

# CASE REPORT

## General Past Medical History

JM is a 46-year-old man with a developmental disability secondary to perinatal hypoxic ischemic encephalopathy. Medical complications of his birth injury include profound mental retardation, seizures, scoliosis, and mild spastic quadriplegia. However he has always been fully ambulatory with minimal difficulty walking. He received phenobarbital for many years for seizures, but this replaced several years ago with Kepra with continued good seizure control.

## History of Fractures

### 1987

At the age of 25 (1987) he sustained a fracture of the neck of the left hip which was corrected surgically by open reduction and internal fixation with three Knowles Pins through the femoral neck. It appeared that he fell on his buttocks after bumping into a staff member in the living unit. There was no evidence externally of physical abuse. Osteoporosis was not considered due to the patient's gender and young age.

### 2001

In July 2001 he sustained a fracture of the left ankle.

### 2006

In March 2006 he was noted to be favoring his left leg. Left hip x-ray taken at that time revealed possible healing fracture at the site of the old fracture.

In June 2006 JM's primary care physician ordered a D XA scan which revealed T scores of -3.3 for the right femoral neck, -3.6 for the total right hip, and -3.3 for the L1-L4 spine.

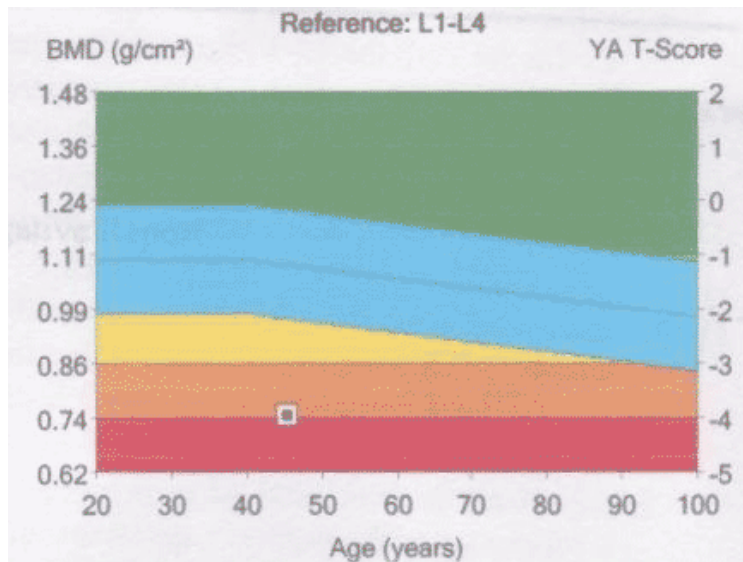
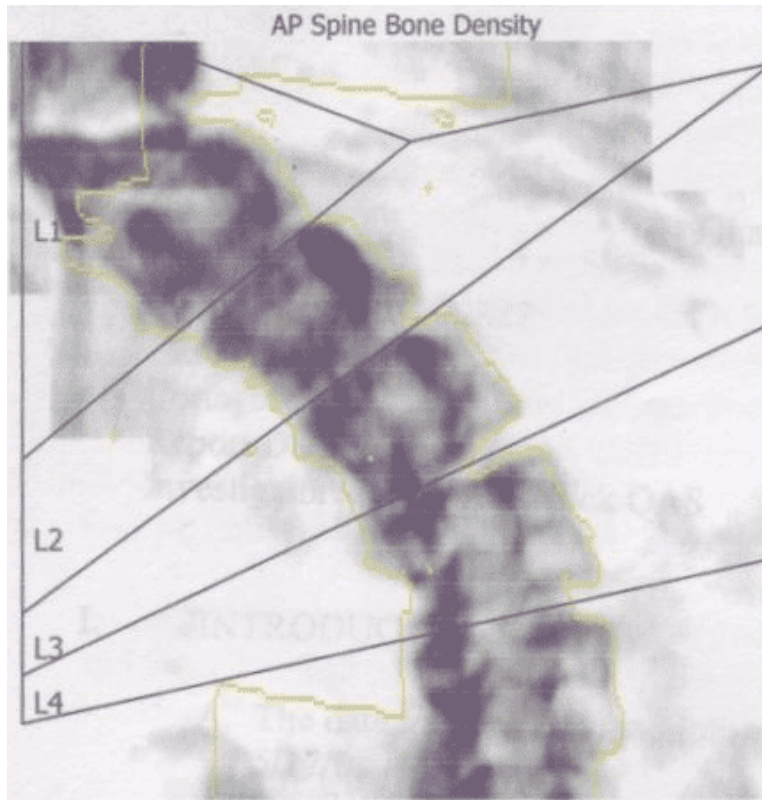
Miacalcin nose spray was started June 29, 2006. Fosamax was considered but was felt to be contraindicated because of GERD.

