

to the low back; knees  
iries. Among gymnasts,  
9% of females have ver-  
cts, probably related to

isibly tall and fat, smok-  
sues. Neutral factors are  
major positive factors for  
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s and increased atrophy  
patients with low back  
the low back. Treatment  
social advice, return to  
analgesic and relaxant

forward override of one  
dyolisthesis, is probably  
which overgrows in the  
the vertebral body. An  
usually with very extreme  
ry dramatic acute cauda  
regency. This is very rare.

rates of over 30%. The  
associated with any symp-  
low back pain per se. It is  
iculopathy with progres-  
iculopathy with persis-  
cations should prompt an  
(left or right) and level of  
let, then nonsurgical ap-  
t.

## CHAPTER 50

# Spondylolysis and Spondylolisthesis

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### QUESTIONS

- 50-1. The single most frequent cause of chronic low back pain in the young athlete is:
- muscle strain.
  - infection.
  - spondylolysis.
  - herniated disc.
- 50-2. Spondylolysis in the young athlete is:
- a congenital malformation of the vertebral posterior elements.
  - a stress fracture caused by cyclic loading.
  - a condition that only occurs in elite athletes.
  - treated by restriction of activity.
- 50-3. Spondylolisthesis:
- is progressive and painful.
  - is treated by spinal fusion.
  - is usually the source of chronic back pain when found in adults.
  - means "vertebral sliding."
- 50-4. Plain radiographs:
- can allow measurement of percent slip.
  - show the pars damage in all cases.

- c. can be used to predict symptoms.  
d. should be avoided in young people.
- 50-5. Treatment of spondylolysis and spondylolisthesis in athletes:
- always involves rigid bracing.
  - can usually be done with activity modification and physical therapy.
  - always results in bony union.
  - has been proven to be accelerated by the use of bone stimulators.
- 50-6. A young elite level gymnast presents at your office; she has been having back pain for the last few months, which prevents her from competing. There was no acute injury to initiate her symptoms; they started insidiously. It hurts most during the back walkover, which causes a deep burning in the low back for the next several hours. There is a constant background of ache. A few days out of the gym and she feels only slightly improved, but one back walkover and the pain returns. The pain is low in the back, close to the midline. There are no radiations anywhere, not to buttocks or legs. She has no reflex, sensory, or motor alterations in her legs; straight leg raising is normal. There is no hint of other joint problems, and no arthritis in her family history. What is your provisional diagnosis?
- psychological; she may be looking for a honorable exit from the sport.
  - sacroiliitis, the beginning of a possible seropositive arthritis, maybe ankylosing spondylitis.
  - facet joint sprain.
  - diskogenic pain, possibly an early disk prolapse.
  - stress fracture across the pars interarticularis, part of spondylolisthesis, with or without any anterior realignment of the vertebra.
- 50-7. With the young gymnast above, what is the laboratory test that will most likely clinch your diagnosis, although it might not be the first test ordered?
- routine spine radiography.
  - technetium 99m nuclear bone scan, especially with the single photon emission computerized tomography (SPECT) views.
  - Computerized axial tomography scan of low back.
  - HLA-B27 antigen test.
  - Diskogram.
- 50-8. A 14-year-old male hockey player was treated for mild (grade 1) spondylolisthesis and has been playing hockey without symptoms for the past year. His parents want another opinion concerning whether he should have any restrictions from contact sports because of his findings. Recent radiographs again showed the grade 1 spondylolisthesis. The current recommendations would be:
- no collision sports.
  - no contact sports.
  - no restriction.
  - no running.
- 50-9. A highly competitive back pain is found on diagraphy, and in the same area. Recommendation for treatment:
- may play basketball.
  - may play basketball taking nonsteroidal anti-inflammatory drugs.
  - should be sidelined for 6 weeks.
  - should be sidelined until healed.

includes stress fractures, bursitis, and tendonitis. All are due to some repetitive pattern of mechanical stress on the body.

youth coaches had suggested a preseason conditioning program including strength training.

- c. no restrictions.
- d. no running sports.

50-9. A highly competitive 13-year-old female basketball player with low back pain is found to have unilateral spondylolysis of L5 on plain radiography, and a technetium 99m bone scan shows marked uptake in the same abnormal region as on the radiograph. The best recommendation for this athlete is that she:

- a. may play basketball as long as she is pain-free and without medication.
- b. may play basketball if wearing a thoracolumbosacral orthosis and taking nonsteroidal antiinflammatory drugs.
- c. should be sidelined from all sports until the lesion has healed as seen on the bone scan.
- d. should be sidelined from all sports for 1 year after the lesion has healed.