Differential Diagnosis for Low Back Pain Screening for Referral

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Objectives

• Develop a systematic approach to screen for non NMS origins in low back pain patients.

• Identify red and yellow flags

• Understand the various types of pain and pain syndromes, sources of pain and how to differentiate among systemic vs NMS pain.

• Identify problems that may require referral or consultation with other health care providers

• To Refer or Not to Refer???
APTA Vision 2020

- Direct access is a central tenet of the APTA Vision 2020 statement
- PT’s must be able to engage in the diagnostic process as part of their overall evaluation
- Leads to a decision regarding probable pathology
- Followed by determination of whether PT is the appropriate treatment
“With great power comes great responsibility”
Prevalence of LBP

- Low back pain has a lifetime prevalence of approximately 80%.
- It is the fifth most common reason for all physician visits in the US.
- 25% of patients presenting to outpatient PT do so for back pain.
- Back pain is the most common cause of short-term disability in adults younger than 45 years and the second most common cause in adults aged 45 to 65 (Jette).
Back Pain Is No Joke!
Who is at risk???

- Current literature does not support a definitive cause for initial episodes of LBP.
- Risk factors are multifactorial, population specific and only weakly associated with the development of low back pain.
- Greater prevalence in women than men
- Material workers 39% prevalence
- Sedentary workers 18.3% prevalence

(Delitto, Low Back Pain Clinical Practice Guidelines, JOSPT 2012;;42, March 2012)
Causes of Low Back Pain

- Any innervated structure in the lumbar spine can cause symptoms of LBP.
- Difficult to identify: > 90% cannot be given a precise pathoanatomical diagnosis.
- Determination of pathoanatomic origin of pain has a high false positive on imaging studies.
- Evidence of HNP on MRI or CAT in 20% to 76% of persons with no symptoms.
- “Establishing a direct cause and effect between pathological finding and patient condition has proven elusive and does not assist in patient management.” (Delitto 2012)
The Challenge of Diff Dx

- Most LBP is benign and self-limiting
- The challenge is to distinguish serious spinal pathology or non-neuromuscular pathology from non-specific LBP
- In approximately 7% to 8% of patients with LBP – the cause is due to non-mechanical spinal conditions or visceral disease. (Deyo 1992)
The Search

- Screen for non NMS causes of pain
- History
- Clinical Examination & Tests
- Clinical Reasoning
- All play a part in the differential diagnosis
Goals of the Screening Process

- Identify patients at risk
- Identify atypical signs/symptoms
- Correlate signs/symptoms
- Review all systems
- Identify red and yellow flags
- Medical diagnosis is not the goal
Screening

- Client history is the first and most basic skill
- The intake form helps guide the clinical decision making process and should be thorough
- Most of the information needed is contained within the subjective assessment (history and interview)
- Ongoing process throughout treatment
- Historical features are most useful in assessing for serious underlying disease (Lurie 2005)
- Screening examinations of vital signs BP/HR
Special Screening

Questions of Low Back Pain

- Have you recently had a major trauma (MVA, fall)?
- Have you been screened for osteoporosis?
- Do you have a history of cancer?
- Does your pain ease when you rest?
- Have you recently had a fever?
- Have you recently taken antibiotics for an infection?
- Have you recently lost weight unexpectedly?
Special Screening Questions of Low Back Pain

- Have you been diagnosed with immunosuppressive disorder?
- Are you currently taking steroids? Or history of use?
- Have you noticed a recent onset of difficulty retaining urine?
- Have you noticed a recent need to urinate more frequently?
- Have you noticed a recent onset of numbness anywhere on your bottom or genitals?
- Have you noticed your legs becoming weak?
You don’t see what you don’t look for
You don’t hear what you don’t ask about
Improving our patient interview

- Facilitate: encourage your patient to say more with words of silence
- Repeat or paraphrase to encourage more detail and think about what was said
- Clarify: ask the patient what do they mean?
- Funneling Questions: to get more complete answers
- Empathize: show your understanding and acceptance
- Interpret: put into words what you are hearing from patient and repeat for patient confirmation
Review of Systems

- General questions about fevers, excessive weight gain or loss and appetite should be followed by questions related to specific organ systems
- Medications reviewed for possible adverse side effects
- Look for a pattern of systemic, medical, or viscerogenic origin of pain
- Combine with information from history, risk factors, associated signs and symptoms, and red and yellow flags.
- Chief presenting symptoms
General Screening Alarms

