

Screening for Medical Problems in the Upper Extremity



Catherine C. Goodman, PT, MBA, CBP

1

Course Objectives

- . Identify Signs and Symptoms of Systemic Origin Affecting the Upper Extremity/Upper Quadrant
- . Use the 5-step screening model for referral
- . Name the three of the five elements of a 5-minute screening

Basic Premise:

- . Systemic diseases can mimic neuromusculoskeletal (NMS) dysfunction
- . It is the PT's responsibility to identify what NMS pathology is present
- . We call this the impairment classification
- . This step requires us to rule out the possibility of systemic disease

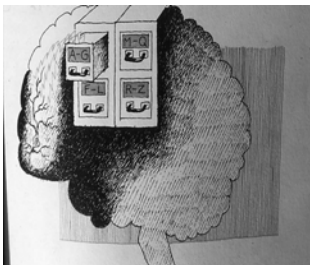
3

Screening in 3-to-5 minutes

- . Take vital signs
- . Use the word 'symptom(s)' rather than 'pain' during the interview
- . Watch for red flag histories, signs, and symptoms
- . Review medications; consult with pharmacist
- . Ask a final all encompassing question

4

Goodman/Snyder Screening Model



- . Past Medical History
 - ⌚ Personal/family history
- . Risk Factor Assessment
- . Clinical Presentation
 - ⌚ Pain type/pain patterns
- . Associated Signs and Symptoms
- . Review of Systems

5

History

- ⌚ Age over 40
- ⌚ Personal or family history of cancer
- ⌚ No known cause, unknown etiology, insidious onset
- ⌚ Recent infection (mono, URI, UTI, viral such as measles, hepatitis)
- ⌚ Recurrent colds/flu with cyclical pattern
- ⌚ Recent report of confusion or increased confusion ... could be drug-induced (e.g., NSAIDs), post-op: fat embolism

6

Any adult over age 65 presenting with shoulder pain/dysfunction

Must be screened for medical disease even if there is a known or attributed cause or injury

Even when there's a known cause ~ especially in the older adult



COWBOY DRIVING RANGE



Age and multiple comorbidities



9

Lifetime Risk of Cancer

(and pretty much everything else...)



"You're fifty-seven years old. I'd like to get that down a bit."

Incidence of cancer increases with increasing age

- Risk Factor: age over 40
- Risk increases rapidly for age over 50

10

Red Flags: History



- Insidious Onset
- Is it really?

11

Etiology of injury or impairment

- The client may wrongly attribute onset of symptoms to an activity
- The alert therapist may recognize a causative factor

12

Extrinsic Trauma



- Motor Vehicle Accident
 - Can lead to intrinsic trauma
 - Can be the result of assault or domestic violence
- Assault, Accident or Injury?

Definition of Assault

- Any physical, sexual, or psychologic attack.
 - Includes verbal, emotional, economic abuse
- Many people who have been physically struck, pushed, or kicked do not consider the action an assault
- This is especially true if caused by someone they know
- Use some other word besides "assault"

Watch out for:



- Women with disabilities
- History of fractures
- 30% of woman at fracture clinics have a history of intimate partner violence

Watch out for:



- Chronic pain patients
 - >50% report physical and/or sexual abuse history (men and women)
 - Daily headache associated
 - Previous history of many injuries and accidents (including multiple motor vehicle accidents)

Be on the look out for:



- Somatic disorders
 - Injury seems inconsistent with pt's explanation
 - Injury takes much longer to heal than expected
- Pelvic floor problems
 - Incontinence
 - Infertility
 - Pain

Warning Signs of Elder Abuse



- Multiple trips to the ER
- Depression
- "Falls"/Fractures
- Bruising/suspicious sores
- Malnutrition/weight loss
- Pressure ulcers
- Changing physicians/PTs often
- Confusion attributed to dementia

Possible Questions

- . Were you hit, kicked, choked, or pushed?

- . Is there anything else you would like to tell me about your situation?

- . I'm concerned that your symptoms may have been caused by someone hurting you. Has anyone been hurting you in any way?

Screening Questions

- . Partner abuse is very common today. I now ask every woman in my practice about violence in their lives.

- . Many people are in abusive relationships but are afraid to say so. We ask everyone about this now.

- . Follow-up question:
 - ⊆ Has this ever happened to you?

