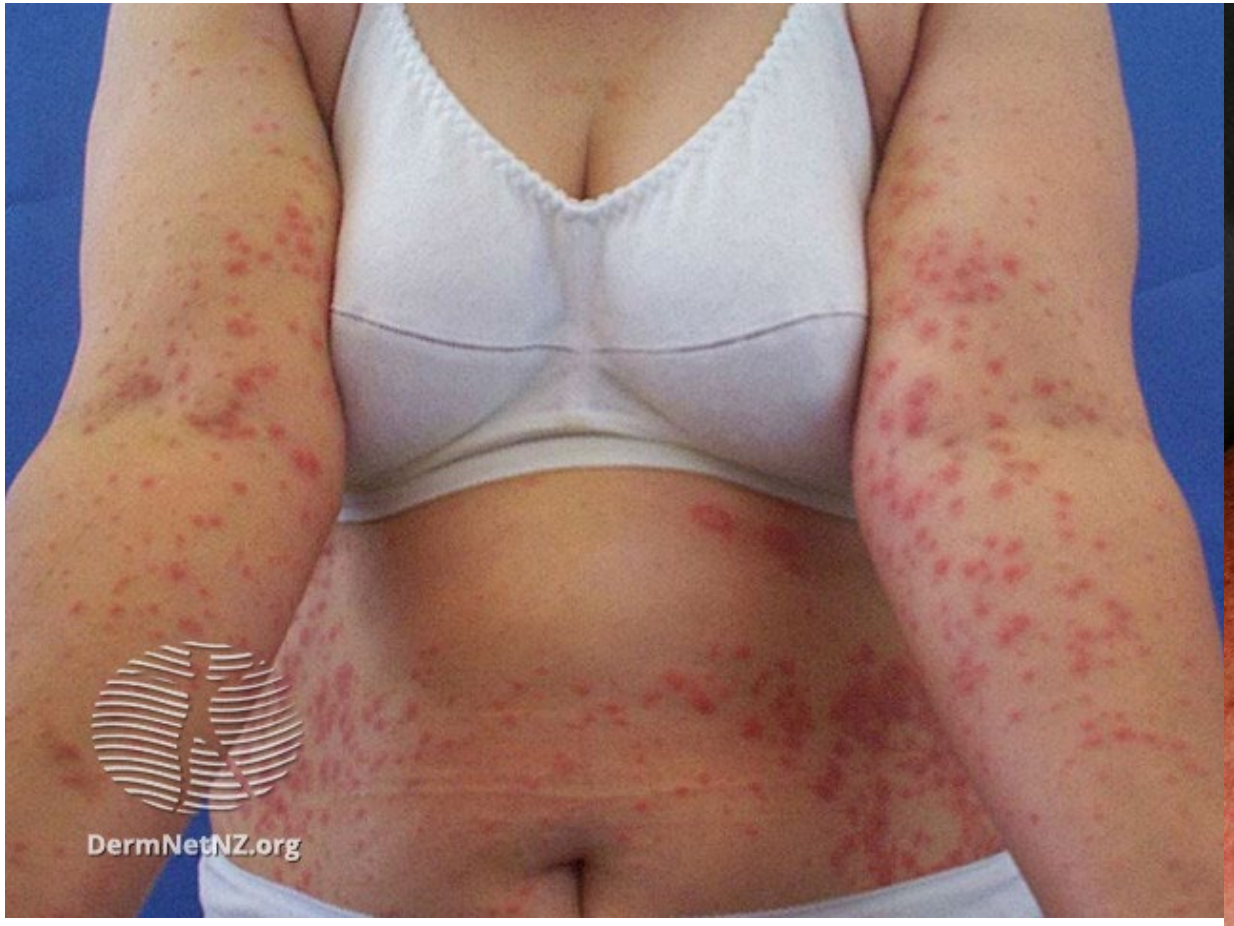
- Hyperkeratotic
- Velvety
- Darkly pigmented plaques
- **Benign** etiology most common (insulin resistance, obesity)
- Younger age of onset
- Confined to flexural creases (neck, axillae, groins)
- **Malignant** AN more rapidly progressive
- More extensive - mucosal membranes, palms & soles
- elderly
- Gastric Ca (+ other intraabdominal)

