

## Overview

Expectoration of blood can range from blood streaking of sputum to massive haemoptysis (greater than 1,000 ml/day) that may be acutely life-threatening. Bleeding usually starts and stops unpredictably, but under certain circumstances may require immediate establishment of an airway and control of the bleeding.

## Causes

### 1) Airway disease

#### a) Neoplasms

- Bronchogenic carcinoma
- Endobronchial metastatic carcinoma (melanoma, breast, renal, colon)
- Bronchial carcinoid
- Kaposi sarcoma (in patients with AIDS)

#### b) Inflammatory

- Bronchitis (acute, chronic)
- Bronchiectasis

#### c) Other (foreign body, trauma, arteriovenous fistula)

### 2) Pulmonary parenchymal disease

- a) Infectious (tuberculosis (TB), pneumonia, abscess, aspergilloma)
- b) Inflammatory/Immune (Goodpasture syndrome, pulmonary haemosiderosis, Wegener granulomatosis, lupus pneumonitis)

### 3) Vascular

- a) Elevated capillary pressure (left ventricular failure, mitral stenosis)
- b) Pulmonary embolus
- c) Arteriovenous malformation

### 4) Bleeding disorders

### 5) Anticoagulant therapy



Tuberculosis

### Key Objectives

- Determine whether the blood in sputum is true haemoptysis (originates below the vocal cords) rather than upper respiratory tract or upper gastrointestinal bleeding (haematemesis).
- Understand management principles for life-threatening haemoptysis.

### General/Specific Objectives

- Through efficient, focused data gathering:
  - Differentiate between the causes of haemoptysis: contrast the disproportionate amount of blood flow in the pulmonary arteries (virtually the entire cardiac output) to the bronchial arteries (usually two branches off the aorta) to the origin of haemoptysis (more than 90% of the time from the bronchial arteries).
- Interpret critical clinical and laboratory findings which are key in the processes of exclusion, differentiation, and diagnosis:
  - Select investigations to determine the cause of haemoptysis (X-ray, computed tomography (CT) scan); if arteriogram is eventually selected, select imaging of the bronchial arteries first.
  - List indications for bronchoscopy.
- Conduct an effective plan of management for a patient with haemoptysis:
  - In the presence of massive haemoptysis (greater than 1,000 ml/day), establish airway first and consult a specialist capable of controlling the bleeding.
  - Outline the management of causes of haemoptysis which are not life-threatening and do not require immediate referral to a specialist.
  - Select patients in need of specialised care and/or consultation.

### Overview

Hirsutism is a common problem, particularly in dark-haired, darkly pigmented, white women. However, if accompanied by virilisation, then a full diagnostic evaluation is essential.

### Causes

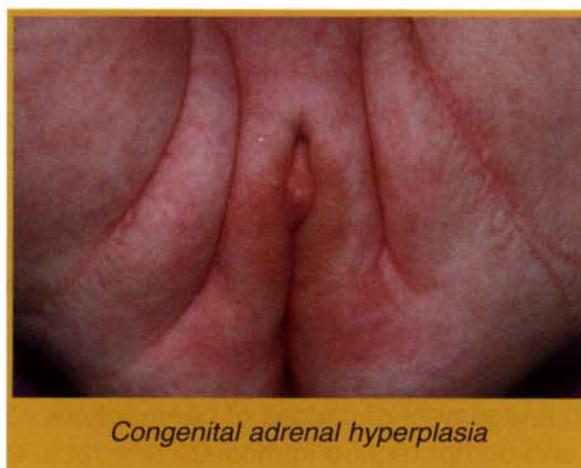
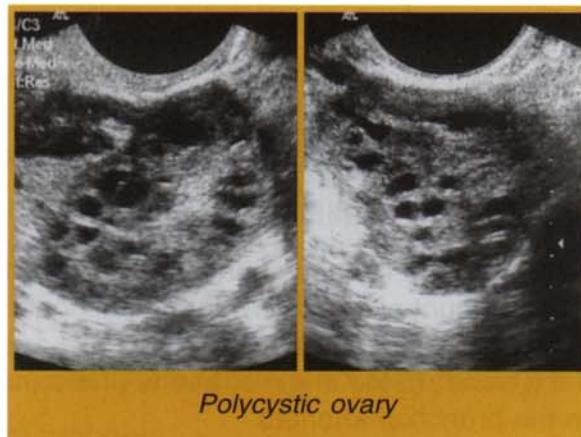
#### 1) Androgen excess (may be associated with virilisation)

##### a) Ovarian source

- Polycystic ovary syndrome
- Ovarian tumour (arrhenoblastoma)

##### b) Adrenal Source

- Congenital adrenal hyperplasia
- Cushing syndrome
- Adrenal tumour (adenoma, carcinoma)



## **2) Drugs (usually not associated with virilisation)**

- a) Phenytoin
- b) Antihypertensives (minoxidil)
- c) Cyclosporine

## **3) Familial (usually not associated with virilisation)**

## **4) Idiopathic (usually not associated with virilisation)**

### **Key Objective**

- Outline the laboratory investigation for patients with signs of androgen excess.

### **General/Specific Objectives**

- Through efficient, focused data gathering:
  - Determine which patients with recent onset of hirsutism require investigation.
  - Determine which patients with clinical symptoms and signs of defeminisation (i.e. amenorrhoea) and virilisation require investigation.
- Interpret critical clinical and laboratory findings which were key in the processes of exclusion, differentiation and diagnosis:
  - Select appropriate laboratory and imaging studies.
- Conduct an effective plan of management for a patient with hirsutism and virilisation:
  - Outline the medical management of patients with idiopathic hirsutism.
  - Outline the medical management of patients with polycystic ovary syndrome.
  - Counsel and educate patients with hirsutism on conservative methods of managing excess hair.
  - Select patients in need of specialised care.