Indirect Questions

- . I see you have a bruise here. It looks like it's healing well. How did it happen?

- . Are you having problems with your partner?
 - ⊆ Have you ever gotten hurt in a fight?

- . You seem concerned about your partner. Can you tell me more about that?

- . Does your partner keep you from coming to therapy or seeing family and friends?

APTA Domestic Violence publication, 1997

Follow-up Questions

- . Patient denies abuse
 - ⊆ Response: I know sometimes people are afraid or embarrassed to say they've been hit. If you are ever hurt by anyone, it's safe to tell me about it.

- . Patient is offended
 - ⊆ I'm sorry to offend you. Many patients need help but are afraid to ask.

- . Patient says 'Yes'
 - ⊆ Listen, believe, document if possible. See documentation guidelines.
 - ⊆ Provide information about local resources.

Risk Factor Assessment

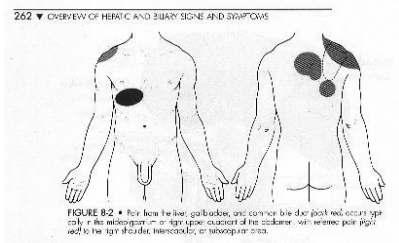
- . New direction in PT/health care

- . Know sex-based diseases and differences

- . Past Medical History

- . Osteoporosis, diabetes, hypertension

Case Example: Gallstones

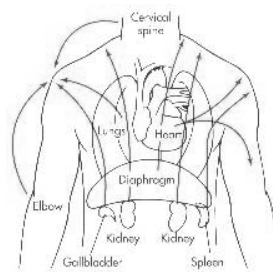


Case Example: Risk Factors

- History: Risk Factors ~ 5Fs
 - Age: Increasing incidence with increasing age
 - Sex (female)
 - Obesity
 - Diabetes Mellitus
- Clinical Presentation: Mid-upper back, below or between scapulae
- Associated S&S: Recurrent nausea, flatulence, food intolerances

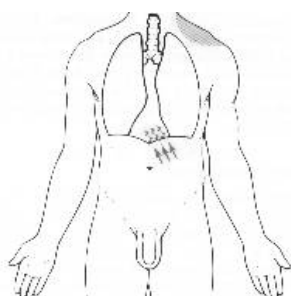
25

Systemic Causes of Shoulder Pain



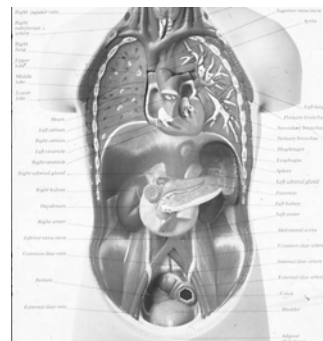
- See Tables in chapter 18
- Shoulder pain can be referred from:
 - Neck
 - Chest
 - Abdomen

Diaphragmatic Irritation



- Irritation of the peritoneal (outside) or pleural (inside) surface of the diaphragm refers sharp pain
- Central portion = upper trapezius, neck, supraclavicular fossa
- Peripheral portion = costal margins and lumbar region
- Pain is ipsilateral to area of irritation

Direct Pressure and Shared Pathways!

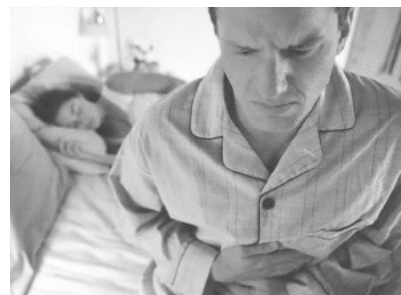


Clinical Presentation: Usually Starting with Pain as the Primary Symptom



29

But Don't Forget to Ask About "Other Symptoms"



Shoulder Pain Patterns



Shoulder pain is difficult to diagnose because any pain felt in the shoulder will affect the joint as though the pain was originating in the joint.

[Mennell 1964]

Pain Pattern/Pain Type

- Gradual, progressive, or cyclical presentation of symptoms (worse/better/worse)
- Unrelieved by rest or change in position; no position is comfortable
- If relieved by rest, positional change, or application of heat, in time, these relieving factors no longer reduce symptoms

32

Pain pattern/type cont

- Symptoms out of proportion to the injury
- Symptoms persist beyond expected time
- Unable to alter (provoke, reproduce, alleviate, eliminate, aggravate) the sx during exam
- Does not fit the expected mechanical or neuromusculoskeletal pattern
- No discernible pattern of symptoms
- Physical therapy intervention does not change the clinical picture
 - Client may get worse!

