A 67 y.o. woman with persistent low back and pelvic pain.

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Teaching case Bone # 2

- A 67 y.o. woman presents to the hospital with persistent low back and pelvic pain.
- History of colon cancer with surgical and radiation treatment 5 years before.
- No other symptoms, no weight loss.
- Physical examination reveals good general condition.
- Plain X-ray shows moderate spondylosis, no other remarks.
- Laboratory tests within normal limits.
Which of the following is correct?

A) Colon cancer rarely produces bone mets, so a bone scan is not useful.
B) A bone scan could elucidate the etiology of pain in this case.
C) Bone mets are very common in colon cancer, and decide treatment strategy.
D) A bone scan has low sensitivity for bone mets in colon cancer.
Which of the following is correct?

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B) A bone scan could elucidate the etiology of pain in this case.

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D) A bone scan has low sensitivity for bone mets in colon cancer.
Comments:

• Colon cancer is not a frequent source of bone metastases.

• A bone scan may detect metastases from colon cancer as well as other lesions that could be responsible for the patient’s symptoms.
• The patient was injected with 740 MBq (20 mCi) of 99mTc-MDP.
• Anterior, posterior whole body images taken 3 hours later.
Bone scan

Which of the following is correct?

• A) Bone metastases involving pelvis.
• B) Non-specific bone lesions.
• C) Sacrum fractures due to loss of bone matrix.
• D) Sacroileitis.
• E) Bone infection in a patient with low immune response.
Which of the following is correct?

- A) Bone metastases involving pelvis.
- B) Non-specific bone lesions.
- C) Sacrum fractures due to loss of bone matrix.
- D) Sacroileitis.
- E) Bone infection in a patient with low immune response.
Bone scan

Comments:

• The bone scan shows the typical appearance of “H” fracture due to loss of bone matrix.
• This is a frequent finding in posmenopausal women but also in patients having received radiotherapy for colon or genital carcinoma.
• CT scan confirms bone fractures involving the sacrum.
Bone scan

- Different patterns of sacrum fractures.
- Note typical additional fractures (arrows in B, D, E).
Teaching points:

• Spontaneous” fractures (usually secondary to minimal trauma) are not rare in posmenopausal women due to loss of bone mineral matrix.
• Radiotherapy can also produce alteration of bone matrix.
• The bone scan pattern is typical and should not be confused with bone metastases.
• Sacrum fractures usually adopt the characteristic “H” pattern.
• Other lesions of the iliopubic and ischiopubic branches as well as vertebral and rib fractures are frequent.