### Overview

Diabetes mellitus is a very common disorder. The morbidity and mortality associated with diabetic complications may be reduced by preventive measures. Intensive glycaemic control will reduce congenital malformations and neonatal complications in pregnancy-associated diabetes as well as complications associated with all other forms of diabetes.

### Causes

#### 1) Type I (beta-cell destruction insulin deficiency)

- a) Immune-mediated
- b) Idiopathic

#### 2) Type II (insulin resistance)

#### 3) Other specific types

- a) Genetic defects (*beta*-cell function or insulin action)
- b) Diseases of the pancreas (pancreatitis)
- c) Endocrinopathies (acromegaly, Cushing syndrome)
- d) Drugs (glucocorticoids, thiazides)

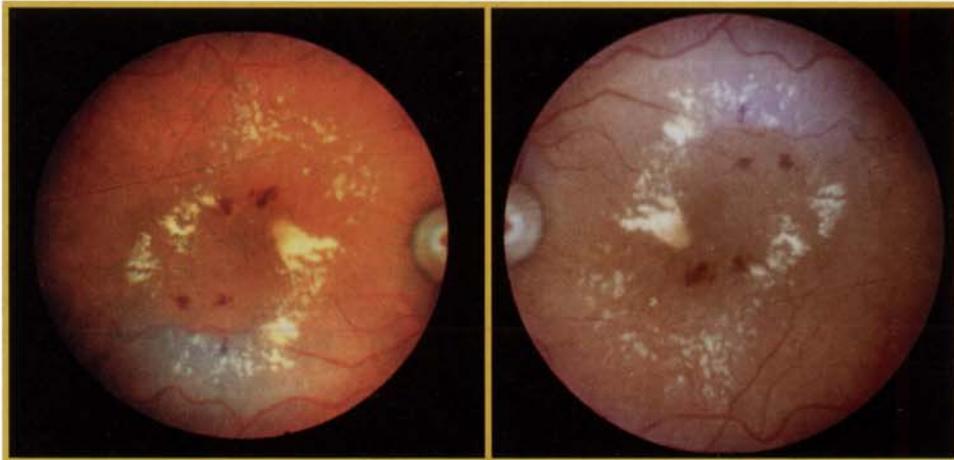
#### 4) Gestational diabetes mellitus



Diabetic foot



Diabetic lipoatrophy



*Diabetic retinopathy*

### **Key Objectives**

- To diagnose diabetes mellitus and diabetic ketoacidosis.
- To provide initial management for individuals with diabetic ketoacidosis, and treatment-induced hypoglycaemia.
- To provide ongoing management to diabetic patients and their families.

### **General/Specific Objectives**

- Through efficient, focused data gathering:
  - Diagnose diabetes mellitus and associated complications.
  - Diagnose diabetic ketoacidosis, and hyperglycaemia-associated hyperosmolar states and determine the precipitating causes.
- Interpret critical clinical and laboratory findings which were key in the processes of exclusion, differentiation, and diagnosis; and important in formulating a differential diagnosis:
  - Select appropriate investigations for diagnosis of diabetes mellitus and its complications.
- Conduct an effective plan of management for a patient with hyperglycaemia / diabetes mellitus:
  - Outline appropriate long term management of diabetes mellitus, including blood pressure (BP) control and primary and secondary prevention of micro- and macro-vascular complications as well as other complications.
  - Outline the management of ketoacidosis, hyperosmolar state, and severe hypoglycaemia.
  - Select patients in need of specialised care and/or referral to other healthcare professionals.
  - Conduct education and counselling to patients with diabetes mellitus and their families, including lifestyle modifications, and primary and secondary prevention strategies for the complications of the disease.

### 053A Hypoglycaemia

#### Overview

Maintenance of the blood sugar within normal limits is essential for health. In the short term, significant hypoglycaemia is more dangerous than hyperglycaemia.

#### Causes

##### 1) Postprandial hypoglycaemia

- a) Idiopathic
- b) Alimentary hyperinsulinism (previous gastrectomy, gastrojejunostomy)

##### 2) Fasting hypoglycaemia

###### a) Secondary to overutilisation of glucose

- Associated with hyperinsulinism
  - Exogenous insulin, sulfonylureas (including factitious hypoglycaemia)
  - Insulinoma
  - Miscellaneous drugs (pentamidine, quinine)
- Associated with normal insulin levels
  - Large extrapancreatic tumours

###### b) Secondary to impaired glucose production

- Hormone deficiencies
  - Adrenal insufficiency
  - Hypopituitarism
- Substrate deficiency (severe malnutrition, muscle wasting)
- Drugs (alcohol, salicylate intoxication)
- Enzyme defects (glucose-6-phosphatase deficiency)
- Critical illnesses (severe hepatic failure, cardiac disease, sepsis)
- Autoimmune hypoglycaemia

## **Key Objectives**

- Differentiate the causes of hypoglycaemia based on whether it occurs in the postprandial or fasting state.
- Determine the level of awareness of hypoglycaemia in patients prone to this condition.

## **General/Specific Objectives**

- Through efficient, focused data gathering:
  - Identify those patients with true hypoglycaemia.
  - Differentiate the cause for hypoglycaemia.
- Interpret critical clinical and laboratory findings which were key in the processes of exclusion, differentiation and diagnosis; and important in formulating a differential diagnosis:
  - Evaluate the blood sugar in patients with symptoms suggestive of postprandial hypoglycaemia.
  - Outline the optimal laboratory work-up for a patient with fasting hypoglycaemia, which will include investigation at the time of the hypoglycaemia.
- Conduct an effective plan of management for a patient with hypoglycaemia:
  - Outline the management of an acute hypoglycaemic episode.
  - Counsel and educate patients with diabetes in relation to the symptoms and management (as well as prevention) of hypoglycaemia.
  - Select patients in need of specialised care.