- History of Cancer (personal or familial)
- Unwarranted general fatigue/malaise
- Unintended weight loss or loss of appetite
- Recent infection, illness, or constitutional symptom
- Immunosuppression
- Injection drug use
- Altered vital signs (BP, HR, Body temp)
- Fever or night sweats
- Unresolved Night Pain
Red Flags/Warning

- Features of the history and clinical exam thought to be associated with a high risk of serious disorders such as infection, inflammation, cancer or fracture.
- Requires immediate attention
  - Pursue further screening questions or tests
  - View in context of the whole person/ history
  - Make an appropriate referral

More testing needs to be done to identify valid red flags (Delitto 2012)
Most Common Red Flags

- Age less than 20 or over 50
- Prior history of cancer
- Constitutional symptoms (fever, chills, weight loss)
- Recent urinary tract infection
- History of IV drug use
- Immuno-compromised condition
- Failure to improve with conservative care
Common Red Flags

- Pain not relieved by rest or recumbency
- Severe, constant night time pain
- Progressive neurologic deficit; saddle anesthesia
- Back pain with abdominal, pelvic or hip pain
- History of falls or trauma
- Significant morning stiffness limiting all spinal movement
- Skin rash
Red Flags for Low Back Pain

- Constant Pain not affected by position or activity; worse with weight bearing, worse at night
  - Age > 50
    - (Sn = .84, Sp = .69, +LR = 2.2, -LR = .34)
- History of Cancer
  - (Sn = .55, Sp = .98, +LR = 23.7, -LR = .25)
- Failure of conservative intervention within 30 days
  - (Sn = .29, Sp = .90, +LR = 3.0, -LR = .79)
- Unexplained Weight Loss
  - Sn = .15, Sp = .94, +LR = 3.0, -LR = .79
- No relief with bed rest
  - Sn = 1.0, Sp = .46, +LR = 1.7, -LR = .22  (Delitto 2012)
**Yellow Flags/ Caution**

- Risk factors or findings that are potential confounding variables which are cautionary warnings regarding the patient’s condition.
- They could have an impact on the patient’s prognosis and or outcome.
- Alert the PT to slow down and monitor the influence of the finding.
Yellow Flag Clinical Concerns

- Skin/Nail changes
- Unknown etiology with insidious onset
- Diminishing symptomatic relief value from previously effective remedies
- Disproportionate symptoms (give FABQ)
- Symptoms do not fit in typical or recognizable pattern
“Off hand, I'd say you're suffering from an arrow through your head, but just to play it safe, I'm ordering a bunch of tests.”
Visceral Pain Referral

- Visceral diseases of the abdomen and pelvis often refer pain to the back.
- The CNS correlates a pain coming from a visceral system with a known somatic area.
- Pain from a visceral source relates to an area of shared embryological origins.
- Prostate cancer pain can refer to Lumbar Pain.
Systemic Pain

- Disturbs Sleep
- Deep/boring aching or throbbing pain
- Reduced by pressure
- Constant Waves of pain
- Not aggravated by mechanical stress
- An increase over time of frequency, intensity and duration
- Cyclical pain pattern
- Usually, cannot alter or provoke with movement
- Eating alters symptoms
Signs Associated with Systemic Pain

- Jaundice
- Migratory arthralgia
- Skin rash
- Fatigue/Weight Loss
- Low-grade fever
- Generalized weakness
- History of infection
Musculoskeletal Pain

- Generally lessens at night
- Sharp or superficial ache
- Usually decreases with cessation of activity
- May be constant but usually intermittent
- Aggravated by mechanical stress
Non Musculoskeletal Causes of LBP

- Cancer
- Vascular/Cardiac
- Renal/urologic
- Gastrointestinal
- Gynecological
- Infection
- Metabolic
Cancer – Malignant Primary

- Extremely rare < 1%
- Bone tumor: osteosarcomas, Ewing’s sarcoma, fibrosarcoma, and chondrosarcoma.
- Spinal cord tumor
- Multiple myeloma
- Retroperitoneal tumor
- If cancer is suspected immediate referral
Multiple Myeloma

