

URINARY STONE DISEASE

Preamble

This module covers the mechanism of urinary stone formation and the clinical consequences of stone disease.

Prerequisite Knowledge

- Renal physiology and mineral metabolism.
- Microbiology

Resources

- Campbell's Urology (8th Ed)
- AUA Updates XVIII (Lessons 20, 26), XIX (30, 40), XXI (1)
- Urologic Clinics of North America – Feb 1997
- Hinman's Atlas of Urologic Surgery – Sections 19, 20, 22

Delivery of this Module

Web.

CORE LEARNING OBJECTIVES

Anatomy and Embryology

- Identify surface anatomy relevant to the surgical management of renal and ureteric calculi.
- Recognise radiological anatomy of the urinary tract.
- Describe the anatomic relationships of the kidney and ureter.
- Identify endoscopic anatomy of the ureter and intrarenal collecting system.

Epidemiology

- Discuss the incidence and recurrence rates for urinary stone disease.
- List the genetic and environmental risk factors for urinary stone disease.

Pathophysiology

- List the structural and biochemical factors that govern urinary lithiasis.
- Summarise the theories regarding stone formation.
- Compare biochemical stone types with regard to their aetiology and physical characteristics.
- List the available methods of stone analysis.

Physical Principles of Stone Treatment

- Describe the physical principles of kinetic lithotripsy including ESWL, laser, pneumatic and electrohydraulic modalities.
- Discuss the safety issues involved with the use of these modalities.

Assessment Methods

- Multiple choice questions
- Critical literature appraisal
- Supervisor judgment/assessments

CLINICAL REASONING LEARNING OBJECTIVES

Evaluation

- Discuss the assessment of a patient presenting with loin pain.
- Demonstrate proficiency in the management of a patient with the diagnosis of urinary tract calculus disease.
- Discuss the metabolic investigations of patients with recurrent or multiple urinary stone disease.

Treatment

- Discuss the indications for admission and intervention for patients with urinary stone disease.
- Design a treatment plan for patients presenting with renal, ureteric and bladder stones and discuss the factors which influence management.
- Discuss the indications, results and complications of specific treatments including conservative management, medical therapy, extracorporeal shock-wave lithotripsy, percutaneous, endoscopic, open and laparoscopic surgery.
- Discuss the particular issues associated with the management of stone disease in children.
- Discuss the complications of stone disease and describe their management with particular reference to obstruction, infection and inflammation.

Communication

- Describe the information you would convey to a patient and/or their family on the management options for their condition.
- Discuss the information that a patient should be given prior to obtaining informed consent for diagnosis or treatment, with particular reference to the individual's circumstances.

Assessment methods

- Multiple choice questions
- Short answers
- Critical literature appraisal
- Vivas
- Clinical assessment
- Mentor reports