### Overview

Hypertension is a common condition affecting, in most countries, an increasing proportion of the population with increasing age and is a major contributor to the global burden of disease. A diagnosis of hypertension may require ambulatory blood pressure (BP) monitoring or self-monitoring. Appropriate management of hypertension can improve health outcomes. Central to an understanding of the impact of hypertension, through its effects on the cardiovascular system, is an appreciation of the family of cardiovascular risk factors and their interactions.

### Causes

#### 1) Primary (essential hypertension)

#### 2) Secondary

- a) Renal parenchymal disease (e.g. glomerulonephritis, reflux nephropathy, polycystic kidney disease, renal failure)
- b) Syndrome X
- c) Diabetes mellitus
- d) Sleep-apnoea syndrome
- e) Mineralocorticoid excess (e.g. adrenal adenoma or hyperplasia, glucocorticoid-suppressible hyperaldosteronism)
- f) Angiotensin II excess (e.g. unilateral renal artery stenosis)
- g) Catecholamine excess (e.g. phaeochromocytoma, drugs)
- h) Coarctation of the aorta
- i) Endocrine disorders  
(hypothyroidism, hyperthyroidism, hyperparathyroidism (HPT), Cushing syndrome)
- j) Genetic disorders  
(e.g. glucocorticoid-suppressible hyperaldosteronism, polycystic kidney disease, Liddle syndrome, multiple endocrine neoplasia)
- k) Drugs (sympathomimetics, cocaine, nonsteroidal anti-inflammatory drugs (NSAIDs), carbenoxalone, liquorice)



Renal artery stenosis

## **Key Objective**

- Avoid mislabelling patients, select patients suitable for investigation for secondary causes, identify other cardiovascular risk factors and select the most appropriate management for each individual with hypertension.

## **General/Specific Objectives**

- Through efficient, focused data gathering:
  - Diagnose hypertension and 'white coat' ('isolated clinic') hypertension.
  - Select patients suitable for investigation of secondary causes.
  - Identify end organ damage.
  - Characterise the patient's cardiovascular risk factor profile.
  - Identify hypertensive emergencies (e.g. hypertensive encephalopathy, dissecting thoracic aortic aneurysm, malignant hypertension).
- Interpret critical clinical and laboratory findings which were key in the processes of exclusion, differentiation, and diagnosis:
  - Diagnose renal parenchymal disease.
  - Select patients in need of specialised diagnostic care.
  - Discuss cost-effectiveness of investigation of hypertension.
- Conduct an effective plan of management for a patient with hypertension:
  - Risk stratification.
  - Define associated clinical conditions and comorbidities.
  - Set target BP levels and consider self-monitoring.
  - Outline non-pharmacological management strategies for patients, prior to pharmacological ones.
  - Select antihypertensive medication which will not adversely affect concomitant conditions such as diabetes mellitus, asthma, gout, and congestive heart failure.
  - Select appropriate agents for hypertensive emergencies (e.g. encephalopathy, dissection).
  - Communicate to patients the importance of consultation with other healthcare professionals (e.g. dieticians).
  - Determine factors contributing to non-compliance and discuss possible management strategies.
  - Discuss cost-effectiveness of management of hypertension.

### 054A Hypertension in Childhood

#### Overview

The prevalence of hypertension in children is less than one percent, but often results from identifiable causes (usually renal or vascular). Consequently, vigorous clinical investigation is warranted.

#### Causes

- 1) Neonates and young infants (ischaemic or congenital renal disease, coarctation of the aorta, hypercalcaemia, neurogenic tumours, umbilical vessel catheterisation)**
- 2) Children (1 to 10 years) (renal disease, both vascular and parenchymal, coarctation, or less commonly as above)**
- 3) Children and adolescents (11 to adolescence) (renal disease, primary hypertension, or less commonly as above)**

#### Key Objectives

- Perform blood pressure (BP) measurements in infants and very young children with automated devices, and check BP tables for normal values.
- State that hypertension is a systolic or diastolic value greater than 95<sup>th</sup> percentile, appropriately measured.

#### General/Specific Objectives

- Through efficient, focused data gathering:
  - Diagnose hypertension and pseudohypertension; discuss 'white coat' hypertension.
  - Elicit or rule out signs of secondary hypertension.

- Interpret critical clinical and laboratory findings which were key in the processes of exclusion, differentiation, and diagnosis:
  - Outline value and use of ambulatory BP monitoring.
  - Diagnose renal parenchymal disease.
  - Select patients in need of diagnostic imaging and other laboratory investigation.
  - Discuss cost-effectiveness of investigation of hypertension.
- Conduct an effective plan of management for a paediatric age group patient with hypertension:
  - Outline for patients dietary treatment only if obese.
  - Select antihypertensive medication and dose.
  - Select appropriate agents for hypertensive emergencies (e.g. encephalopathy, cardiac failure).
  - Select patients in need of specialised care.

### 054B Pregnancy-Associated Hypertension

#### Overview

Preeclampsia is generally a self-limited disease with rapid resolution of hypertension and a low recurrence rate in future pregnancies (less than 7%). However, when severe, and especially when it occurs in the second trimester, preeclampsia is not so benign. Such patients are at high risk for recurrence in subsequent pregnancies (as high as 65% when the preeclampsia is in the second trimester) and also at high risk for hypertension later in life. The incidence of fetal growth retardation is about 10%.