- Most common primary malignancy
- Diffuse osteoporosis. Pathological fracture in 30% of cases
- Age > 50
- Pain with movement that is not relieved by patient being recumbent
- Weakness and numbness of LE
- Long period of development (5 to 20 years) with a chronic presentation of LBP
- Diagnostic tests: serum and urine immunoelectrophoresis
Osteosarcoma

- Insidious onset of pain
- > 45 years
- Progressive pain that does not respond to conservative treatment
- Anorexia, malaise or night pain
Spinal cord tumors

- LBP, sciatica, saddle and perianal analgesia
- Decreased rectal tone
- Absent patellar and Achilles reflexes
- Bowel or bladder dysfunction
- Lower extremity weakness
- Treatment of spinal cord tumors causing cauda equina requires immediate surgical decompression
- Refer immediately to MD
Ewing’s Sarcoma

- Ages of 5 and 16
- Slightly greater incidence in boys than girls
- Bone pain in 85%
- Fever
- Fatigue
- Weight loss
- Bowel or bladder disturbances
Metastases to the lumbar spine

- Unremitting low back pain
- Four clinical findings with highest likelihood ratio
  - Previous history of cancer
  - Age 50 years or older
  - Failure to improve with conservative care
  - Unexplained weight loss of more than 10 pounds in 6 months
- Referral to MD required
Vascular

- Aortic or iliac aneurysm
- Aortic or iliac arteriosclerosis
- Endocarditis
- Peripheral vascular disease
Endocarditis

- Endocarditis may present in 1/3 of patients as LBP with decreased lumbar AROM and spinal tenderness
- May produce S-I pain localized at the S-I from possibly causing septic emboli at the S-I
- LBP from endocarditis may radiate to the leg and increase with SLR or sneezing but the key difference is that neurological deficits are usually absent [7]
Endocarditis

- Questions to ask:
  - Have you had any recent skin rashes or dot-like hemorrhages under the skin?
  - If so, has this been after a recent surgery, invasive diagnostic procedure or a visit to the dentist?
  - Have you noticed any fever or other constitutional symptoms?
  - Do you have any chest pain or dyspnea?
  - Have you been diagnosed with a heart murmur?
Endocarditis

- So what do you do?

- Review the history and risk factors

- If the patient has LBP, and "yes" answers to special questions, along with no neuro deficits and otherwise negative lumbar and S-I special tests, the patient should be referred to their physician with a note documenting your findings
Abdominal Aortic Aneurysm

- Rupture of the aorta is the 10th leading cause of death in males over the age of 65
- Rupture of the aorta is the 13th leading cause of death in females over 65
- Identifying patients with possible AAA and making a timely referral can save lives
AAA – Abdominal Aortic Aneurysm Risk Factors

- Age > 60
- Male
- History of smoking
- Family history
- Intermittent claudication
- Decreased peripheral pulses
- Orthopedic surgery involving anterior spinal procedures
- Anticoagulant therapy
Signs and Symptoms of AAA

- Rapid onset of severe back pain
- Pain not relieved by change in position
- Pain described as “tearing” or “ripping”
- Cold pulseless extremities
- Palpable pulsating abdominal mass
- Lower BP in one arm
- Supine position accentuates pain
- Increasing aortic pulse width (Sn 28%, SP 97%)
- Abdominal Bruits (Sn 11%, Sp 95%) (auscultation of turbulent blood)
- Femoral Bruits (Sn 17%, Sp 87%)
- Refer immediately to MD if > 65, male, smoking history and any of the above signs and symptoms
Aortic Diameter Width/Abdominal Bruits

- Once a pulse has been detected with mid abdominal palpation, place both index fingers with deep but gentle pressure, along the sides of the pulse noting the presence of a laterally expansive pulsation.
- If found then abdominal auscultation for the presence of a bruit.
- Sn for palpation of AAA > 5 cm is 82%
- Sn for palpation of AAA > 4 cm is 72%
- Sn for palpation of AAA 3.0 to 3.9 cm is 61%

Mechelli 2008
Questions to ask:
- Have you ever felt a “heart beat” in your abdomen when you lie down?
- If so, is this associated with your low back pain?
- Have you had any recent anterior spine surgery?
- Do you have a history of heart disease or past aneurysm?

