

A PRACTICAL APPROACH TO OSTEOPOROSIS

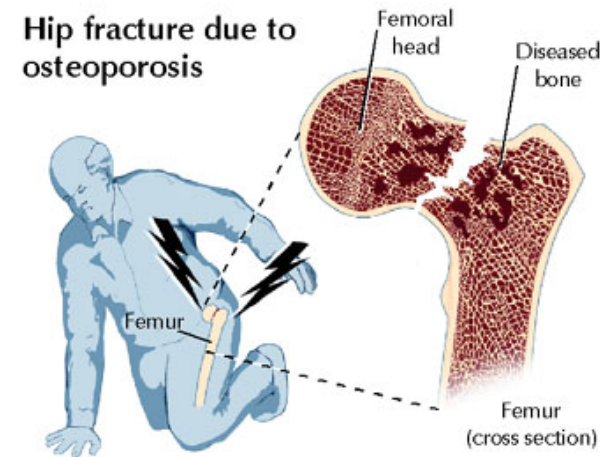
Ambulatory Morning Report
May 2, 2008

Outline

- Osteoporosis – a practical approach
 - Epidemiology – who cares?
 - High risk populations
 - Diagnosis
 - Who to screen?
 - Treatment

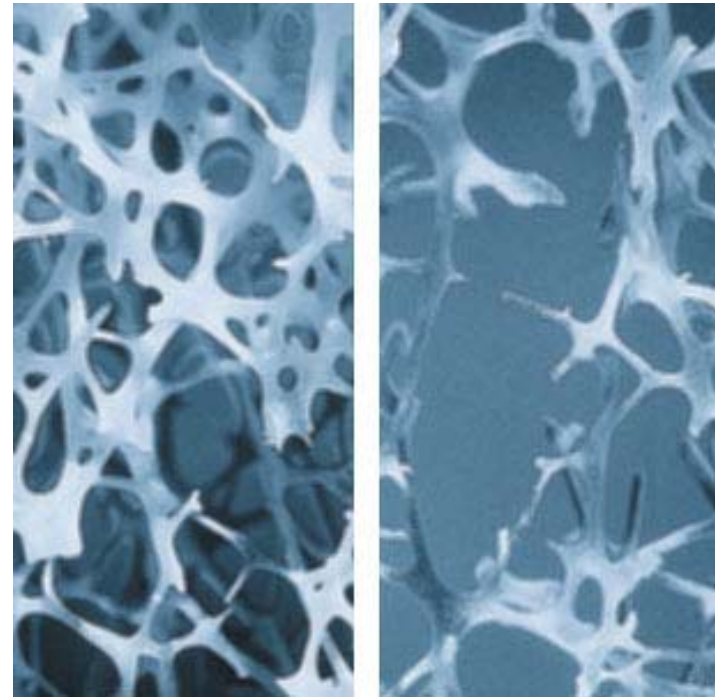
Osteoporosis – who cares?

- Low bone mass
- 44 million people in US
 - ▣ 55% of people over age 50
- Often times asymptomatic ...
- ... until something bad occurs



Pathophysiology

- Microarchitectural deterioration of bone tissue
 - ▣ Deficiency of sex hormones
 - ▣ Other risk factors



High risk patients

- Low body weight (<58 kg or 127 lbs)
- (+) family history fracture
- Post menopausal female
- Excessive EtOH / tobacco

What about men?