33

Pain pattern cont.

- Night pain
- Bone pain
- Symptoms (especially pain) that are constant and intense
- Pain described as knifelike, boring, deep aching
- Pattern of coming and going like spasms

34

Constant Pain



If the client reports the pain is “constant”

What should your next question be?

35

3 Other Red Flags

- Symptoms out of proportion to the injury
- Symptoms persist beyond expected time
- No position is comfortable

Consider cancer and domestic violence first before malingering

36

Associated Signs and Symptoms

- Presence of constitutional symptoms
- Bilateral symptoms
- Proximal muscle weakness, especially if accompanied by change in DTRs
- Change in muscle tone or ROM for individuals with neurologic condition
- Joint pain with skin rashes, nodules
- Any cluster of Signs and Symptoms observed during the Review of Systems that are characteristic of a particular organ system

37

Bilateral Symptoms



- Pigmentation changes
- Edema
- Rash
- Clubbing/nail bed changes
- Weakness
- Numbness/tingling
- Burning

38

Constitutional Symptoms

- | | |
|----------------|---------------------|
| · Fever | · Nausea |
| · Diaphoresis | · Vomiting |
| · Night sweats | · Diarrhea |
| · Pallor | · Dizziness/syncope |
| · Fatigue | · Weight loss |

39

Red Flag: Vital Signs



- Always take temperature with back pain of unknown cause

[Cyriax]

40

Red Flag: Vital Signs



- Always take BP with:
 - Neck
 - Upper quadrant
 - Thoracic Outlet Syndrome (TOS)

41

Red Flag: Vital Signs

- Correlate unusual vital signs with other signs & symptoms:
 - Pallor
 - Perspiration
 - Fatigue
 - Palpitations

42

Keep in the back of your mind:

Extrinsic Trauma



- . Motor Vehicle Accident
 - z Can lead to intrinsic trauma
 - z Can be the result of assault or domestic violence

- . Assault, Accident or Injury?

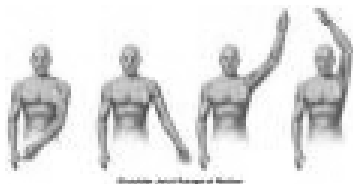
Let's turn this around for clinical use:



- . Which shoulder is it?
- . Which organs could it be?
- . What are the assoc. S&Sx of that organ
- . What's the history?
- . Can you palpate or reproduce it?

Shoulder Pain Pattern

- . Shoulder pain with any of the following features should be approached as a manifestation of systemic visceral illness:
 - z Pleuritic component
 - z Exacerbation by recumbency
 - z Coincident diaphoresis (cardiac)
 - z Assoc. GI S & Sx
 - z Exacerbation by exertion unrelated to shoulder movement (cardiac)
 - z Assoc. urologic S & Sx




This is true even if the pain is exacerbated by shoulder movement or if there are objective findings at the shoulder [Hadler 1987].

Screening Clues: Shoulder

- . Lack of improvement after treatment, including trigger point therapy


- . Left shoulder pain within 24 hours of abdominal injury or trauma (Kehr's sign: ruptured spleen)
 - z Inpatients and outpatients



Case Example

Missoula Maggots
(rugby player)

Carpal Tunnel Syndrome




See Table:
• Causes of CTS

Carpal Tunnel Syndrome

- Ask about similar sx in the feet
- History:
 - Alcoholism, cirrhosis, previous cancer
 - Other liver disease
 - Statins (cholesterol lowering drugs ~ Zocor, Lipitor, Crestor*)
- Ask about GI signs and symptoms
- Test for signs of liver disease

Case Example



- 52 y.o. male, OTR trucker
- Hostile, verbally abusive
- Bilateral CTS
- Referred by specialist (hand surgeon)
- History of alcohol use/abuse
- Physical signs of liver impairment
- Later medical diagnosis: Liver cancer

Carpal Tunnel Syndrome

- Protein (food) and gut-derived (GI bleed) toxins are normally taken up and detoxified by the liver.
- Ammonia from the intestine (produced by protein breakdown) is normally transformed by the liver to urea, glutamine, and asparagine.
- These are then excreted by the renal system.