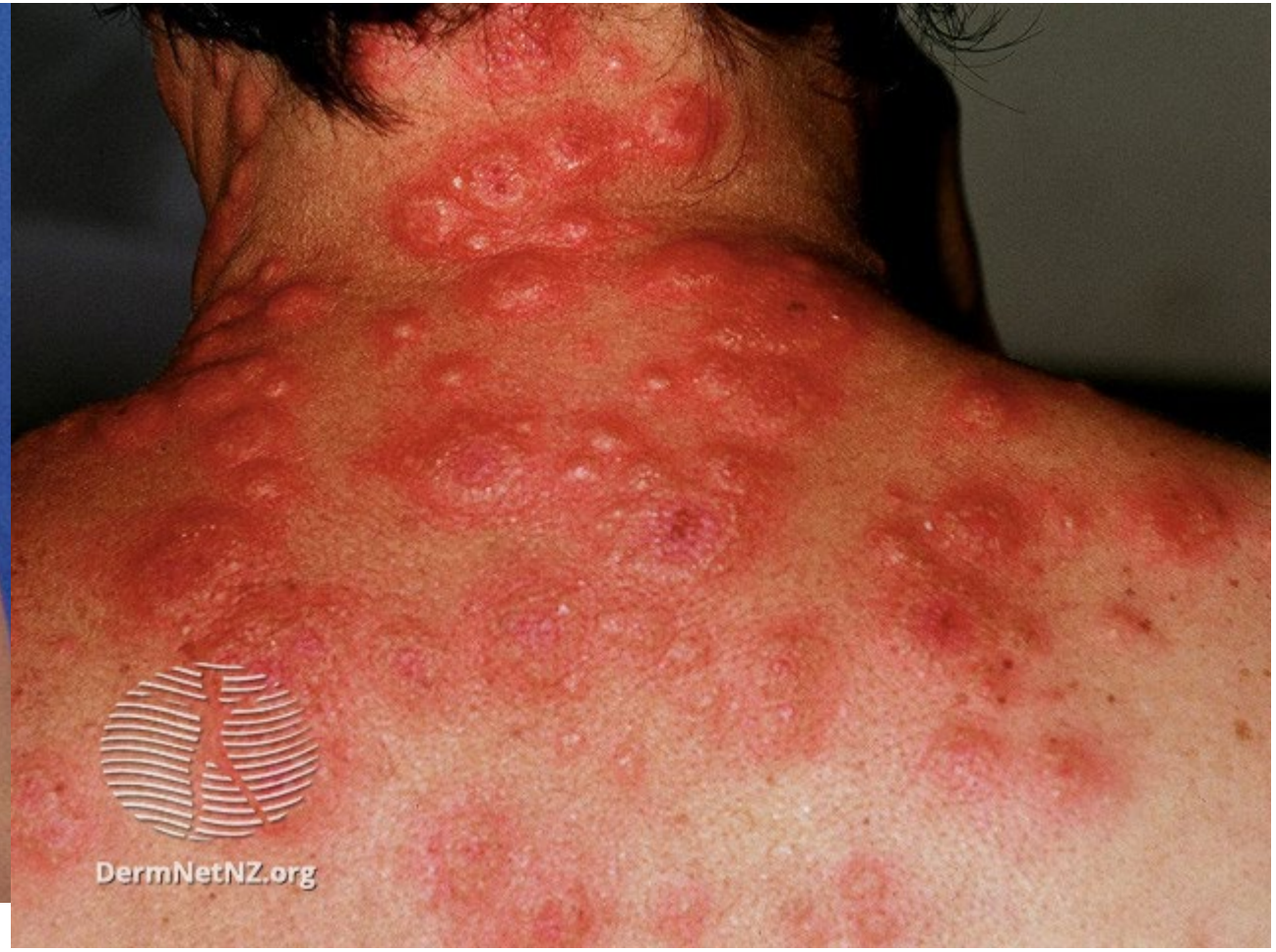
Acanthosis Nigricans

https://dermnetnz.org/images/acanthosis-nigricans-images