#### Causes

##### 1) Pregnancy-induced hypertension

- a) Preeclampsia
- b) Eclampsia

##### 2) Chronic (pre-existing) hypertension / Chronic renal disease

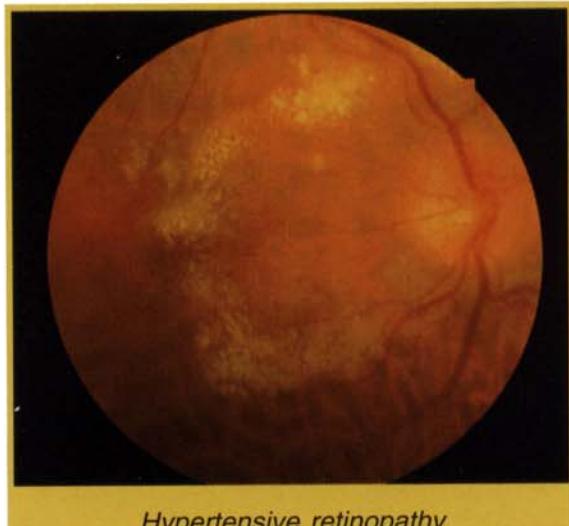
- a) Preeclampsia superimposed on chronic hypertension

#### Key Objectives

- Describe the normal changes of blood pressure (BP) in pregnancy and define hypertension in pregnancy with these changes in mind.
- Outline the treatment of preeclampsia including consideration for early diagnosis, medical supervision, and timely delivery. This should include:
  - Control BP.
  - Assess maternal condition – urine, blood tests required.
  - Look for underlying medical condition.
  - Assess fetal condition.
  - Prevent eclampsia.
  - Delivery – timing and mode.

## **General/Specific Objectives**

- Through efficient, focused data gathering:
  - Differentiate preeclampsia from chronic hypertension and transient hypertension.
  - Elicit symptoms and signs indicative of risk for eclampsia (e.g. headache, epigastric pain, visual abnormalities, proteinuria).
- Interpret critical clinical and laboratory findings which were key in the processes of exclusion, differentiation, and diagnosis:
  - Select and interpret laboratory investigation useful to the diagnosis of preeclampsia and 'HELLP' syndrome (Haemolysis, Elevated Liver enzymes, Low Platelets).
- Conduct an effective plan of management for a patient with hypertension in pregnancy:
  - Discuss the goals of management of hypertension in pregnancy (first, with respect to the safety of the mother, and second, the delivery of a live infant not requiring intensive, prolonged neonatal care) as listed in *Key Objectives* above.
  - Discuss strategies for the prevention of pregnancy-induced hypertension.
  - List drugs indicated and contraindicated in the management of hypertension in pregnancy.



*Hypertensive retinopathy*

### 054C Hypertension in the Elderly

#### Overview

Elderly patients (older than 60–65 years) have hypertension much more commonly than younger patients do, especially systolic hypertension. The prevalence of hypertension among the elderly may reach 60%–80%.

#### Causes

Causes are the same as for hypertension in younger patients, but if age more than 50 years, secondary hypertension becomes more likely.

##### 1) Primary hypertension

(see #054 Hypertension)

##### 2) Secondary hypertension

(see #054 Hypertension)

#### Key Objectives

- Define hypertension in the elderly in a manner similar to younger patients; define pseudohypertension.
- Conduct antihypertensive pharmacologic treatment for systolic hypertension in elderly patients when systolic blood pressure (BP) is consistently greater than 160 mm Hg (use standing BPs as a guide to therapy), since evidence of benefit exists.
- State that the benefit of treating hypertension in the elderly is two to four times greater than that achieved in the treatment of younger patients with primary hypertension.

#### General/Specific Objectives

- Through efficient, focused data gathering:
  - Diagnose hypertension and pseudohypertension.
  - Select patients suitable for investigation of secondary causes.
  - Identify end organ damage.
  - Identify hypertensive emergencies (e.g. hypertensive encephalopathy, dissecting aortic aneurysm, malignant hypertension, transient ischaemic attacks).
- Interpret critical clinical and laboratory findings which were key in the processes of exclusion, differentiation, and diagnosis:
  - Diagnose renal parenchymal disease.
  - Select patients in need of specialised diagnostic care.
  - Discuss cost-effectiveness of investigation of hypertension.

- Conduct an effective plan of management for an elderly patient with hypertension:
  - Outline for patients non-pharmacological management strategies prior to pharmacological ones.
  - Select antihypertensive medication which will not adversely affect concomitant conditions such as diabetes mellitus, asthma, and congestive heart failure.
  - Select appropriate agents for hypertensive emergencies (e.g. encephalopathy, dissection).
  - Communicate to patients the importance of consultation with other healthcare professionals (e.g. dieticians).
  - Determine factors contributing to non-compliance and discuss possible management strategies.
  - Discuss cost-effectiveness of management of hypertension in the elderly.
  - Select patients in need of specialised care.
  - Define the goals of treatment in elderly hypertensive patients and contrast these with the goals for younger patients.

### 054D Malignant Hypertension

#### Overview

Malignant hypertension and hypertensive encephalopathy are two life-threatening syndromes caused by marked elevation in blood pressure (BP).

