I'll Back Talk if I Want To!

Everyone has one, might as well take care of it.

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Women in Agriculture
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Objectives

• Define and discuss back pain and its causes
• Review the anatomy and common injuries
• Walk through the steps of diagnosis and treatment
• Review ways to prevent back pain
Disclosures

- No financial or commercial relationships with topics discussed
- Employed by CHI and TPN
- Member of AMSSM and ACSM
- Opinions are my own

Introduction

- Scribner, Nebraska native
- Attended Logan View High School, Midland University, ATSU-KCOM
- Completed Family Medicine residency in Lincoln in 2016
- Completed Sports Medicine fellowship in Wichita in 2017
Back Pain Stats

• Top 5 reason to seek PCP care
  – Affects 5-6% of US adults daily
  – 30% of US adults report pain in past 3 months
• First episode between 20-40 years old
  – Lifetime prevalence 60-84%
• Resolution in 6 months: 73%
• Chronic pain: 25-62% of patients
• Cost of pain: $100 billion in 2016
  – Direct: medical treatments
  – Indirect: missed days of work, reduced productivity

Definitions

• Acute back pain
  – <4 weeks of pain
• Subacute back pain
  – 4-12 weeks of pain
• Chronic back pain
  – More than 3 months of pain
• Radicular pain
  – Pain that radiates
  – May also have weakness or sensation changes
• Sciatica
  – Pain or numbness in posterior or lateral leg
Definitions

- Cervical Spine – Neck
- Thoracic Spine – Upper back
- Lumbar Spine – Low back
- Lordosis – Inward curve
- Kyphosis – Outward curve
- Scoliosis – Sideways curve

Anatomy

Intervertebral Disc

- Vertebra
- Disc:
  - Nucleus pulposus
  - Anulus fibrosus
- Spinal nerve root
- Spinal cord

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Common Injuries

Symptoms

• Soreness
• Radiation of pain down buttock and leg
• Burning/electric/tingling sensation
• Muscle spasm
• Weakness in leg or foot
• Numbness in leg or foot
• “Red flag”: fever, night sweats or pain, incontinence, weight loss, groin numbness
Initial Self Care

- Avoid bed rest!
- Modify activities
- Start OTC meds
- Ice first 48 hours then heat

Diagnosis

- History
  - OPQRSTi?
  - Trauma?
  - Age?
  - Neurologic changes?
  - Incontinence?
  - Signs of infection?
  - Weight loss?
  - Nighttime pain?
  - What makes pain worse or better?
  - History of cancer, osteoporosis, drug or steroid use?
  - Previous injury or surgery or infection?
Diagnosis

- Exam
  - Inspection
    - Spinal alignment, posture, gait
  - Palpation
    - Bone or soft tissue tenderness
  - ROM
  - Strength
  - Special Testing
    - Straight Leg Raise, Slump, Stork, FABER
  - Reflexes
  - Sensation

Differential

- Muscle strain
- Ligament sprain
- Inflexibility & muscle imbalance
- Joint arthritis
- Spinal stenosis
- Congenital issues
- Herniated disc
- Fracture
- Infection
- Inflammatory disease
- Tumor
- Abdominal or pelvic conditions
- Shingles
Mechanical Injuries

• Sprains & Strains & Joint inflammation
  – Paraspinals, piriformis, gluteals, SI Joint
• Injury to the muscle or surrounding soft tissues or joints
• May be due to overuse or sudden abnormal movements
• Can be spinal or pelvic

Inflexibility & Muscle Imbalance

• Tight hamstrings
• Weak core and pelvic musculature
Degenerative causes

- Stenosis or arthritis
- Develop over time or due to previous injury and pinch on nerves or soft tissues
- May be due to hip arthritis

Congenital Causes

- Scoliosis
- Transitional vertebrae
  - L5 or S1
- Spina Bifida Occulta
- Scheuerman’s kyphosis
  - Rigid kyphosis
    - Vertebral wedging
Disc Injury

- Bulging or herniated disc
  - Disc outer ring gets inflamed and torn
  - Disc inner jelly substance pushes into tear and presses on surrounding nerves
  - Pain worse with flexion

