WHY DO MY LEGS HURT?
Veins, arteries, and other stuff.

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Why do my legs hurt?

CONFLICTS OF INTEREST

• None
Why do my legs hurt?

TODAY’s GOALS

• What causes leg pain in a non-pediatric (😊) population?
• What to worry about, and what NOT to worry about
• What to do if you have peripheral vascular disease
Why do my legs hurt?

TODAY’s GOALS

• LOTS of questions... happy to serve.
USF Health
Florida Hospital!
Causes of Leg Pain

- **Non-vascular disorders**
  - Arthritis (joints)
  - Spinal Stenosis/disc problems (back)
- **Vascular (circulatory) Problems**
  - Veins (chronic venous insufficiency)
  - Arteries (claudication or limb threat)
Causes of Leg Pain

• **Non-vascular disorders**
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• **Not dangerous!!!**
Causes of Leg Pain

• **Non-vascular disorders**
  – *Arthritis (joints)*
  – *Spinal Stenosis/disc problems (back)*

• **Not dangerous!!!**
Non-vascular Leg Pain

• **Arthritis**
  – Occurs in JOINTS, not muscles
  – Worse when STARTING activity, better with exertion
Non-vascular Leg Pain

- **Arthritis - treatment**
  - NSAIDS
  - Be active
  - Joint replacement

  - NOT a predictor of anything bad overall!
Causes of Leg Pain

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• **Not dangerous!!!**
Non-vascular Leg Pain

• **Back problems:**
  – Compression of SPINE in the spinal canal, or
  – Compression of NERVE ROOTS as they exit the canal ("sciatica")
Non-vascular Leg Pain

• **Spinal Stenosis**
  – Can be related to exertion, but present AT REST
Spinal Stenosis

- Aches, numbness, tingling
- Usually from lower back, radiating down the legs, maybe even all the way to the toes
- Pain can be related to movement, but not always
  - Sometimes hurts just sitting, standing or even when in bed
  - Sometimes bending over helps
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Venous problems?

- Still not dangerous! (the chronic symptoms, that is)
Problems with circulation

• **Veins**
  – Varicose Veins
  – Blood clots
  – “Phlebitis” (inflammation)
Varicose veins
Problems with circulation

• **Veins**
  – Whole leg aches
  – Swelling
  – Both worse with gravity – worse at the end of the day and at night when you go to bed
What do we do for Chronic Venous Disease?

- Elevation
- Compression
- Sometimes ablative surgery
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Peripheral Arterial Disease (PAD)

• Now it can be a bit more worrisome.
• Risk:
  – Pain, limitation of lifestyle
  – Loss of limb (!)
  – Marker for increased risk of stroke or heart attack
• It’s our job to minimize all of these things.
Problems with circulation

- **Peripheral Arterial Disease (PAD)**: A disorder caused by *atherosclerosis* that limits blood flow to the limbs. “Hardening of the arteries”
Atherosclerotic Artery

Normal Artery

Beginning of Plaque Formation

Obstructed Lumen

Plaque
Atheroma
Atherosclerosis can affect any artery:

- **Your Brain**
  - TIA, Stroke

- **Your Heart**
  - Heart Attack, Angina

- **Your Kidneys**
  - High Blood Pressure
  - Poor Kidney function

- **Your Legs**
What causes PAD/IC?

- Things we **can’t** control:
  - Age, Gender, Heredity
What causes PAD/IC?

- Things we can’t control:
  - Age, Gender, Heredity

- Things we CAN control:
  - Smoking
  - Diabetes
  - High Blood Pressure (hypertension)
  - High Cholesterol
  - Excess Weight
  - Sedentary Lifestyle
Problems with circulation

- **Claudication**
- **Limb threatening ischemia**
  - Resting pain
  - Ulceration, gangrene
Problems with circulation

- **Claudication**
- **Limb threatening ischemia**
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  - Ulceration, gangrene
Claudication

• History
  – Exertional aching pain, cramping, tightness, fatigue in the legs
  – Occurs in muscle groups, not joints
  – Reproducible from one day to the next on similar terrain
  – Resolves completely with 2-5 minutes of rest
  – Caused by lack of blood flow
Lifestyle Consequences of Intermittent Claudication

• Social, personal, occupational activities may be limited by this leg pain
• Maximum walking speed is 1 – 2 mph versus 3.0+ mph
• 30% of IC patients have difficulty walking around the block
• 65% have difficulty walking ½ block
Problems with circulation

- **Claudication**
- **Limb threatening ischemia**
  - Resting pain
  - Ulceration, gangrene
Natural History?