- Less frequent than women ...
- ... but still higher risk with age as sex hormones decrease
- Increase in fractures begins 10 years later than women

Classification

□ Primary: “aging”

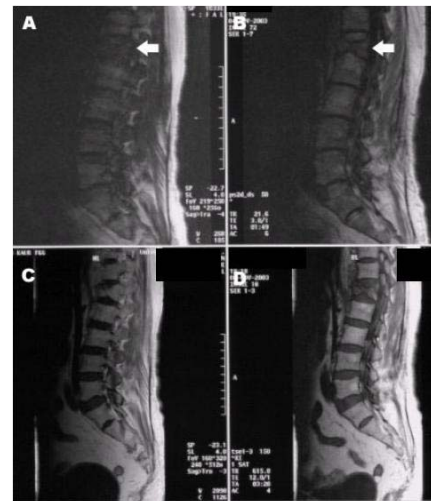
- Menopause
- Prolonged period of calcium deprivation
- EtOH / smoking

□ Secondary

- Medications
 - Steroids
 - Heparin
- Endocrine disorders
 - Hyperthyroid
 - HyperPTH
 - Hypogonadism
- Nutritional
 - Vit D deficiency
 - Calcium deficiency
 - EtOHism

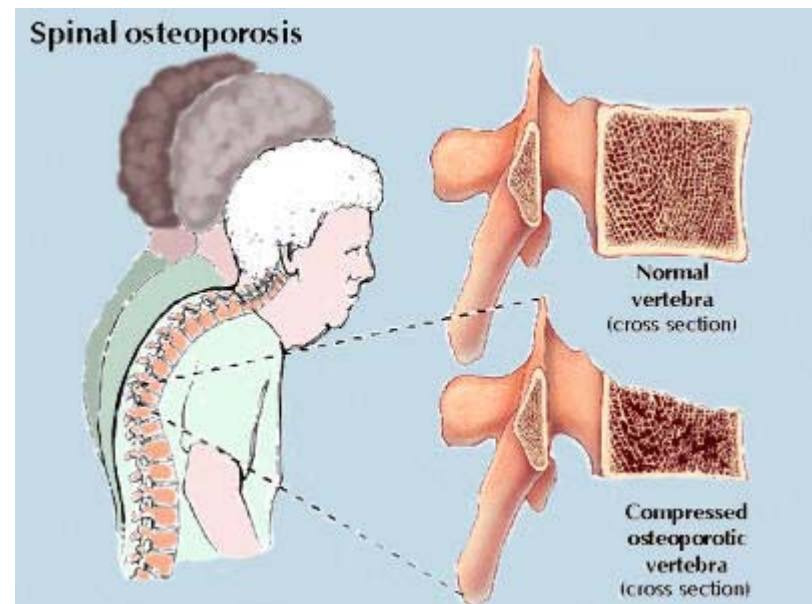
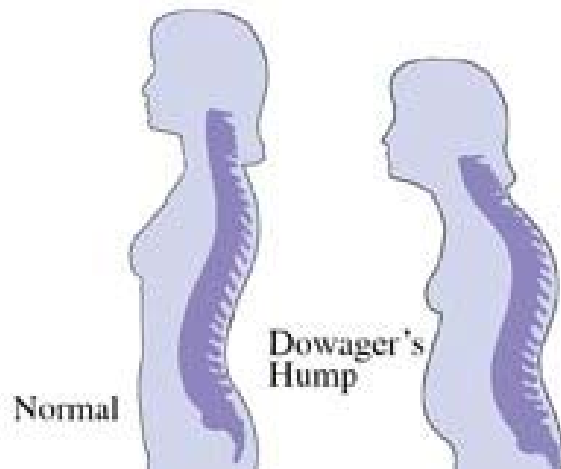
History

- Usually asymptomatic
 - ▣ Back pain with activity
 - ▣ ?Fragility fractures?
 - Diagnostic of osteoporosis regardless of BMD if secondary causes r/o
- Use history to assess for secondary causes!
 - ▣ Symptoms of hyperthyroidism?
 - ▣ Moon facies and buffalo hump?
 - ▣ Cachectic?