Positive findings and risk factors – immediate referral
Atherosclerosis in abdominal aorta

- Pain described as throbbing
- Increased with any activity that requires greater cardiac output
- High cardiac risk factors: smoking, HTN, diabetes, >50, elevated serum cholesterol, family history
- Older adults with long term non specific LBP may have occluded lumbar/middle sacral arteries associated with DDD.
- Red flag – back pain with high levels of serum low-density lipoprotein
LBP: Vascular or Neurogenic
Differences in vascular vs neurogenic pain

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<thead>
<tr>
<th>Vascular</th>
<th>Neurogenic</th>
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<tbody>
<tr>
<td>Throbbing</td>
<td>Burning</td>
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<tr>
<td>Diminished, absent pulses</td>
<td>No change in pulses</td>
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<tr>
<td>Trophic changes (skin</td>
<td>No trophic changes</td>
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<tr>
<td>color, texture,</td>
<td>Subtle changes in LE strength</td>
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<td>temperature)</td>
<td>Pain increases with spinal extension, decreases with flexion</td>
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<tr>
<td>Pain present in all</td>
<td>Symptoms with standing: Yes</td>
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<tr>
<td>spinal positions</td>
<td>Pain may respond to prolonged rest</td>
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<td>Symptoms with standing:</td>
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<td>NO</td>
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Goodman 5th ed.
Cauda Equina Syndrome

- Constellation of symptoms secondary to damage to the portion of the NS below the conus medullaris
- Peripheral nerves both sensory and motor within the spinal canal and thecal sac are involved
- Causes
  - Tumor
  - Disk herniation
  - Spinal stenosis
  - Spinal infection
  - Epidural hematoma
  - Spinal fracture of dislocation
  - Ankylosing Spondylosis
Signs and Symptoms of Cauda Equina

- Presentation is different than SCI
- Low back pain
- Saddle anesthesia
- Bowel or bladder dysfunction
- Lower extremity weakness
- Diminished sensation over buttocks and posterior superior thighs
- Decreased anal sphincter tone, urinary retention and overflow incontinence occur in 60% to 80%
- Diminished or absent LE reflexes

**ASK SPECIFIC QUESTIONS FOR BOWEL AND BLADDER CHANGE**
Early diagnosis leads to Prevention

- Prognosis for complete recovery from CES is dependent on early intervention
- Recognizing the signs and symptoms can lead to early diagnosis and prevention of permanent damage
- Immediate referral back to MD when patient presents with signs of saddle anesthesia, bowel and bladder dysfunction and lower extremity weakness
- Decompression surgery is often successful if due to compressive problem
- If due to infection – antibiotics are administered
Gastrointestinal causes of LBP

- Crohn’s disease
- Acute appendicitis
- Diverticulitis of the colon
- Duodenal ulcer
- Irritable bowel syndrome

Risk Factors
- Long term or chronic use of NSAIDs
- Long-term use of immunosuppressants
- Past history of cancer
- History of Chron’s disease
- Previous bowel obstruction
Signs and symptoms of GI dysfunction

- Early satiety
- Bloody diarrhea
- Melena (dark tarry stools caused by oxidation of blood in stomach)
- Hemorrhage or red blood in stools (sign of anal fissures, hemorrhoids)
- Alternating abdominal/LBP at same level
- Back pain made better, worse or altered by eating
  - Change within 30 minutes may indicate stomach or duodenum
  - Change 2 to 4 hours after eating may indicate lower GI tract (intestines/colon)
Small Intestine/Crohn’s disease

- These conditions usually cause mid-abdominal pain, but can refer pain to the low back and sacrum.
- A red or purple rash can precede the onset of back pain and can occur in the back or lower extremities.
- Questions to ask:
  - Have you had alternating abdominal and back pain?
  - Is the pain relieved by passing gas or stool?
  - Any changes in stool color, frequency or consistency?
NSAID-induced GI Impairment

Incidence of NSAID-related ulcer complications is high in PT population
Review of medications is vitally important
Risk Factors
• > 65 years of age
• History of peptic ulcer or GI disease
• Smoking and alcohol use
• Anticoagulation
• Renal complications
• NSAIDs combined with selective serotonin reuptake inhibitors
Symptoms include:
• Back pain
• Stomach upset
• Indigestion
• Skin reactions
• HTN
• Tinnitus
Urogenital

- This includes the upper urinary tract (kidney and ureters) and the lower urinary tract (bladder, urethra and prostate in men).