#### Causes

- 1) Primary hypertension (longstanding, uncontrolled, drug withdrawal)**
- 2) Secondary hypertension**
  - a) Increased cardiac output (secondary increase in vascular resistance)
    - Chronic renal failure, uraemia with volume overload
    - Acute renal disease (glomerulonephritis, scleroderma crisis)
    - Primary hyperaldosteronism (Conn syndrome)
  - b) Increased vascular resistance
    - Renovascular hypertension (renal artery stenosis)
    - Phaeochromocytoma
    - Drugs (cocaine, food or drug interactions with monoamine oxidase inhibitors, nonsteroidal anti-inflammatory drugs (NSAIDs))

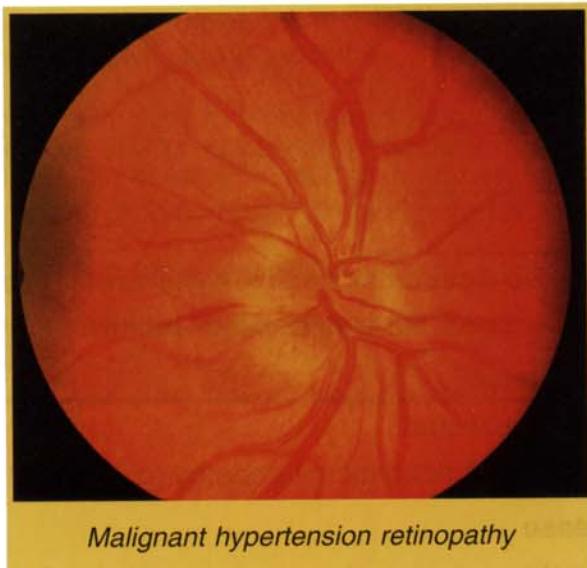
#### Key Objectives

- Differentiate primary malignant hypertension (marked hypertension with diastolic BP usually greater than 140 mm Hg, associated with grade three to four retinopathy, proteinuria and renal impairment) from secondary conditions such as uraemia with fluid overload, subarachnoid or cerebral haemorrhages, brain tumours, head injury, seizure, etc.
- Conduct initial hypertension lowering treatment in a manner which lowers the BP gradually over hours, not precipitously.

#### General/Specific Objectives

- Through efficient, focused data gathering:
  - Determine quickly whether other hypertensive emergencies are present (e.g. aortic dissection, acute pulmonary oedema, acute or impending myocardial infarction (MI), cerebrovascular events) and make BP lowering the first concern.
  - Once BP control is in place, diagnose the cause of the BP elevation.

- Interpret critical clinical and laboratory findings which are key in the processes of exclusion, differentiation, and diagnosis:
  - Have an appropriate investigation strategy, since certain medications can interfere with some biochemical tests.
- Conduct an effective plan of management for a patient with malignant hypertension:
  - Recognise that the control of BP in a patient with malignant hypertension usually requires admission to an intensive care unit (ICU).
  - Outline the immediate management of malignant hypertension with parenteral drugs with intra-arterial BP monitoring in an ICU setting and with other medications if an ICU is not available.
  - Discuss advantages and disadvantages of various BP-lowering drugs used in malignant hypertension and other hypertensive emergencies.
  - Describe and explain the potential hazards of too rapidly lowering BP levels below 100–105 mm Hg diastolic or greater than 25% of baseline.
  - Outline a long term management strategy.



*Malignant hypertension retinopathy*

### Overview

Infertility affects about 10–15% of couples. Both partners should be investigated simultaneously since male-associated factors account for at least one-third of infertility problems, and problems are often identified in both male and female partners.

### Causes

#### 1) Infertility

##### a) Female

(see #063 Menstrual Cycle Abnormal)

- Disorders of ovulation – causes at level of hypothalamus, pituitary, or ovary
- Disorders of tubal function
- Other causes – fibroids, endometriosis

##### b) Male – disordered semen specimen

- Endocrine causes – hypothalamic/pituitary causes (panhypopituitarism, haemochromatosis) – may have associated decreased androgenisation.
- Testicular (viral orchitis, radiation, drugs, liver disease, renal failure)
- Varicocele
- Abnormal sperm transport (obstruction of vas deferens)

#### 2) Impotence

##### a) Endocrine causes (testicular failure, hyperprolactinaemia)

##### b) Drugs (spironolactone, thiazides, *beta-blockers*, tricyclics, alcohol)

##### c) Neurologic diseases

- Diseases of spinal cord
- Polyneuropathy / Autonomic neuropathy (diabetes)

##### d) Vascular disease

- Atherosclerotic occlusion of cavernous or pudenda arteries
- Venous leak

##### e) Psychogenic

## **Key Objectives**

- Outline the investigation for couples with infertility.
- Outline the therapeutic options for couples with infertility.

## **General/Specific Objectives**

- Through efficient, focused data gathering:
  - Diagnose the most likely cause of infertility.
  - Determine which patients are likely to have an organic cause for their impotence.
- Interpret critical clinical and laboratory findings which were key in the processes of exclusion, differentiation, and diagnosis:
  - Order and interpret a semen analysis.
  - Outline the laboratory investigation of a female with infertility.
- Conduct an effective plan of management for a patient with infertility or impotence:
  - Outline the medical and surgical management of a female/couple with infertility, considering the various causes of infertility and the treatment modalities for each (including the use of modern reproductive techniques of invitro-fertilisation (IVF) / intra-cytoplasmic sperm injection (ICSI) and gamete donor use).
  - Determine the therapy for impotence based on the underlying cause.
  - Describe the role of specific injectable and oral medications and the potential for surgical correction in patients with erectile dysfunction.
  - Select patients in need of specialised care.
  - Counsel and educate couples with infertility including the option of adoption.

### Overview

Insomnia is a symptom that affects one-third of the population at some time, and is a persistent problem in 10% of the population. Affected patients complain of difficulty in initiating and maintaining sleep, and this inability to obtain adequate quantity and quality of sleep results in impaired daytime functioning.

