Case36 Print

Location: Emergency room

Vitals: Temperature is 36.7C(98F), blood pressure is 120/76 mmHg, pulse is 80/min, and respirations are 16/min. Height is 5'6"(167.5cm) and weight is 60kg (132.3lb)

HPI:
A 68-year-old white female who lives alone at home is presented to the ER because of the sudden onset of severe low back pain while removing a turkey from the freezer. The pain is 10/10 in severity, constant, and there is no radiation. She has never had this pain before. She denies weakness, sensory changes in the legs, or bowel or bladder incontinence. She also denies any fever, chills, loss of appetite, and loss of weight. Since the age of 53, she has been postmenopausal and has not taken any hormone replacement therapy. Her only other medical problem is high blood pressure, for which she takes hydrochlorothiazide. She has had no surgeries. She smokes one pack of cigarettes per day, for the past 40 years. Occasionally, she drinks alcohol and has no known drug allergies. Family history is not significant. Her last Pap smear was six years ago, and it was normal. She had her last mammogram one year ago, and it was normal. A colonoscopy performed five years ago was also normal. The rest of ROS is negative.

How would you approach?
Back pain has broad differential diagnosis. Since her vital signs are stable, perform a physical exam.

Order:
Select General, HEENT, Skin, Lymph nodes, Lungs, Heart, Abdomen, Rectal, Extremities, and Neurological.

Results:
Patient is moaning in severe pain. Severe tenderness is present over the L3 and L4 area. Straight-leg raising test (SLR) at 90 degrees is negative. Anal sphincter tone is normal. Neurological examination is unremarkable. The rest of the exam is normal.

Order:
IV access, stat
IV Toradol, stat, one dose
CBC with diff, stat
BMP, stat
Serum calcium, stat
ESR, routine
Spine x-ray, lumbosacral, stat

*Call me when the results are available.

Results:
CBC, BMP, calcium, and ESR are normal.
Spine x-ray shows diffuse osteopenia and a vertebral compression fracture at L3 and L4.

*Order brief history.

Results:
Patient is feeling much better

Order:
SPEP, routine (to rule out myeloma)
TSH, serum, routine
Naproxen, oral, continuous
Calcium carbonate, oral, continuous
Vitamin D therapy, oral, continuous

Fosamax (alendronate), oral, continuous
Calcium enriched diet

Counseling:
Patient education
Smoking cessation
Limit alcohol intake
Regular exercise
Medication compliance
Seat belt use

*Change the location of the patient to home. Schedule an outpatient appointment in 3-7 days.

Order:
Once she comes, order extremities and neuro exam
DEXA scan, routine

Final diagnosis:
Osteoporotic vertebral compression fracture

DD of acute back pain (Extremely important for Step-3 MCQS):
Vascular causes:
Acute aortic dissection: Tearing abdominal pain radiating to the back, and associated nausea and vomiting are present. Clues on the exam are hypertension, unequal upper-extremity blood pressure, and new onset of an aortic insufficiency murmur.
Abdominal aortic aneurysm: Pain radiating to the back, unstable vital signs, abdominal bruit, and pulsatile abdominal mass are the clues.

Mechanical:
Vertebral fracture with or without cord compression (osteoporosis or malignancy): Risk factors for osteoporosis (smoker, thin body habitus, steroid use, etc.) are present. Systemic features suggestive of malignancy (weight loss, loss of appetite) may be present. History of lifting heavy objects may be present. Spinal tenderness will be present. SLR is usually negative. Malignancy should be ruled out in elderly patients, especially multiple myeloma; Age-appropriate screening procedures should be done.

Disk prolapse with or without cord compression: Back pain, buttock pain, and paresthesias radiating down the leg in a dermatomal distribution is a classic presentation. History of lifting heavy objects is often present. SLR test at or above 60^0will be positive.

Lumbar strain: Paravertebral muscle spasm without focal spinal tenderness is present. SLR will be negative. Muscle relaxants and NSAIDs are sufficient.

Cauda equina syndrome: Sudden onset of back pain, lower extremity weakness, bowel or bladder incontinence, and saddle anesthesia are the clues.

Epidural hematoma: Sudden onset of back pain, with underlying coagulation disorder (hereditary or anticoagulant use) is present.

Spinal epidural abscess: Predisposing factors, such as DM, renal failure, and IV drug use, etc., are present. Fever, radicular pain, elevated white count, and with or without cord compression is seen.

Management:
Basic labs to rule out infection, such as CBC, are indicated. ESR is useful to find out any occult malignancy such as myeloma or any evidence of infection. Spinal x-rays are indicated in most of the patients, except if the patient has lumbar strain. MRI is indicated only when there are neurological manifestations. Referral to an orthopedic surgeon or neurosurgeon may be needed if the MRI is abnormal. Myeloma should be ruled by SPEP and/or urine Bence-

Jones protein. NSAIDs (better than narcotics), and early mobilization is the main treatment for vertebral fractures. Secondary causes of osteoporosis (hyperthyroidism) should be looked for if there is a suspicion. Obtaining TSH is routine in these patients. Calcium, vitamin D, and bisphosphonates should be given to prevent the osteoporosis and second fracture. Counseling regarding the risk factors (as advised above) is also very important. Surgery is indicated, if there is no improvement with conservative management.

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