Fracture

- Due to trauma or overuse
- Compression
  - Falls
  - Osteoporosis
- Spondylolysis or Spondylolisthesis
  - Repetitive motion activity
  - Pain worse with extension
Inflammatory Causes

- Psoriatic Arthritis
- Rheumatoid Arthritis
- Ankylosing Spondylitis

Other

- Infection
- Abdominal/Pelvic disorder
  - Pancreatitis, kidney stone, UTI, AAA
- Shingles
- Tumor
  - Cauda equina, cancer metastasis
Testing

• Lab Work
  – Blood counts, urine sample, CRP, ESR, biopsy
• EMG/NCT
  – Localize nerve lesions

Testing

• Imaging
  – Indications
    • Trauma, red flag symptoms, longer than 6 weeks
  – X-rays
    • First choice
    • May not match symptoms
  – CT Scan
  – Bone Scan
  – MRI
    • High rate of abnormal in asymptomatic patients
      – Disc disease in 9-93%
      – Stenosis in 21% over age 60
Treatment – Oral Medication

- **Anti-inflammatories***
  - Ibuprofen (Motrin, Advil), naproxen (Aleve)
  - Meloxicam (Mobic), celecoxib (Celebrex)
  - Prednisone**
  - Aspirin

- **Muscle relaxers***
  - Cyclobenzaprine (Flexeril), tizanidine (Zanaflex), metaxalone (Skelaxin), diazepam (Valium)

- **Pain relievers**
  - Acetaminophen (Tylenol)**
  - Narcotic (Norco, Vicodin, Ultram, Percocet)***

- **Other**
  - Gabapentin (Neurontin)
  - Topiramate (Topamax)
  - Duloxetine (Cymbalta)

Legend:
* First Line
** Second Line
*** Special cases/not recommended

Treatment - Topical

- **Heat***
- **Ice**

- **Patches**
  - Lidocaine**
  - Flector**
  - Opioid***
  - Salon Pas**

- **Creams**
  - Voltaren, Pennsaid**
  - Icy Hot, BioFreeze, Aspercreme**

Legend:
* First Line
** Second Line
*** Special cases/not recommended
Treatment - Injections

- Epidural***
  - Best for disc herniation and radiculopathy
- SI Joint**
- Trigger Point**

Legend:
* First Line
** Second Line
*** Special cases/not recommended

Treatment - Bracing

- Lumbar Support OTC**
- Warm & Form Brace***
- Kinesio taping***

Legend:
* First Line
** Second Line
*** Special cases/not recommended
Treatment – Physical Therapy

• Exercises*
  – McKenzie Method
  – Spine stabilization
    • Balance and strengthen pelvic and core muscles
• Traction**
  – Inversion Table, Door Traction
• Modalities**
  – TENS
  – Estim
  – Ultrasound/Laser

Legend:
* First Line
** Second Line
***Special cases/not recommended

Treatment - Other

• Chiropractic Medicine*
• Osteopathic Manipulation*
• Acupuncture*
• Massage*
• Cognitive Behavioral Therapy*
  – Mindfulness, Relaxation, EMG Feedback
• Exercise*
  – Tai Chi, Yoga, Pilates
• Surgery***
• Herbal Therapies***

Legend:
* First Line
** Second Line
***Special cases/not recommended
Prevention - Exercises

Low Back Pain Exercises

- Cat and camel
- Pec deck
- Rollout
- Quadruped
- Glute kickback
- Side plank

Prevention – Lifting Techniques

LIFTING DO'S & DON'TS

- Lift as a team
- Team with ease
- Use your legs
- Use equipment
- Lift heavy loads alone
- Lift high loads
- Lift loads above the waist

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Prevention – Activity Modification

• Avoid backpack weight of more than 20% of body weight
• Avoid repetitive motion
• Ergonomic modification

Prevention - Work Place Exercises
Resources


Image Credits

- http://gallatinvalleychiropractic.com/Sciatica.html
- http://healthsurgical.com/curvature‐of‐the‐spine.html
- http://img.elephantjournal.com/wp‐content/uploads/2013/01/piriformis.jpg
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