### Causes

#### 1) Transient and short term insomnia

- a) Change in sleeping environment / Excessive noise / High or low ambient temperature
- b) Jet-lag
- c) Change in work shift
- d) Stressful life events / Acute illness
- e) Stimulant medication (theophylline, steroids, *beta*-agonists, thyroxine)

#### 2) Chronic insomnia

- a) Psychiatric disorders (depression, anxiety disorders, schizophrenia)
- b) General medical disorders
  - Cardiac (heart failure, coronary artery disease (CAD))
  - Respiratory (chronic obstructive pulmonary disease (COPD), asthma)
  - Gastro-intestinal (reflux, peptic ulcer disease)
  - Arthropathies / 'Fibromyalgia' / Lyme disease
  - AIDS
  - Chronic fatigue syndrome
- c) Neurologic
  - Strokes (central hemispheric and brain stem)
  - Neuro-degenerative (Alzheimer disease, Parkinson disease)
  - Brain tumours
  - Neuromuscular (painful neuropathies)
  - Headaches (see #046 Headache)
  - Fatal familial insomnia
- d) Drug/Alcohol insomnia

**e) Primary sleep disorders**

- Primary or idiopathic
- Psycho-physiologic
- Sleep state misperception
- Circadian rhythm disorders
  - Delayed sleep phase syndrome
  - Advanced sleep phase syndrome
  - Hypernychthemeral syndrome
- Restless legs syndrome / Periodic limb movement disorder
- Altitude insomnia
- Insufficient sleep syndrome
- Central sleep-apnoea syndrome

**Key Objective**

- Elicit a history of sleep habits involving the entire 24-hour cycle, including history from bed partner or caregiver (sleep habits, drug/alcohol consumption, medical or psycho-neurologic disease, psycho-social stressors, etc.).

**General/Specific Objectives**

- Through efficient, focused data gathering:
  - Conduct an examination of the patient to detect concomitant medical conditions which can adversely affect sleep.
  - Describe to the patient a 'sleep log' and request one.
- Interpret critical clinical and laboratory findings which were key in the processes of exclusion, differentiation, and diagnosis:
  - State that laboratory investigation is not required in the routine evaluation of insomnia.
  - List situations for which polysomnography may be indicated.
- Conduct an effective plan of management for a patient with insomnia:
  - State that management depends on the underlying cause.
  - Outline some non-pharmacologic strategies for management of idiopathic chronic insomnia.
  - State that pharmacologic therapy is generally not the treatment of first choice and should always be combined with non-pharmacologic therapies (e.g. sleep hygiene).

### Overview

Motor function may be impaired in a number of different ways, involving either a paucity or an excess of movements. Abnormal movements may be spontaneous (at rest), postural, or only with intention. They may involve dyskinesias, choreoathetosis, tremors, tics, myoclonic jerks or fasciculations.

### Causes

- 1) Akinesia (Parkinson disease: idiopathic or drug-induced)**
- 2) Rigidity (Parkinson disease: idiopathic or drug-induced)**
- 3) Akathisia (drug-induced, Parkinson disease, delirium)**
- 4) Chorea (hereditary, basal ganglia disease, Huntington disease, rheumatic chorea, thyrotoxicosis, systemic lupus erythematosus (SLE), neuroleptics, pregnancy, polycythaemia)**
- 5) Athetosis (cerebral palsy, Wilson disease, cerebral anoxia)**
- 6) Hemiballismus (contralateral subthalamic pathology, hypertension, diabetes mellitus)**
- 7) Dystonia**
  - a) Primary (idiopathic, inherited)
  - b) Secondary (kernicterus, Wilson disease, heavy metals, cerebral anoxia, drug-induced)
  - c) Focal (spasmodic torticollis, cranial, occupational, drug-induced)
- 8) Myoclonus**
  - a) Physiological (sleep, anxiety, exercise, hiccough)
  - b) Essential (familial, sporadic)
  - c) Epileptic (benign, infantile, progressive, petit mal)
  - d) Symptomatic (encephalopathy, basal ganglia disease, dementias, metabolic, toxic, physical, focal central nervous system (CNS) damage).
- 9) Tremor**
  - a) Familial/Essential
  - b) Physiological (anxiety, fatigue, alcohol, caffeine)
  - c) Orthostatic
  - d) Symptomatic (Parkinson disease, cerebellar disease)

**10) Restless legs syndrome****11) Asterixis (metabolic/hepatic)****12) Habit spasms and tics (Tourette syndrome)****Key Objectives**

- Describe the abnormal movement accurately after careful observation both at rest and in action.
- Conduct appropriate testing to exclude treatable conditions:
  - Wilson disease, thyrotoxicosis, SLE, heavy metal poisoning, carbon monoxide poisoning and syphilis, etc.
- Be aware of common drug-induced causes of involuntary movements:
  - Neuroleptics, anticholinergics, antidepressants, antipsychotics, lithium, 1-dopa, haloperidol, thyroxine, caffeine, alcohol, bromocriptine.

**General/Specific Objectives**

- Through efficient, focused data gathering and neurological examination:
  - Differentiate between the various causes of movement disorders.
- Interpret critical clinical and laboratory findings which were crucial in the processes of exclusion, differentiation, and diagnosis:
  - Select patients in need of referral for investigation or specialised care.
  - Conduct testing for Wilson disease.
- Develop an effective management plan for a patient with an involuntary movement disorder / tic disorder.
- Contact family members and consider screening if either Wilson disease, Huntington disease or Tourette syndrome is diagnosed.

### Overview

Jaundice is not usually detectable clinically until the serum bilirubin is greater than 30 mmol/L. Excess haemolysis causes mild acholuric jaundice (bilirubin attached to albumin does not appear in the urine) whereas cholestatic jaundice is associated with dark urine (conjugated bilirubin passes through the kidneys into the urine). Dark urine is usually the first symptom in cholestatic jaundice. Jaundice resulting from hepatobiliary disease may represent a benign heritable condition or severe life-threatening disease.