Cutaneous Disorders Associated with Cancer

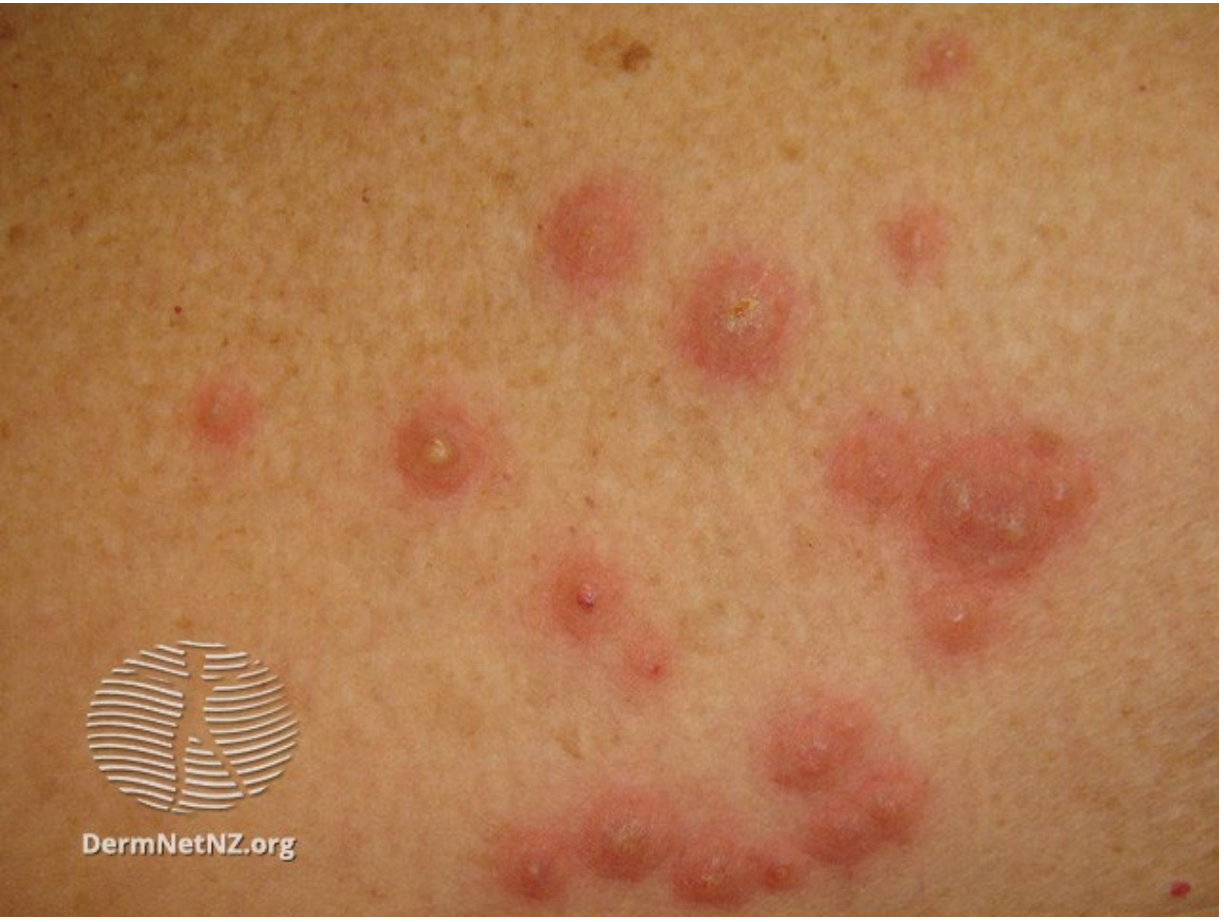
Sweet Syndrome

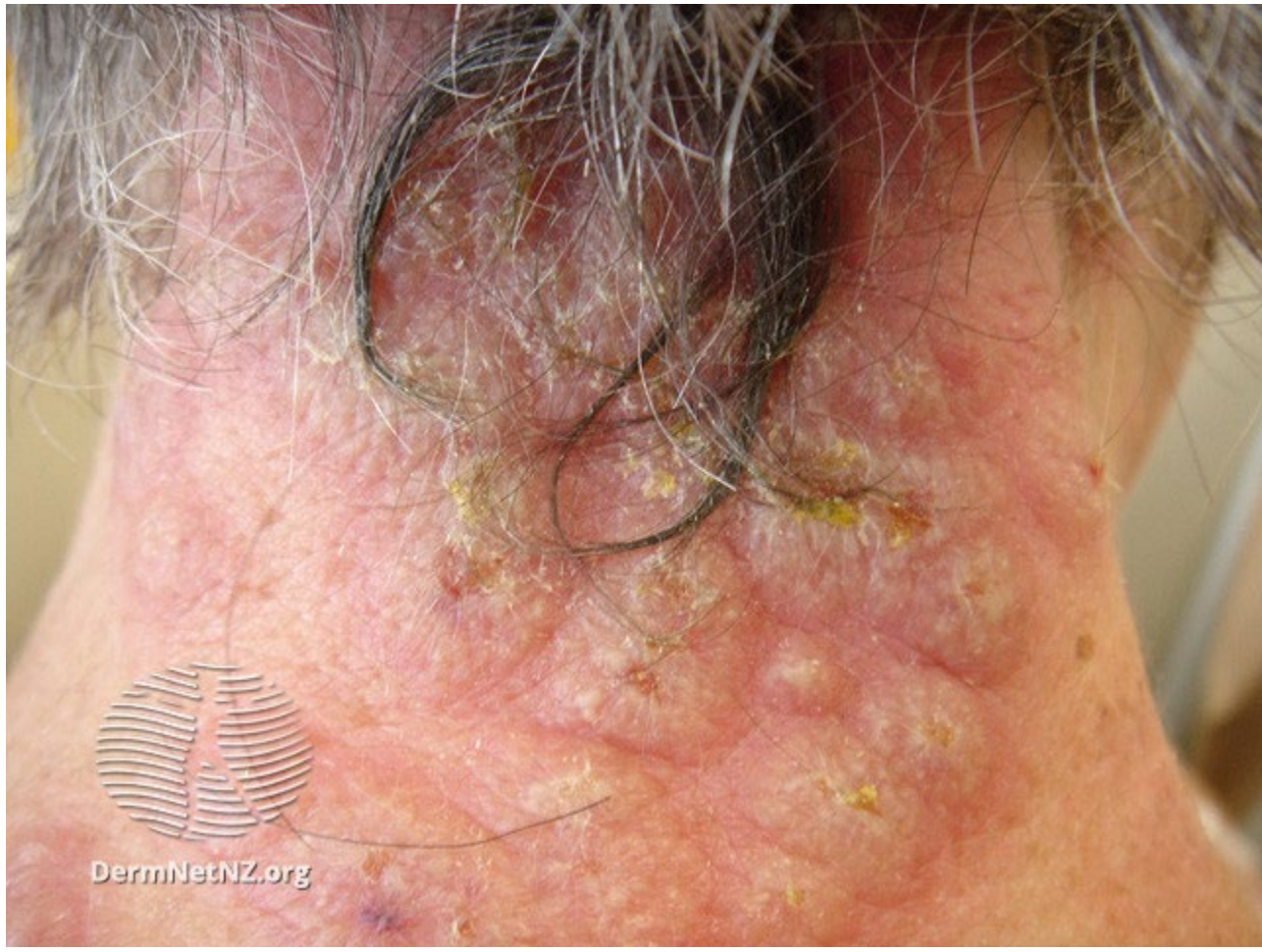




