Low Back Injuries in Golf

See also Lower back pain

Background
1. According to National Golf Foundation there were 28.7 million golfers in U.S. in 2006, ages 5 and above
2. More than 80% of injuries are thought to be chronic and overuse in nature
3. As many as 1/3 of professional golfers have experienced low back pain for greater than two wks w/in past yr
4. Forceful trunk rotation and lumbar extension are thought to cause much of this overuse-type injury
5. Swing of a golf club involves rotational movement around a fixed lumbar spine
   o Which leads to high torque forces and tremendous energy delivered through facet joints
6. Useful websites
   o www.sportsmed.org
   o www.pga.com

Pathophysiology
1. Injuries caused by
   o Overuse
   o Poor mechanics
   o Poor physical fitness, muscle and ligament strains
   o Trauma
2. Professionals: 33% involve lumbar spine
3. Amateur: 25% of injuries involve lumbar spine
4. Risk factors
   o Poor swing mechanics
   o Poor flexibility
   o Incr workload w/o adaptation
   o Inadequate warm-up
   o Muscle imbalances
   o Vertebral malalignment, such as scoliosis, kyphosis, etc.
   o Improper club length
   o Underlying medical conditions
     ▪ Osteoporosis
     ▪ Osteoarthritis
     ▪ Obesity
     ▪ Neuropathy
     ▪ Rheumatoid arthritis
   o "Over swinging": swinging harder/ faster than ability allows
   o Carelessness or improper golf etiquette, such as
     ▪ Club throwing
     ▪ Alcohol consumption
     ▪ Golf cart accidents
   o Carrying golf bag
5. Morbidity/ mortality
   o Average time lost per lumbar spine injury 69 days
     ▪ For all golfers; amateur or professional
Diagnostics

1. History
   o Recent incr frequency of play
     • Number of rounds in a week or month
   o Warm-up, cool down, stretching
   o Swing speed
   o Handicap/ level of experience
   o Hx of trauma
   o Hx of low back sprain/ strains
   o Describe quality of pain
   o Duration of discomfort
   o Relieving and exacerbating factors
   o Self tx
   o Any audible noises or clicks felt during swing
   o Red flags
     • Numbness
     • Tingling
     • Radicular symptoms
     • Incontinence

2. Physical exam
   o Inspect for
     • Asymmetry
     • Discoloration
     • Skin changes
     • Swelling
   o ROM: active then passive
     • Standing: side bend, forward flexion, backward extension
     • Sitting: rotation, isolate lumbar region
   o Palpation
     • Skin, myofascial, muscle, ligament, tendon, bone
     • Bony landmarks, muscle attachments
     • Intervertebral motion testing
     • Somatic dysfunctions
       • Tissue texture changes
       • Restrictions in motion
       • Tenderness
       • Asymmetry
   o Muscle testing
     • Lower extremity
     • Spinal extensors
     • Hamstrings
     • Abdominals
   o Neurologic
     • Sensation
     • Reflexes
     • Proprioception: Rhomberg, heel-shin
   o Special tests
     • Straight leg raise
• Slump test
  • Pt in sitting position
  • Hunches down in slumped position while legs are passively extended one at a time
  • Elongating spinal canal and nerves
  • Attempting to elicit neurologic-type radiating pain

3. Diagnostic testing
  o Lab eval: usually not necessary
  o Diagnostic imaging, required if
    ▪ Red flags in hx
    ▪ Failed conservative therapy
  o MRI modality of choice
    ▪ Plain films if osteoarthritis or spondylosis suspected

Differential Diagnosis
1. Muscle strain: most common
2. Spondylosis
3. Spondylolisthesis
4. Facet dysfunction
5. Osteoarthritis
6. Disc herniation
7. Sacroiliac joint dz
8. Sacral torsion
9. Vertebral compression fx
10. Lower rib fracture
    o Acute / traumatic
    o Chronic / stress
11. Nephrolithiasis
12. Urinary tract infection

Therapeutics
1. Acute
   o Relative rest
   o Ice
   o Anti-inflammatory drugs
     ▪ NSAIDs are more effective than placebo for pain relief in patients with acute LBP
   o If red flags: needs immediate eval and work-up
2. Further mgmt (24 hrs to several wks)
   o Physical therapy; focus on flexibility and correcting muscle weakness/imbalance, core stabilization
     ▪ Ice/heat
     ▪ U/S
     ▪ Electric stimulation
     ▪ Traction
   o Consider osteopathic/ chiropractic manipulation
   o Other interventions for less common etiologies as appropriate
3. Long-term Care
   o Swing analysis/ golf lessons, correct improper mechanics
o Improve overall fitness: aerobic conditioning/ cross-training
o 5-10 min pre-round stretch/ warm-up routine
o May include: physiatrist, physical therapist, PGA golf professional
o Refer: failure to improve w/in 4-6 wks or development of red flags

Follow-Up
1. Return to office
   o For sprains/ strains return after 4-6 wks of physical therapy
   o More severe injuries
     ▪ Follow up 2-4 wks for improvement
     ▪ Abstinence from activity
     ▪ Compliance w/physical therapy
2. Refer to specialist
   o No response to conservative mgmt
3. Refer to ED
   o Saddle paresthesias
   o Bowel or bladder incontinence
   o Focal neurologic/ muscular deficits
   o LOC
   o Signs of fx/ deformity
     ▪ Needs immediate eval
     ▪ MRI or CT for neurologic deficits
     ▪ Neurosurgical or orthopedic referral

Prognosis
1. With rehabilitation & correction of swing mechanics
   o Should return to previous level of activity
2. High risk of relapse incl
   o Age >65
   o Hx of osteoporosis
   o Chronic medical conditions
   o Poor functional status
   o Poor overall fitness level
   o Non-compliance

Prevention
1. Improve technical skills w/lessons
2. Improve physical fitness
3. Instituting pre-practice/ round warm-up routine
   o Stretch major muscle groups
   o Incr ROM in golf swing
   o Light aerobic activity
4. Realistic expectation for skill level
5. Gradual incr in frequency of play
6. Proper golf etiquette or anger mgmt
7. Ensure proper equipment length/wt
References

Evidence-Based Inquiry
1. What is the most effective treatment for acute low back pain?

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