Case 9

You are a Foundation Year 1 doctor at General Hospital working in the Emergency Department under consultant Dr Mathis.

Your bleep number 5431

Patient details

Patient name: Doreen Smith
Date of birth: 12th March 1940
Patient number: X200321123

History

Mrs Smith was brought in following a fall from standing at the care home where she resides. She is currently complaining of severe hip pain and is unable to stand.

Her past medical history includes hypertension, type 2 diabetes mellitus, chronic obstructive pulmonary disease, and breast cancer (15 years ago).

The patient's medications are amlodipine, metformin, and Seretide® (formetrolol and budesonide.) She has no known drug allergies.

Observations
Oxygen saturations: 93% (room air)
Respiratory rate: 19 breaths per minute
Heart Rate: 110bpm
Blood pressure: 146/94mmHg
Temperature: 36.1°C

On examination the patient's left leg is shortened and externally rotated. The patient reports 9/10 pain on palpation over the greater trochanter of the left hip. There is a soft systolic murmur on auscultation, loudest over the aortic valve, and a slight bilateral expiratory wheeze.

Two wide bore cannulas are inserted and appropriate bloods are taken.

A bedside pelvic x-ray is ordered, which is shown below:

Patient: Doreen Smith
DOB: 12/03/1940 Hospital #: X200321123
Time: 09:50 Date: 04/05/2023
Position: AP

Case courtesy of Mark Holland, Radiopaedia.org, rID: 22056

Task

Please report the pelvic radiograph on hospital notepaper. You do not need to use a structured approach, but should highlight key features. Suggest the next steps in management.

Hospital: General Hospital **Patient name:** Doreen Smith

Ward: ED **Date of birth:** 12/03/1940

Consultant: Dr Mathis **Hospital number:** X200321123

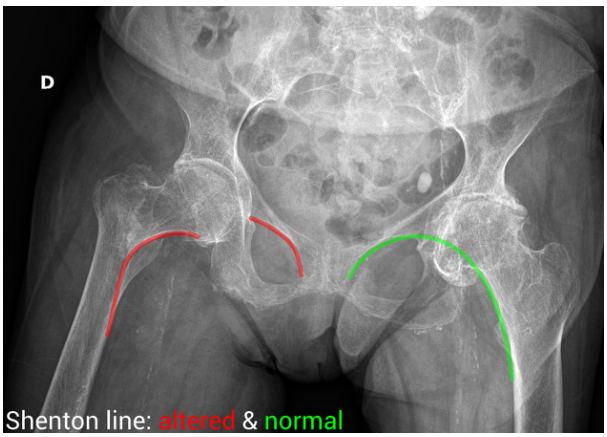
Date/Time	Documentation
04/05/2023	MARK GOODING FY1
1000	Report on pelvic radiograph of Doreen smith, DOB
i.e. today's date	12/03/1940, recorded today (04/05/23) at 0950. Patient
	presented following fall, is unable to bear weight and is
	complaining of pain. Her left leg is shortened and externally rot-
	ated, and she reports 9/10 pain on palpation of her left hip.
	Rotation and exposure are adequate. Position is AP
	Alignment: alignment of left hip joint is disrupted, with a visible
	step off between the femoral head and neck (i.e. disruption of
	Shenton's line) suggestive of a subcapital fracture.
	Bones: no reduction in bone density present
	Cartilage: no suggestion of a reduction in cartilage or joint space
	Soft tissue: appear normal.
	Impression: subcapital neck of femur fracture
	(Garden classification III or IV, i.e. partial or full displacement)
	Plan:
	1. Ensure adequate pain control (morphine)
	2. Surgical review M. Gooding
	MARK GOODING (FY2)
	Bleep: 5432

Explanation

Overall, the aim of a good x-ray interpretation isn't to definitively spot a diagnosis but to describe all information in a way that can be easily understood by your colleagues in the orthopaedic team. Focus on the main areas i.e. bones, soft tissue, cartilage and joints. Describe any breaks in terms of anatomical location, type of fracture (if possible) using an appropriate staging system and always give a clinical background.

What is Shenton's line?

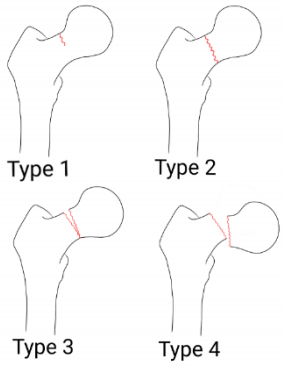
It's an imaginary curved line on the inferior border of the pubic ramus along the border of the beck of the femur. It should be continuous, smooth and interruption can indicate pathology such as DDH or a NOF. NOF's are possible with a an unbroken line but if disrupted it's usually a big clue of what diagnosis is present in the radiograph



Case courtesy of Leonardo Lustosa, Radiopaedia.org, rID: 98970

Garden staging

Simply put garden staging is a classification which describes the degree of displacement of a NOF as seen on an AP X-ray. There's 4 types



Stage I: incomplete fracture line or impacted fracture

Stage II: complete fracture line, non-displaced

Stage III: complete fracture line, partial displacement

Stage IV: complete fracture line, complete displacement

Source: https://geekymedics.com/fractured-neck-of-femur/