

Case: hypercalcemia: Student's Handout

PART 1

Fatma is 41 years old school teacher in a private school. She comes to Dr. Khalid because of 6 months history of increased thirst and frequent urination. She also has been complaining of generalized bony aches and pains, fatigue and lethargy. She checked her blood glucose at a local health center and was found to be normal.

Past medical history

History of right renal stone diagnosed 7 months ago.

Allergy and medications

Fatma is allergic to penicillin.

Family history

Her parents are alive and well. She has one brother who has bronchial asthma.

Social history

Fatma has been married for 12 years. She has 2 children. She works as a teacher in a private school. She teaches intermediate grade students. Lately, she has been unable to complete all classes due to fatigue and aches and pains in her legs.

Part 2, clinical examination

Fatma is 1.65 meters tall. Her weight is 76 kg.

Vital signs:

Pulse rate: 78 regular

BP: 130/90

Temperature: 37.0

Respiratory rate: 16

Neck examination: no masses felt

Cardiovascular and respiratory systems:

Normal

Abdominal examination:

Normal

Part 3, Investigations

Dr. Khalid explained to fatma that she needs to do general hematologic and biochemical investigations.

The results of the investigations are summarized below:

Complete Blood Count

Hemoglobin	12.5 g/100ml
White cell count	4500 mm ²
MCV	83 fl
PCV	41 %

Biochemistry

Calcium	3.2 (normal 2.1-2.5 mmol/l)
Phosphorous	0.45 (normal 0.81-1.58 mmol/l)
BUN	6.7(normal 2.5-6.0 mmol/l)
Creatinine	65 (normal 53-115 macmol/l)

Follow -up of the case

Parathyroid hormone (PTH) level: 21 pmol/l (normal 1.5-6.9 pmol/L)

Repeat corrected calcium level: 3.1 mmol/l

24 hour urinary calcium: 450 mg (normal 100-250 mg /24 hr)

Radiological investigations:

Technetium-99m sestamibi scan: right lower parathyroid adenoma

MRI neck: right lower parathyroid mass

DXA scan: osteoporosis at hip (T-score -2.9)

Dr. Khalid consults the endocrine surgeon for possible parathyroidectomy.

Learning Objectives

By the end of the session the students should be able to:

1. Discuss the common causes of polydipsia and polyuria
2. Discuss the different presentations of hypercalcemia
3. Identify symptoms of hyperparathyroidism
4. Explain the abnormal findings in the history
5. Discuss the relevant laboratory and radiological investigations
6. Discuss the treatment of primary hyperparathyroidism

Instructions to the students

Please read the case carefully, individually or in the group before you are coming to the "Case based learning" session. Look at the objectives and try to fulfill these objectives. Prepare for the case well by referring to some suggested reading list. The tutor in CBL session will ask you to go through the case and answer some of his stimulating questions to ensure that you have achieved the objectives