Hepatocyte Impairment

- Liver impairment results in increased serum ammonia and urea levels. When these toxins are no longer absorbed into the portal vein and removed from the body, they pass directly to the brain.
- Ammonia transported to the brain reacts with glutamate (excitatory neurotransmitter) producing glutamine.
- The reduction of brain glutamate impairs neurotransmission. This lead to altered CNS metabolism and function.

CTS misinterpreted

- As blood ammonia levels rise, many unusual compounds (e.g., octopamine) form and serve as false neurotransmitters in the CNS.
- Asterixis (liver flap) and numbness/tingling occur as a result of this ammonia abnormality causing intrinsic nerve pathology.
- This is misinterpreted as CTS.

Other Signs of Liver Disease

- Liver Flap
- Nail beds
- Liver Palms
- Angiomas

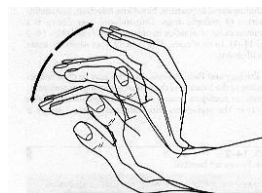


Figure 29-4. Opaque white nails of Terry in a patient with cirrhosis.

Terry's Nails

- Malnutrition
- Diabetes Mellitus
- Hyperthyroidism
- Idiopathic
- Trauma

Palmer Erythema ~ Liver Palms

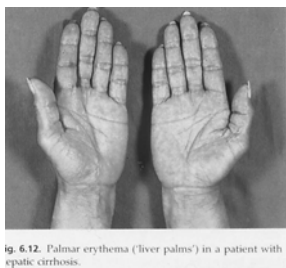
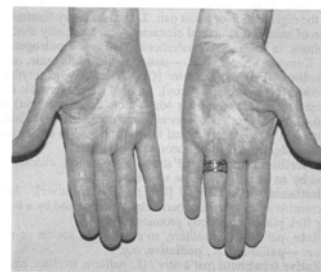


Fig. 6-12. Palmar erythema ('liver palms') in a patient with hepatic cirrhosis.

- Also common in RA and pregnancy
- Does not go away during remission of RA
- Goes away after pregnancy

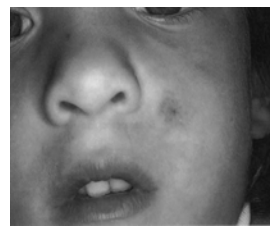


Palmar erythema
Bates Textbook of Medicine, 12th ed., p. 1000



Figure 29-1. Spider angioma on the forehead.

Spider Angioma



- . Face, neck, chest
- . Flat or raised
- . Cause: may be normal
- . Estrogen-based: pregnancy, chronic liver disease, estrogen therapy

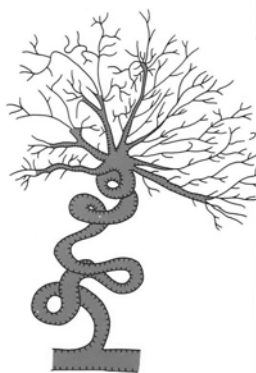


Fig. 6.11. Schematic diagram of an arterial spider.

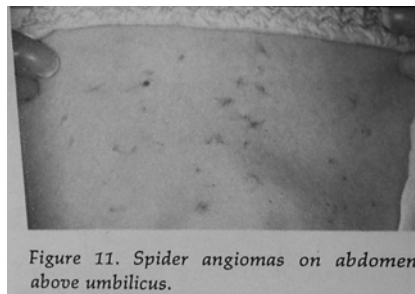


Figure 11. Spider angiomas on abdomen above umbilicus.

Is it Cancer?

Is it Cancer?

- . Pectoralis major muscle spasm with no known cause (clear TrPs) but full passive ROM and mobile scapula
- . Shoulder flexion and abduction limited to 90° with empty end feel
- . Presence of localized warmth over scapular area

Is It Vascular?

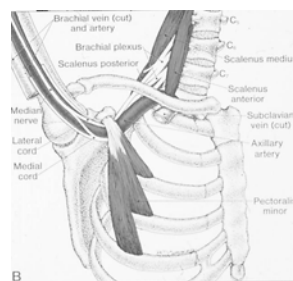
Is it Vascular?