### Causes

#### 1) Unconjugated hyperbilirubinaemia

##### a) Overproduction

- Haemolysis
- Ineffective erythropoiesis

##### b) Decreased hepatic uptake (sepsis)

##### c) Decreased bilirubin conjugation

- Hereditary transferase deficiency (Gilbert syndrome, Crigler-Najjar syndrome)
- Neonatal jaundice
- Acquired transferase deficiency (breast milk, hepatocellular disease)

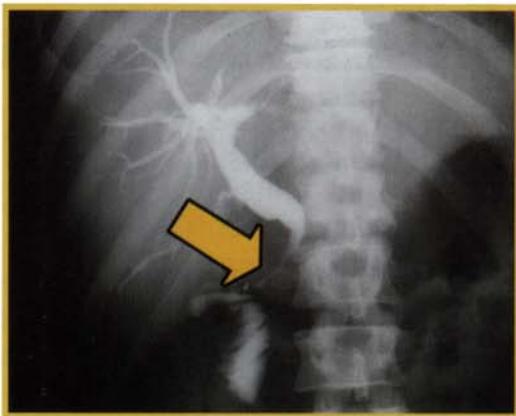
#### 2) Conjugated hyperbilirubinaemia

##### a) Intrahepatic cholestasis

- Drugs (erythromycin, oral contraceptive pill (OCP))
- Hepatocellular disease (hepatitis)
- Cirrhosis
  - Infectious diseases including postviral
  - Hereditary diseases (alpha-1-antitrypsin deficiency, haemochromatosis, Wilson disease)
  - Primary biliary cirrhosis
  - Alcohol
- Miscellaneous (fatty liver, sepsis)

##### b) Extrahepatic cholestasis

- Intraductal obstruction
  - Gallstones
  - Sclerosing cholangitis
  - Biliary malformation (stricture)
  - Malignancy (cholangiocarcinoma)
- Compression of biliary ducts (malignancy)



Biliary stricture from pancreatitis



Malignant obstruction of bile duct

### Key Objectives

- Determine which patients have significant liver dysfunction and evaluate the progression of the jaundice.
- Appreciate that alcohol is the commonest cause of cirrhosis.

### General/Specific Objectives

- Through efficient, focused data gathering:
  - Differentiate between the various causes for jaundice and determine which are treatable.
  - Describe and demonstrate complications related to the presence of liver disease.
- Interpret critical clinical and laboratory findings which were key in the processes of exclusion, differentiation, and diagnosis:
  - Indicate changes in the sclera, skin, urine and faeces with the various causes.
  - Select and interpret appropriate investigations for patients with jaundice.
  - Order and interpret a blood smear in patients with unconjugated hyperbilirubinaemia.
  - List the indications for and interpret an abdominal ultrasound including the significance of dilated bile ducts.
- Conduct an effective plan of management for a patient with jaundice:
  - Outline a management plan for common causes of jaundice.
  - Outline a management plan for patients with acute hepatic failure.
  - Select patients in need of specialised care and/or in need of urgent hospitalisation.

**058A Neonatal Jaundice****Overview**

Jaundice is the most prevalent problem in the newborn period; up to 65% of full-term neonates develop transient jaundice. Although some causes are ominous, the majority are transient and without consequences. Physiologic jaundice comprises a transient decrease in the conjugation of bilirubin, appears on the second or third day of life and disappears within two weeks.

**Causes****1) Unconjugated hyperbilirubinaemia****a) Increased bilirubin production**

- Haemolytic causes – Coombs positive
  - Isoimmune (Rh and ABO blood types, other blood antigens), autoimmune (systemic lupus erythematosus (SLE))
  - Acquired red cells defects (e.g. drugs)
- Haemolytic causes – Coombs negative
  - Red cell membrane defects (elliptocytosis, pyknocytosis, etc.)
  - Red blood cell (RBC) enzyme deficiencies (pyruvate kinase, glucose-6-phosphate dehydrogenase)
  - Haemoglobinopathy (with or without thalassaemia)
  - Microangiopathy (haemolytic-uraemic syndrome)

**b) Decreased bilirubin conjugation**

- Metabolic/Genetic (Gilbert syndrome, Crigler-Najjar syndrome, hypothyroidism)
- Physiologic jaundice / Breast milk jaundice

**c) Gastrointestinal absorption (pyloric stenosis, meconium ileus, sequestered blood)****2) Conjugated hyperbilirubinaemia****a) Decreased bilirubin uptake**

- Infections (sepsis, neonatal hepatitis) / Toxic (parenteral nutrition)
- Metabolic/Genetic (galactosaemia, Gaucher disease, Niemann-Pick disease, decreased Y protein)

**b) Decreased bilirubin excretion / Obstructive (biliary atresia, obstruction, choledochal cyst)**

## **Key Objectives**

- Determine whether jaundice presented at birth or within 24 hours, as in general such presentation is pathologic.
- State that hyperbilirubinaemia is most threatening when the onset is rapid, and the bilirubin is unconjugated. In the relatively immature central nervous system (CNS) of the neonate, especially in the premature, unconjugated bilirubin may be deposited and can result in severe brain damage.