- Claudication:
  - 75% will improve or stay stable
  - Amputation risk 1% per year

- “Limb threatening ischemia” – symptoms at rest
General Treatment Strategy

• Claudication:
  – CONSERVATIVE

• “Limb threatening ischemia” – symptoms at rest
  – AGGRESSIVE
Diagnostic Testing

• **Ultrasound**
  – Noninvasive
  – Blood pressures in legs (rest and exercise)
  – Duplex scanning
ABIs

• For example:
  – Arm pressure (top number) is 140
  – Ankle pressure 140
  – ABI is 1.00

  – Arm pressure is 140
  – Ankle pressure is 70
  – ABI is .50
ABI Guidelines

- 1.1 Normal
- 1.00 - .90 Asymptomatic
- .89 - .75 Mild PAD
- .74 - .50 Moderate PAD
- .49 or less Severe PAD

- >1.5 and diabetes? Invalid technique
Revolutionary New Treatment for PAD

• Exercise
• Stop Smoking
• Eat Well
Exercise Program

• **Walking**
  – Every day
  – Walk to point of pain, go a little further
  – Stop and rest
  – Walk again
  – GOAL: 30-45 minutes/day
  – 5-7 days a week
Eat Well

- American Heart Association
- American Diabetes Association
Medical Management

• **Smoking Cessation**
  — Classes, counseling
  — Exercise, diet, medication

• **Cholesterol control**
  — LDL < 100
  — Exercise, diet, medication

• **BP control**
  — 135/80
  — Exercise, diet, medication

• **Diabetes control**
  — Hgbc A1C < 7
  — Exercise, diet, medication

• **Antiplatelet therapy**
  — Aspirin, Plavix

• **Weight control**
  — Exercise, diet

• **Exercise**
  — Walking program
  — Medications to improve walking

Division of Vascular and Endovascular Surgery
Medications for PAD
Pletal (Cilostazol)

• Relieves the *symptoms* of intermittent claudication
• Allows you to walk further without pain
• Takes 4-8 weeks to show improvement
• Symptoms return if you stop the medication
• Contraindicated if you have congestive heart failure
Medications for PAD: Plavix (Clopidogrel)

• Antiplatelet medication
  – Keeps platelets from sticking together and causing a blockage
  – Similar to aspirin but stronger
  – Will not affect your symptoms of intermittent claudication
  – May reduce overall risk of dying of stroke or heart disease
Revascularization

• **Angioplasty/Stents**
  – Catheters, balloon
  – “Same Day” surgery

• **Bypass procedures**
  – With your vein
  – With “artificial” artery
  – Sometimes also clean out the artery (endarterectomy) and put a “patch” on it
  – Hospital stay several days
The graft is beveled for the anastomoses using a curved hemostat and the knife blade.
• Achiness in your legs, with swelling, worse at the end of a long day (or with skin changes)?
WHAT TO DO?

• Achiness in your legs, with swelling, worse at the end of a long day (or with skin changes)?
  – See a vascular specialist who is interested in treating chronic venous disease
  – **ELEVATION** and **STOCKINGS**
WHAT TO DO?

• Consistent pain in muscles (calves, thighs/buttocks) with activity that is relieved quickly with rest?
WHAT TO DO?

• Consistent pain in muscles (calves, thighs/buttocks) with activity that is relieved quickly with rest?
  – Tell your PCP! Overall risk factor modification
  – See a vascular specialist (but DON’T let them do anything until you have exhausted all safe/conservative options)
  – WALK to the trash can and THROW AWAY your cigarettes
WHAT TO DO?

• Pain in your forefeet, toes, often worse at night
• Better dangling
• A sore that won’t heal
  – See a vascular specialist ASAP
  – Make sure you discuss ALL options for intervention (open surgery as well as endovascular intervention)
WHAT TO DO?

• Aching pain in your legs at rest, changes with position?
  – Talk to your PCP. Maybe you need your back looked at...
WHAT TO DO?

• Pain in your joints?
  – Welcome to the club....
WHAT TO REMEMBER?

• Arterial problems cause pain in large muscle groups with activity, goes away with rest.

• Exertional pain?
  – Benign, but indicates plaque buildup

• Symptoms (or nonhealing) at rest?
  – Much more serious (if vascular)
Life is like riding a bicycle... you don’t fall off unless you stop pedaling!