



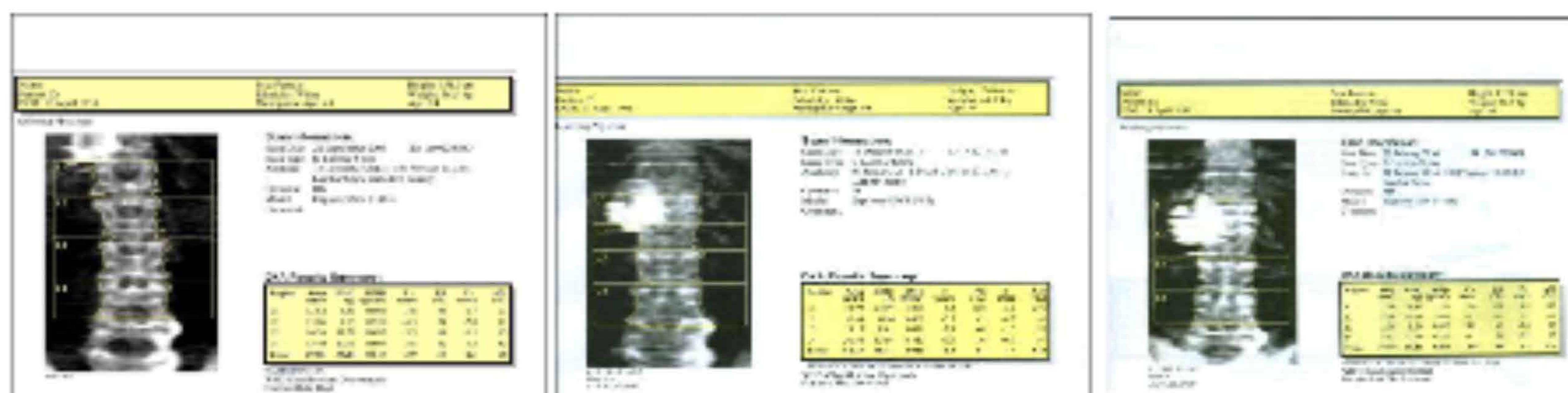
ECHINOCOCCAL CYST AS RARE CAUSE OF INCREASED LUMBAR BONE MINERAL DENSITY

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A 80-year old female with known osteoporosis was reassessed for bone mineral density (BMD) measurement. Her baseline BMD and T-score of lumbar spine (L1-L4), measured 2004 were 0.699 g/cm², -3.5 SD, T-score of total left hip was 0.618 g/cm², -2.7. She was treated with alendronate 70 mg, cholecalciferol 7000 IE per week and calcium supplements. On control 2013 dual x-ray absorptiometry scan (DXA) of lumbar spine and hip, BMD of lumbar spine L1-L4 was 0.910 g/cm², T-score was -1.2 SD. BMD and T-scores for singly lumbar vertebrae were: L1 1.384 g/cm², +4.2 SD; L2 0.667 g/cm², -3.3 SD; L3 0.654 g/cm², -3.9 SD; L4 0.785 g/cm², -3.0 SD. The BMD and T-score of the neck were 0.463 g/cm², -3.5 SD and of the total hip were 0.590 g/cm², -2.9 SD. On examining of the picture, we identified a calcified mass in the projection of L1 vertebra. We repeated the analysis of DXA scan and excluded the calcified formation and L1 vertebra. BMD of analyzed lumbar spine (L2-L4) was 0.701 g/cm², T-score was -3.4 SD. BMD and T-scores were: L2 0.614 g/cm², -3.8 SD; L3 0.642 g/cm², -4.0 SD; L4 0.785 g/cm², -3.0 SD. In 2016 BMD of analyzed lumbar spine (L3-L4) was 0.722 g/cm², T-score was -3.4 SD. BMD and T-scores were: L3 0.667 g/cm², -3.8 SD; L4 0.778 g/cm², -3.1 SD, superposition of calcified formation was on L1+L2. We checked her previous examinations. 2 years before she had CT of abdomen because of suspected gastric carcinoma. Three centimeters large calcified Echinococcal cyst (EC) was found, which was previously unnoticed. On 2013 DXA scan EC was projected to the L1, on 2016 on L1+L2 because of the development of kyphosis and consequently reduction of height. **Discussion** Artifacts can interfere with BMD measurements. The study showed that bra wires and calcium carbonate pills positioned lateral to the spine can change BMD. Several medical conditions, such as osteophyte formation, osteoarthritis, ankylosing spondylitis, vertebral fractures, aortic calcifications, can also increase BMD. However after examining the literature on Pubmed, to our knowledge there was no cases of falsely increased BMD of lumbar spine because of calcified Echinococcal cyst.



Picture 1: Baseline BMD measurement (2009)

Picture 2: Echinococcal cyst in the projection of L1 (2013)

Picture 3: Echinococcal cyst in the projection of L1+L2 (2016)

