Atypical Bisphosphonate Associated Femur Fractures: The Orthopaedic Perspective

4th Annual Northern California Bone and Mineral Symposium
Monterey, California
November 6-7, 2009
Disclosures

None
Goals

Discuss

• Risks Factors
• Presentation
• Diagnosis
• Treatment
• Future Directions
Some minor points......

- NOT Only Subtrochanteric
  - Includes Diaphyseal Femur Fractures
  - These are Atypical Alendronate Associated Femur Fractures
Some minor points……

• These ARE Stress Fractures

• Reports of other bones available
  - Armamento, Calcif Tissue Int 2009
Diagnosis

• **Presentation**
  - Alendronate Use Commonly Associated
    • Likely > 5 years duration
  - ? Role of Concomitant Medications
    • Estrogens, SERMs
    • Corticosteroids
  - Prodrome of Leg Pain
    • Workup should include Pelvis / Hip / Femur Films
    • MRI in Absence of Radiographic Findings?
Prodrome Of Pain

Image Hip

Before Alendronate Therapy

After Alendronate Therapy
Prodrome Of Pain

Image Hip AND Femur
Role of the MRI

- To Be Defined in Absence of Radiographic Findings
- Coronal T-1 Weighted Image
  - 100% Sensitive for Occult Femoral Neck Fractures
  - T1 / T2

Iwamoto, JOS, 2002.
Diagnosis Made – Treatment?

- After Fracture?
  - EASY?
    - Fix It
    - Check Ca++
    - Check Vit. D

- Before Fracture?
  - LESS EASY
    1. Must Be Made NonWeightbearing
    2. Fix It?
    3. Role of Pharmacotherapy
The Contralateral Limb?

- Incidence of Bilateral Fractures Unknown
- Reports of Fracture despite radiographs and bone scan
- When to get MRI?
- When to prophylactically fix?
- Can we develop a “Mirels Criteria”? Do we need one?

A “Forteo Rescue”?  

- Evidence to support use of teriparatide after long term alendronate  

- Anecdotal reports of Delayed Union without Forteo  
  - No Evidence that BPs Tend To Delayed Union  

- Will Patients Tolerate Administration?  

- Must Check (and Normalize) Ca++, Vit. D
Orthopaedic Perspective

• **Appropriate Care of Osteoporotic Patients Will Require Multispecialty Cooperation**

• **Stress Fractures are Likely a Risk, however, the Benefits of BP Administration Outweigh the Risks**
Thank you

Dennis Black, PhD
Rosanna Wustrack, MD
Shane Burch, MD