Evaluation and Management of Low Back Pain in the Adolescent

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Low Back Pain

- Common in adults
- Uncommon in children
  - Think bad!!
  - Anecdotal medicine for me

- Adolescents
  - Up to 40% of teens
    - 10% affecting quality of life scores
      - Arch Peds 2009
  - Evaluation depends upon history and activity level
Low back pain

- 14 year old boy
  - Sedentary
  - Worse with sitting
  - Night pain?
  - Neuro?

- Exam
  - Neuro, extension, hamstrings, cutaneous abnormalities

- Imaging
  - Plain films- 2V

- Treatment
  - PT
  - Ice/Heat/Analgesics/Home program
Low back pain

- 15 yo female gymnast with back pain x 2 months
  - Worse with running
  - Occ pain at school

- Diff dx:
  - Disc
  - “mechanical” LBP
  - Spondy
  - Sacral stress fx
  - Tumor
  - Kidney/GYN
Low back pain

- **History**
  - Sudden onset
  - Increase with activity

- **Phys exam:**
  - Tight hams
  - Pain with ext both standing and prone
  - Tender over L5
Low back pain

- Diagnostic Testing?
  - Plain films- 2V vs 5V
  - MRI
  - SPECT
  - CT
Spondylolysis

- Fracture of the pars interarticularis
- Common injury in adolescent athletes
  - Acute vs. chronic
- Difficult to diagnose, explain and treat!!
Spondylolysis

- Cause of back pain in 50% of adolescent athletes- Micheli and Wood, 1995.
- Stork test- 50% sens/spec- Masci et al 2006.
Spondylolysis - Imaging

- Plain films 30-40% sensitive, no advantage to obliques
- 39 of 40 lesions seen on MRI that were seen on CT and SPECT but only 29 of 40 graded correctly - Campbell et al, 2005.
- 20% of lesions missed on MRI compared to SPECT - Masci et al, 2006.
- Approx 80% at L5
Spondylolysis- Management

- Treatment
  - Brace or no brace?
  - Activity restriction

- Bracing Biomechanics
  - Many patients showed increased intervertebral motion- Calmels and ayolle-Minon, 1996.
Outcomes

- What are we trying to achieve?
- Pain-free activity, bone healing, or both?
- Meta-analysis - JPO, 2009
  - 83.9% treatment success - no difference between bracing and not bracing (no Level 1 evidence)
  - Healing depends upon stage and uni or bi
    - 71% unilateral
    - 18% bilateral
    - Acute - 68%
    - Progressive - 28%
    - Terminal - 0
What I do- ABM

- SPECT and CT
  - 1. If positive SPECT, neg CT- PT and no sports x 12 weeks
  - 2. If positive SPECT, pos CT- same, unless shows more sclerotic lesion may RTP earlier if no pain
  - 3. If neg SPECT, pos CT- PT and sports depending upon pain
  - 4. If neg SPECT, neg CT- PT and sports depending upon pain

- If still having pain after 6 weeks PT- consider brace in 1 and 2, MR in 3 and 4.

- If still having pain after 12 weeks PT- consider bone stim in 1 and 2, ref to physiatrist in 3 and 4- is that the pain source?

No follow-up imaging if asymptomatic
Spondylolisthesis

- May be incidental finding
- Treat Grade 1 and 2 similar to spondylolysis
- No pain=no slip
- Beware lesions above and below
Upper back pain

- Most commonly seen in pre-adolescent and adolescent girls
  - Upper trap
  - Low trap/rhomboid
- Exam
  - Tender/knotted muscles, tender coracoid process
  - Scap winging?
- Imaging
  - Often none
- Posture, posture, posture
  - PT
  - Posture cues
  - Patience
Conclusion

- Eval and management varies greatly between athletes and non-athletes
- Early imaging leads to proper diagnosis and active management
- Long-term benefits not completely certain at this point
- Delay imaging in the non-athlete unless worrisome symptoms or exam findings
Thank you all very much!!!!!!

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