### 2008

Repeat DXA scan March 11, 2008 revealed a T score -3.1 for the right neck, -3.6 total right hip, and -3.9 for the L1-L4 spine.

On May 17, 2008 he sustained a fracture of the neck of the right hip. He was noted beforehand to be non-weight-bearing, but no injury or fall was witnessed. There were no external signs of injury to the right hip. He then underwent a second open reduction internal fixation- this time of the right hip.

Recently he was placed on Forteo.



| Region | <sup>1</sup><br>BMD<br>(g/cm <sup>2</sup> ) | <sup>2</sup><br>Young-Adult<br>T-Score | <sup>3</sup><br>Age-Matched<br>Z-Score |
|--------|---|--|--|
| L1     | 0.773                                       | -3.3                                   | -2.1                                   |
| L2     | 0.809                                       | -3.6                                   | -2.5                                   |
| L3     | 0.716                                       | -4.3                                   | -3.2                                   |
| L4     | 0.692                                       | -4.4                                   | -3.2                                   |
| L1-L4  | 0.748                                       | -3.9                                   | -2.8                                   |

Image not for diagnosis

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0.60x1.05 21.0:%Fat=24.7%

0.00:0.00 0.00:0.00

Verify bone is centered and there is sufficient tissue next to bone.

Filename: pinkcj6fr8.dfx

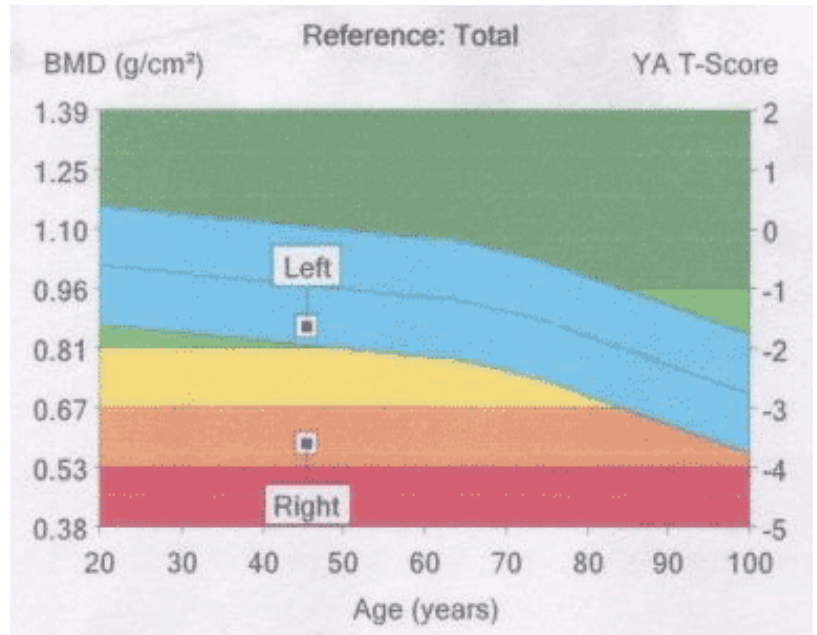
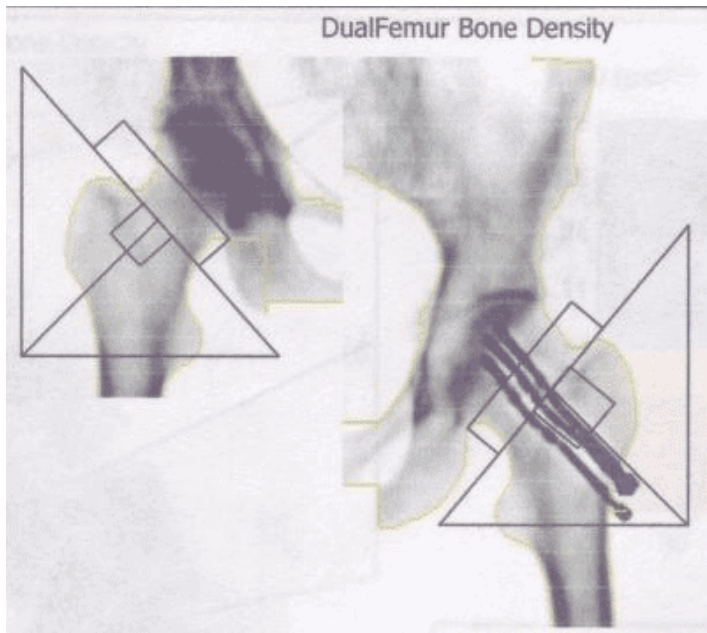
Scan Mode: Standard;OneScan 37.0 µGy