Physical findings

- Loss of height
- “Dowager’s hump”

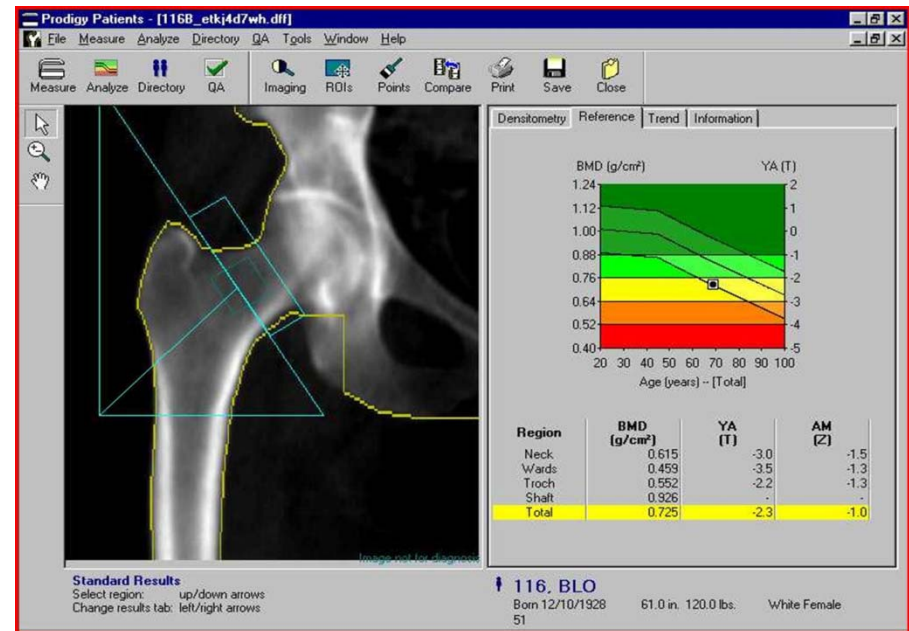


Lab work

- Assess for secondary causes if H&P suggestive
 - TSH
 - Vit D level (25-OH calciferol)
 - Chemistries
 - Ca / Phosphate
 - PTH
 - Testosterone, LH, FSH
 - 24h urine cortisol
 - Fe studies

Diagnostics

- DXA scan (Dual energy Xray absorptiometry)
 - Z-score: SD vs same age
 - Not used to diagnose low bone mass
 - T-score: SD vs young control
 - -1.0 is normal
 - Between -1.0 and -2.0 = osteopenia
 - **< -2.5 = osteoporosis**
- Use lowest T-score



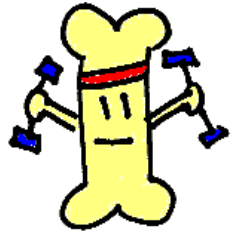
Screening guidelines

- USPSTF
 - Women > 65 y/o
 - Women > 60 y/o at increased risk
- Note how screening for men not uniformly recommended!

Treatment

- Lifestyle changes
- Medications
 - ▣ Calcium
 - ▣ Vitamin D
 - ▣ Bisphosphonates
 - ▣ Hormonal therapies

Lifestyle changes



- No more tobacco and EtOH!
- Exercise – weight bearing
 - ▣ Bones must bear weight to gain bone mass
 - ▣ Running, walking, weight lifting
 - ▣ Does NOT include biking, swimming

Calcium and Vitamin D

- Must provide the building blocks to make new bone
- Reduces rate of loss of bone
- Unclear if it decreases fracture risk
- Make sure patients are getting enough of it!
 - ▣ 1200 – 1500 mg Calcium daily
 - ▣ 800 IU of Vitamin D daily

Bisphosphonates

- Inhibit osteoclast activity
- Increases bone density
- Decreases fracture risk
- Remember cautions
 - ▣ Sit upright >30 min afterwards
 - ▣ Take with lots of fluids!