- Exacerbation by exertion unrelated to shoulder movements
- Excessive, unexplained coincident diaphoresis
- Shoulder pain relieved by leaning forward, kneeling with hands on the floor, sitting upright (pericarditis)
- Shoulder pain accompanied by dyspnea, TMJ, toothache, belching, nausea, or pressure behind the sternum

Vascular Clues cont.

- Shoulder pain relieved by nitroglycerin (men) or antacids (women) [angina]
- Difference of 10 mm Hg or more (at rest) in diastolic blood pressure in the affected arm [aortic aneurysm; vascular component of TOS]
 - Vascular cause doesn't mean it's outside the scope of our practice

Thoracic Outlet Syndrome



Vascular cause doesn't mean it's outside the scope of our practice

70

Is It Pulmonary?

Is it Pulmonary?

- Presence of pleuritic component
 - Persistent cough (dry or productive)
 - Blood-tinged sputum
 - Chest pain
 - MS sx are aggravated by respiratory movements
- Exacerbation by recumbency even with proper positioning of the arm
- Presence of Assoc. S&Sx
- Older adult: unknown cause, signs of confusion [pneumonia]

Is It GI?

Is it GI?

- History of previous ulcer, especially in assoc. with NSAID use
- History of other GI disease
 - Gallbladder
 - Acute pancreatitis
 - Reflex esophagitis

Screening Clues ~ GI cont.

- Coincident (or alternating) nausea, vomiting, dysphagia, anorexia, early satiety, or other GI sx
- Shoulder pain relieved by belching or antacids
- Shoulder pain changed by eating (better or worse within 30 minutes/worse 1-3 hours later)

Special Questions to Ask

Shoulder

So...



· What if someone comes to you with shoulder pain that's worse when they lie down?

· In fact, you can't even get them to lie down on the plinth because it hurts too much?

Question



· How do you know if this is:

- Musculoskeletal
- Neuromuscular
- Pulmonary?

Possible Answer

History/physical signs
Palpation
Vital signs ~ what's going on with blood pressure?
Effect of respiratory movements on pain
Auscultate
Ask about other symptoms

Question

If a client reports that shoulder/upper trapezius muscle pain increases with deep breathing, what else do you look for?

Possible Answer

- . Ask about PMHx (last 6 to 8 weeks) of URI, pneumonia, pleurisy, or traumatic injury

- . Look for presence of assoc. S&Sx
 - ⊖ SOB
 - ⊖ Fever, chills
 - ⊖ Night sweats
 - ⊖ Digital clubbing
 - ⊖ Persistent cough

- . Can the symptoms be reproduced with palpation or movement?

- . Examine patient for trigger points; reexamine after eliminating any TrPs

Some Additional Things to Think About or Remember

A physical therapy diagnosis begins with a screening examination

- . Is this an appropriate PT referral?

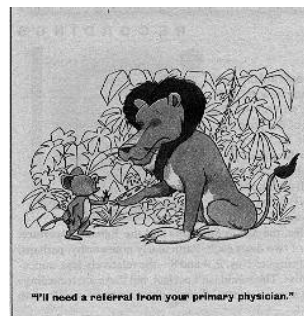
- . Is there a problem that falls into one of the four categories of conditions?

- . Is there a history or cluster of signs and/or symptoms that raises a red flag?

12/6/2011

83

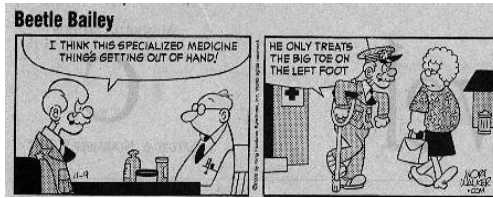
Signed Prescription



12/6/2011

84

Medical Specialization



12/6/2011

Specialists may not recognize
underlying systemic disease.

85

The Rest of the Story



12/6/2011

86

- Sometimes we are forced to treat the symptoms
 - ⊖ E.g., the person is too acute to evaluate
- Usually, we evaluate even medically diagnosed problems
- And sometimes the screening process confirms a neuromuscular or musculoskeletal problem after all

12/6/2011

87

Case Example

- 31 y.o. w/medical diagnosis of "shoulder-hand syndrome"
 - ⊖ Shoulder pain but no trophic changes
 - ⊖ ANS on 'high' ~ unable to modulate, "accident prone"
- PMHx ~ bleeding ulcer

Final Result: Latissimus Dorsi TrP

12/6/2011

88

Screening in 3-to-5 minutes

- Take vital signs
- Use the word 'symptom(s)' rather than 'pain' during the interview
- Watch for red flag histories, signs, and symptoms
- Review medications; consult with pharmacist
- Ask a final all encompassing question

89

Final Question

Always remember to ask:

Is there anything else you think is important about your condition that we haven't discussed yet?