Cutaneous Disorders Associated with Cancer

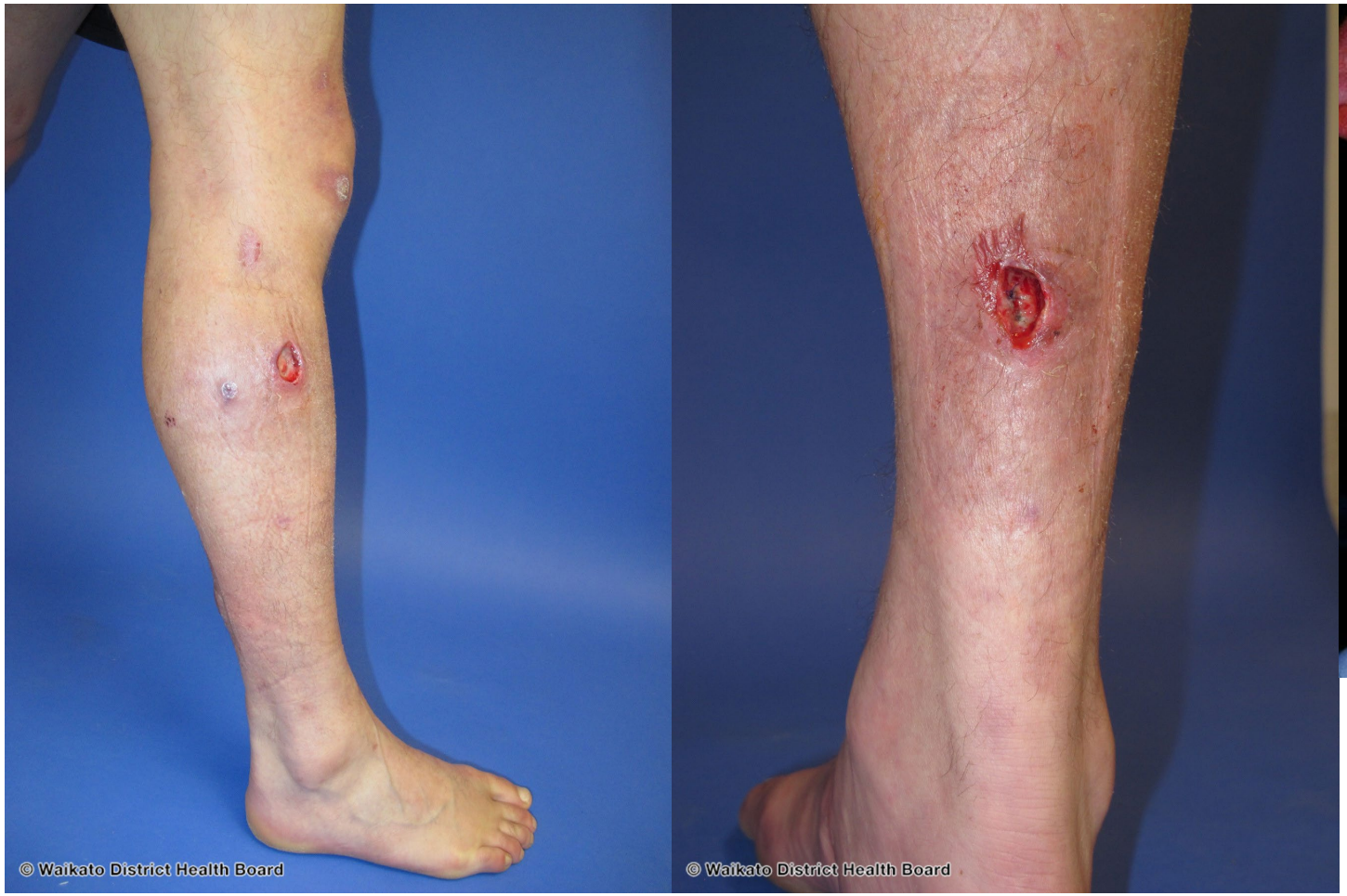
Sweet Syndrome

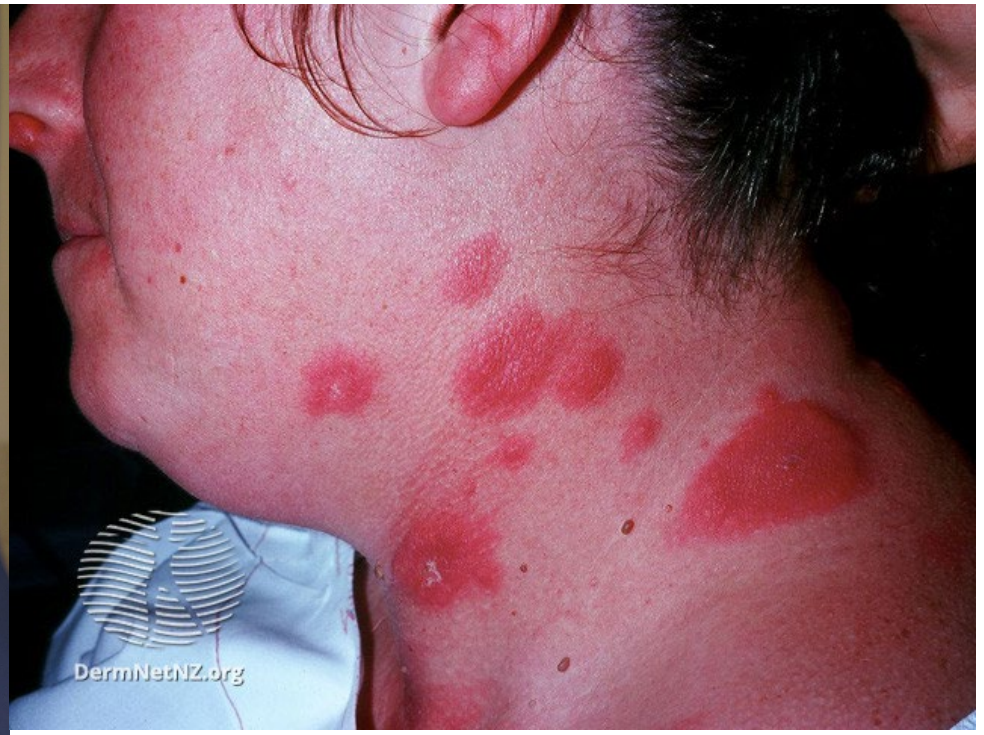




Cutaneous Disorders Associated with Cancer

Sweet Syndrome





https://dermnetnz.org/topics/acute-febrile-neutrophilic-dermatosis