



**Al-Mustansiriyah University**  
**College of Medicine**  
**Small Group Learning Committee**

**Scenario 5: Medical Chemistry Department**

**Diagnosis: Calcium Metabolism - Hyperparathyroidism**

A 42-year-old female presents to the outpatient clinic with complaints of vague **abdominal discomfort, weakness and fatigue, and bone pain.**

The patient gives no personal or family history of medical problems. The patient did remember that she suffers from frequent urinary tract infections and has had several episodes of kidney stones.

Her physical examination was within normal limits. The patient had a normal complete blood count (CBC), and electrolytes revealed a significantly elevated calcium level and low phosphorus level.

**The Learning Objectives:**

1. Be familiar with calcium metabolism.
2. Know about regulation of serum calcium including the roles of parathyroid hormone and calcitonin.
3. Explain the relationship between vitamin D3 and calcium.
4. Discuss the Hyperparathyroidism (primary) NICE guideline.

**References:**

- Harper's Illustrated Biochemistry, By Rodwell Victor
- [The NICE Guideline summary](#) (Hyperparathyroidism (primary) NICE guideline: diagnosis, assessment, and initial management) [PDF Link](#)