Medical Consult is Required When:

- . No apparent movement dysfunction, causative factors, or syndrome can be identified.
- . Keep in mind the therapist may treat symptoms as part of an ongoing diagnostic process.
- . If, however, the findings aren't consistent with a MS or neuromuscular dysfunction, consult or referral to an appropriate medical professional may be required.

91

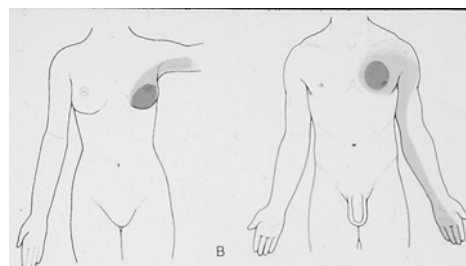
Things We Haven't Talked About

- . Recognizing for substance use
- . Screening for osteoporosis/falls
- . Recognizing eating disorders
- . Recognizing cancer, cancer recurrence, side effects of cancer treatment
- . Identifying important skin and nailbed lesions

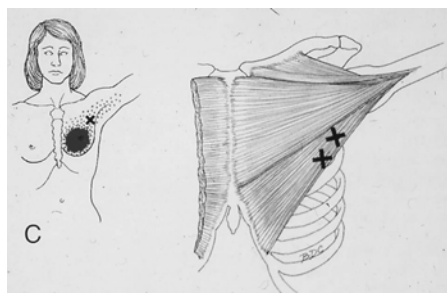
Or:

- . UE Pain patterns associated with heart disease
- . Evaluation of tremors for underlying pathology
- . Importance of assessing for trigger points

For Example ~ Trigger Points Pectoralis Major TrP



Breast Pain ~ Trigger Points (TrPs)



Case Example



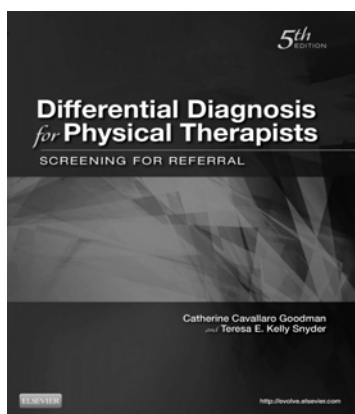
- . 67 y.o. woman w/loss of functional left shoulder motion
- . PMHx ~ stroke 10 years ago

Case Example

- . Did not report CVA or current symptoms of left breast pain to MD
- . Clinical Presentation:
 - TrP of left pec major
 - † shoulder accessory motions
 - Mild strength deficit
 - Mild sensory and proprioceptive losses
- . What to do?

See Also

- . Special Questions to Ask:
 - Shoulder and Upper Extremity
 - And many others by topic
 - Available on CD with text



Final Evaluation

Perform a Review of
Systems to step back
and get the overall view
of the patient/client.

Questions and Answers



Bibliography

- . Vath SA, Owens BD, SToneman P. Insidious onset of shoulder girdle weakness. J Orthop Sports Phys Ther. 2007;37(3):140-147.
- . Mamula CJ, Erhard RE, Piva SR. Cervical radiculopathy or Parsonage-Turner syndrome: Differential diagnosis of a patient with neck and upper extremity symptoms. J Orthop Sports Phys Ther. 2005;35(10):659-664.
- . Baxter RE, Moore JH: Diagnosis and treatment of acute exertional rhabdomyolysis. JOSPT 33(3):104-108, 2003.
- . Nowicki M. Autonomic neuropathy in hemodialysis patients: questionnaires versus clinical tests. Clin Exp Nephrol Jan 20, 2009; epub ahead of print.
- . Malik J: Understanding the dialysis access steal syndrome. A review of the etiologies, diagnosis, prevention, and treatment strategies. J Vasc Access 9(3):155-166, 2008.