- Genitourinary disease varies in men and women, but have common causes of inflammation/infection or obstruction.

- Referred pain can present from the costovertebral angles (CVA) to the level of the sacrum.
Screening for Renal/Urogenital Causes

- Risk factors
  - Age > 60
  - Personal or family hx of diabetes
  - Personal or family history of kidney disease, MI or stroke
  - Personal history of kidney stones, UTI, autoimmune
  - Exposure to chemicals, drugs or environmental toxins
  - African, Hispanic, Pacific Island or Native American descent
Upper urinary tract

- Upper urinary tract pain can refer to the T10 – L1 dermatomes
- Pain is usually constant and dull which is not changed by body position
- Flank pain is usually present with tenderness at the Costovertebral Angle
- Murphy’s percussion test over kidneys - positive if reproduces patient’s pain.
Lower urinary tract clinical symptoms

- Low back pain may be the patient’s chief complaint
- Urinary frequency and or urgency
- Painful intercourse
- May be accompanied by pelvic or lower abdominal pain
Urogenital

- So what do you do?

- Immediate medical attention is required if bladder incontinence accompanies saddle anesthesia as it could suggest a cauda equina lesion.

- Pain that is constant and not changing on movements/positions and abnormal urine consistency or with blood in the urine accompanying low back pain needs referral to a physician.
Acute appendicitis
Immediate Referral

- Pain in right lower abdominal and lumbar regions
- Right iliac or lumbar direct tenderness
- Anorexia, nausea and vomiting
- Low grade fever
- McBurney’s point tenderness (right lower quadrant)
- Supine drawing legs in decreases pain or bending over
- Positive hop test (hopping on one leg reproduces pain)
Gynecologic causes of LBP

- Retroversion of uterus
- Ovarian cysts
- Uterine fibroids
- Endometriosis
- Pelvic inflammatory disease
- Ovarian cancer
Screening for Gynecologic Causes

- **Risk Factors**
  - Multiple pregnancies
  - History of gynecologic problems
  - History of sexual assault
  - Obesity

- **Signs and Symptoms**
  - Irregular menses
  - Abnormal vaginal bleeding
  - Postmenopausal bleeding
  - Urinary problems
  - Vaginal discharge
  - Nausea vomiting
  - Fever and night sweats
Male reproductive causes of LBP

- Prostate cancer
  - Second most common cancer in males > 60 in US
  - 60% to 75% increase in the last 15 years

- Testicular cancer
  - Most common cancer in males ages 15 to 35

- Benign prostatic hyperplasia (BPH)
  - 50% of men over 50
Risk factors for prostate dysfunction

- Advancing age
- Family history
- Ethnicity with greater risk for African American men
- Diet
- Exposure to chemicals
Signs and symptoms of Prostate

- Low back pain
- Changes in bladder function – starting flow, continuing flow, size of flow
- Fever and chills
- Sexual dysfunction
- Testicular or penis pain
- Blood in urine or semen
Vertebral Osteomyelitis

- Bone infection most often affecting L1 an L2
- Marked local tenderness over SP
- Paravertebral muscle guarding
- Positive SLR
- Elevated ESR
- Low grade fever
- Pain more severe at night
- Hip pain if spread to the psoas
- **Risk Factors** –
  1. Recent bacterial infection
  2. Corticoid steroid usage
  3. Alcoholics
  4. Injection drug users
  5. Spinal injury

Staphylococcus aureus MRSA. Increase incidence with complication of nosocomial bacteremia.
Ankylosing Spondylitis

- Systemic disease – inflammatory disorder of fibrous tissue affecting tendons and capsules into bones
- Progressive loss of spinal mobility as vertebrae become fused
- Insidious onset of LBP and stiffness
- < 40 years and more often male
- Fever and malaise
- Inflammatory bowel disease
- Dx with radiographs, MRI and ESR
- Tx – steroidal anti-inflammatory medication in conjunction with PT for postural and movement considerations
Fractures of the Spine

- **Burst Fracture**
  - Trauma (MVA or falls)
  - Severe debilitating low back pain
  - Neurologic sx and bowel and bladder dysfunction
  - Dx with radiographs

- **Compression Fracture**
  - Associated with osteoporotic changes
  - Chronic LBP pain with loss of sleep
  - Pain worse with walking and weight bearing
  - Dx on radiographs
  - Risk factors – female > age 60, osteoporosis, long term corticoid steroid use
Red Flags Associated with Fracture