1 - Statistically 68% of repeat scans fall within 1SD ( $\pm 0.010$  g/cm<sup>2</sup> for AP Spine L1-L4)

2 - NHANES (ages 20-30) / USA (ages 20-40) AP Spine Reference Population (v107)

3 - Matched for Age, Weight (males 25-100 kg), Ethnic

11 - World Health Organization - Definition of Osteoporosis and Osteopenia for Caucasian Women:  
 Normal = T-Score at or above -1.0 SD; Osteopenia = T-Score between -1.0 and -2.5 SD;  
 Osteoporosis = T-Score at or below -2.5 SD; (WHO definitions only apply when a young healthy Caucasian Women reference database is used to determine T-Scores.)



| Region     | BMD <sup>1</sup><br>(g/cm <sup>2</sup> ) | Young-Adult <sup>2,7</sup><br>T-Score | Age-Matched <sup>3</sup><br>Z-Score |
|------------|--|---------------------------------------|-------------------------------------|
| Neck       |  |                                       |                                     |
| Left       | 0.873                                    | -1.5                                  | -0.3                                |
| Right      | 0.673                                    | -3.1                                  | -1.8                                |
| Mean       | 0.773                                    | -2.3                                  | -1.1                                |
| Difference | 0.200                                    | 1.5                                   | 1.5                                 |
| Total      |  |                                       |                                     |
| Left       | 0.864                                    | -1.6                                  | -0.7                                |
| Right      | 0.580                                    | -3.6                                  | -2.7                                |
| Mean       | 0.722                                    | -2.6                                  | -1.7                                |
| Difference | 0.284                                    | 2.0                                   | 2.0                                 |

1 - Statistically 68% of repeat scans fall within 1SD ( $\pm 0.033$  g/cm<sup>2</sup> for DualFemur Total Mean)

2 - NHANES (ages 20-30) / USA (ages 20-40) Femur Reference Population (v107)

3 - Matched for Age, Weight (males 25-100 kg), Ethnic

7 - DualFemur Total Mean T-Score difference is 2.0. Asymmetry is Significant.

11 - World Health Organization - Definition of Osteoporosis and Osteopenia for Caucasian Women: Normal = T-Score at or above -1.0 SD; Osteopenia = T-Score between -1.0 and -2.5 SD; Osteoporosis = T-Score at or below -2.5 SD; (WHO definitions only apply when a young healthy Caucasian Women reference database is used to determine T-Scores.)

Printed: 9/4/2008 1:51:44 PM (10.50); Filename: pinkj6fr8.dfx; Right Femur; 14.5:%Fat=28.3%; Neck Angle (deg)= 48; Scan Mode: Thin 9.0  $\mu$ Gy; Left Femur; 13.9:%Fat=25.9%; Neck Angle (deg)= 50; Verify there is sufficient tissue above and below femoral neck.; Scan Mode: Thin 9.0  $\mu$ Gy