Hormonal therapies

- Raloxifene (SERM)
 - ▣ Does NOT appear to increase CAD
 - ▣ Lowers breast cancer risk
 - ▣ Not as good as bisphosphonates but better than nothing
- Estrogen
 - ▣ WHI showed increased risk of thromboembolic disease
 - ▣ Risk outweighs benefit of decreased osteoporosis

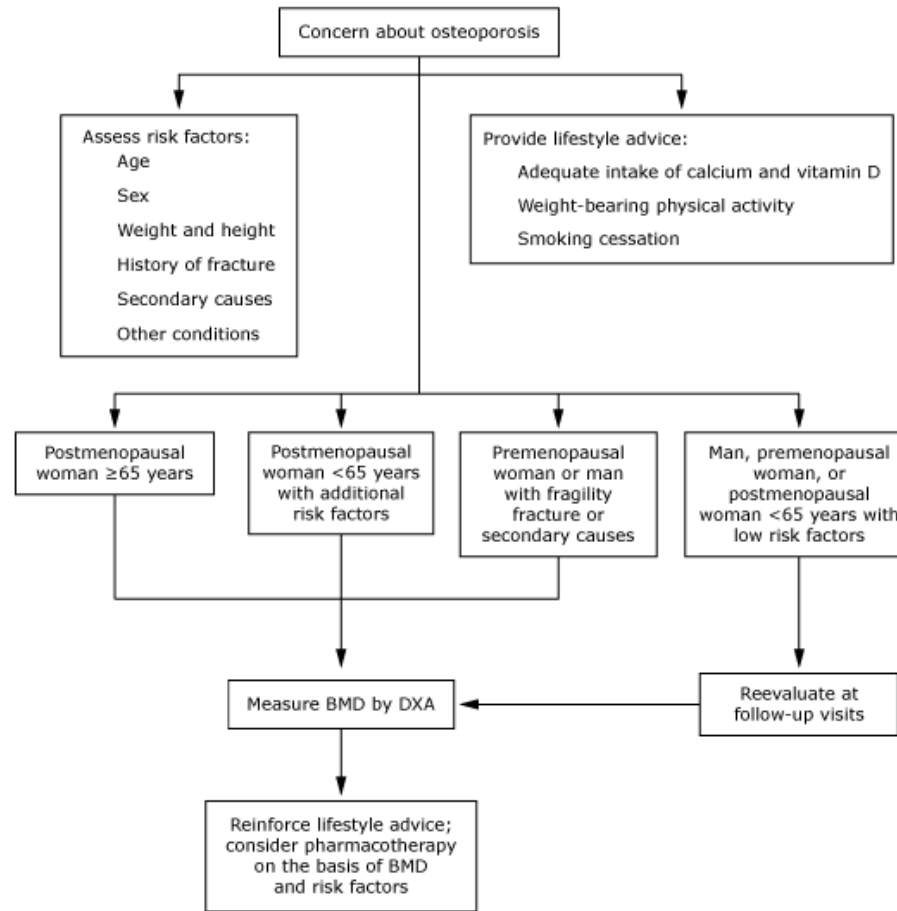
Follow up

- Repeat DXA scan to assess for improvement
 - ▣ No consensus as to when and how often
- Stable or improved T-score is good
- Most groups recommend rechecking DXA one year after starting therapy
 - ▣ Space out if normal

An ounce of prevention ...

- Peak bone mass usually occurs in 30's
 - ▣ “Senile osteoporosis is a pediatric disease”
- Must optimize peak bone mass formation!
 - ▣ Calcium intake > 1200 mg qdaily
 - ▣ Vit D intake > 400 IU in younger, 800 IU in older
 - ▣ Encourage exercise (weight bearing)

Algorithm



Take home points

- Everyone here should get adequate Ca / Vit D intake (1200 mg and 400 IU)
- Screen all women >65 and >60 at high risk
- High risk includes low body wt, EtOHic, smoker, (+) FHx, long term use of medication known to cause osteoporosis
- T score < -2.5 or fragility fracture makes dx of osteoporosis
- Bisphosphonates are 1st line therapy, assess for DXA improvement in one year after starting