- Age > 70
- Prolonged use of corticosteroids
- Significant trauma
- Radiograph indicated
Indications for MRI

- Worsening neurologic deficits
- Suspected systemic cause of back pain
- When referral for surgery or injection is possibility (Patel 2000)

“Imaging, particularly MRI, serves best to assess for serious underlying disease in high-risk patients and to confirm a suspected diagnosis of intervertebral disc herniation or spinal stenosis in patients being considered for surgical interventions “ (Lurie 2005)
Neuromusculoskeletal Causes of LBP

- Lumbar segmental instability
- Non-specific low back pain
- Lumbar disk herniation
- Spinal Stenosis
- Sacroiliac joint
Case Study (Mechelli. Resident’s case study 2008)

- 38 year old male referred to PT with diagnosis of chronic LBP
- Chief complaint central, mid and low lumbar pain of 2 month duration
- Denied any precipitating event
- Treatment so far NASID and heel lift to address leg length discrepancy
- Symptoms worsened over the last 2 weeks
Symptoms

- Mild pain described as constant deep unrelenting pain that was unable to change with movements
- No extremity pain or neurological signs
- No change in pain with movement, activity, change in posture, or time of day
- Over last two weeks increasing pain at night
- 10 year history of LBP associated with volleyball
- Had been seen in clinic for previous episodes of LBP that resolved with treatment
Review of Systems

- Negative for weight loss, fever, chills, sweats, nausea, fatigue, dyspnea, heart palpitations, bowel or bladder function
- Past history of smoking 10 cigarettes a day
- 120/80 mmHg and 66 pulse rate
- Activity level prior to pain – jogging
Physical Exam

- No provocation of pain with trunk movements
- Negative SI tests
- SLR, prone knee bend and slump negative
- Palpation of abdomen revealed strong prominent non tender pulsatile mass both in prone and supine
- PT halted exam and referred patient immediately to MD
- Ultrasound and CT scan confirmed a 10 cm AAA
- Patient underwent surgery 2 days later
Lessons learned

• Patient did not fit profile for AAA with only 1 risk factor. (smoking)

• PT was alert to the fact that this episode of LBP was different from previous ones

• Unremitting LBP and night pain were red flags

• Pain that did not change with movement – red flag

• Palpation of abdomen is important part of exam when there are not NMS findings
So many things to look for how do we narrow our focus? Points to remember...
CPG Guidelines on when to refer

- Clinical findings are suggestive of serious medical or psychological pathology
- Reported activity limitation or impairments are not consistent with those found on examination
- Symptoms are not resolving with interventions aimed at restoring impairments of body function.
- Based on strong evidence/level A (Delitto 2012)
Guidelines for immediate referral

- LBP with cauda equina symptoms
- Massive midline rupture of a disk in the lower lumbar levels
- Men between the ages of 65 to 75 with history of smoking presenting with signs or symptoms of AAA
- Inability to bear weight, especially with fever and/or a history of cancer, diabetes, immunosuppression or trauma

Delitto 2012
Special Concerns to look for

- Abdominal pulsating mass
- Bilateral LE pain/numbness or weakness
- Bowel and bladder changes
- First episode of LBP in patients < 20 and > 55
- Pain at rest or night
- Previous history of cancer
- Previous history of prolonged steroidal medication, diabetes, human deficiency virus, or organ transplant
- Rapid progression of neurological symptoms
- Recent significant trauma
- Saddle anesthesia
Take home messages

- Look for a pattern of systemic, medical, or viscerogenic origin of pain with review of systems.

- Clusters of tests provide the best information for clinical decision making (Cook 2009).

- Combine information from history, risk factors, associated signs and symptoms, red and yellow flags, examination and response to treatment to make clinical decision on referral (immediate or non urgent), treatment and referral or diagnose and treat.
Resources in the clinic

- *Differential diagnosis for Physical Therapists* by Goodman and Snyder
- *Diagnosis for Physical Therapists: A Symptom Based Approach* by Todd Davenport
- Online Diff Dx Course by Chad Cook: http://www.educata.com/courses.aspx
- APTA Learning Center
References


- Deyo RA, Rainville J, Kent DL. What can the history and physical examination tell us about low back pain? JAMA 1992; 268:760


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