## **General/Specific Objectives**

- Through efficient, focused data gathering:
  - Elicit a history regarding family history of haematological disorders, previously affected children, maternal blood type, and antibody status, delivery history, how colouration was noticed, vital signs, and any medications.
  - Perform examination of scleral and mucous membranes, skin, liver and spleen, ascites, circulatory status, urine and stool.
  - Differentiate physiologic from organic causes of neonatal jaundice.
- Interpret critical clinical and laboratory findings which were key in the processes of exclusion, differentiation, and diagnosis:
  - Select investigations that will differentiate conjugated from unconjugated hyperbilirubinaemia.
  - Select investigations that will differentiate pathologic hyperbilirubinaemia from exaggerated physiologic jaundice.
  - State that conjugated hyperbilirubinaemia is never physiologic and select tests for immediate investigations.
- Conduct an effective plan of management for a neonatal patient with jaundice:
  - Outline initial monitoring and management in neonatal jaundice.
  - Explain advantages and disadvantages of phototherapy, exchange blood transfusions, and pharmacologic therapy.
  - Select appropriate consultants in the management of neonatal jaundice.

### Overview

Pain involving a single joint, with painful limitation of movement, is a common presenting symptom. Conditions such as an infective arthritis are important to identify since failure to make the correct diagnosis could lead to permanent harm to the patient.

### Causes

- 1) Infection (bacterial, mycobacterial, fungal, viral, spirochaetes)**
- 2) Crystal (gout, pseudogout)**
- 3) Haemarthrosis (trauma/fracture, anticoagulants / bleeding disorders)**
- 4) Tumour (osteoma, sarcoma)**
- 5) Systemic rheumatic disease (rheumatoid arthritis (RA), systemic lupus erythematosus (SLE), sarcoid)**
- 6) Osteoarthritis (erosive variant)**

### Key Objectives

- Evaluate a patient with mono-articular arthritis first for the possibility of infection, since this relatively common cause of acute pain and swelling in a single joint can result in cartilage destruction within a few days if unrecognised.
- Recognise that the differential diagnosis of mono-articular arthritis overlaps with that of poly-articular arthritis, initially presenting as a single swollen joint.

## **General/Specific Objectives**

- Through efficient, focused data gathering:
  - Differentiate articular from non-articular disorders.
  - After considering infection, diagnose other causes of mono-arthritis.
- Interpret critical clinical and laboratory findings which were key in the processes of exclusion, differentiation, and diagnosis:
  - Select appropriate investigations including diagnostic joint aspiration and synovial fluid analysis.
- Conduct an effective plan of management for a patient with mono-articular joint pain:
  - Outline appropriate treatment of septic arthritis.
  - Select appropriate treatment for other causes of arthritis.
  - List the indications, contraindications, and adverse effects of drugs commonly used in the treatment of arthritis (e.g. nonsteroidal anti-inflammatory agents).
  - Select patients in need of specialised care and/or referral.

## Overview

Poly-articular joint pain ('polyarthralgia') is common in medical practice, and causes vary from some that are self-limiting to others which are potentially disabling and life-threatening. The term 'arthritis' includes inflammatory, infective, and degenerative joint disease. Arthritis is usually characterised by the spontaneous development of pain exacerbated by joint movement; and in superficial joints is often associated with swelling of the joints.

The most common types of arthritis seen in Australia are degenerative osteoarthritis and rheumatoid arthritis.

## Causes

### 1) Degenerative osteoarthritis

### 2) Infectious (Lyme disease, bacterial endocarditis, gonococcus, viral)

### 3) Post-infectious (reactive)

- a) Rheumatic fever
- b) Reiter syndrome
- c) Enteric infections

### 4) Seronegative spondyloarthritides

### 5) Systemic rheumatic diseases

- a) Rheumatoid arthritis (RA)
- b) Systemic lupus erythematosus (SLE)
- c) Systemic vasculitis
- d) Systemic sclerosis
- e) Polymyositis / Dermatomyositis



Juvenile rheumatoid arthritis



Rheumatoid arthritis – swan neck deformities





*Hands in rheumatoid arthritis*



*Rheumatoid nodules*

## 6) Other (sarcoidosis, inflammatory osteoarthritis)

### **Key Objectives**

- Differentiate articular from non-articular pain by clinical criteria; and between inflammatory and noninflammatory arthritis.
- Determine whether the patient has a musculoskeletal or neurologic emergency, compartment syndrome or acute myelopathy, versus radiculopathy or neuropathy.
- Differentiate neurologic causes by the burning quality associated with numbness, paraesthesia, constancy, worse at night, and unrelated to motion.

### **General/Specific Objectives**

- Through efficient, focused data gathering:
  - Differentiate between inflammatory and non-inflammatory arthritis.
  - Describe articular and extra-articular manifestations and complications.
- Interpret critical clinical and laboratory findings which were key in the process of exclusion, differentiation, and diagnosis:
  - Select and interpret investigations including synovial fluid analysis.
- Conduct an effective plan of management for a patient with poly-articular joint pain:
  - Outline the principles of multidisciplinary management of RA and other inflammatory and non-inflammatory arthritides.
  - Outline a management plan for patients with inflammatory and non-inflammatory arthritis including drug therapy, physiotherapy, occupational therapy, and treatment of joint deformities.
  - Select patients in need of specialised care and/or referral.
  - Conduct counselling and education of patients.

# 061 Limp / Pain in Lower Extremity in Children

(See also #089G Hip Pain, #089H Knee Pain)

## Overview

*Growing pains* is a general diagnosis that is being made less frequently as clinicians become more expert in making specific diagnoses. Although *growing pains* do exist as a form of myalgia, the clinician's aim should be to make as specific a diagnosis as possible.

## Causes

### 1) Trauma (stress fracture, traumatic epiphyseal injury)

(see #041 Fractures / Dislocations)

### 2) Infections (septic arthritis, osteomyelitis)

(see #071 Painful Limb)

### 3) Inflammatory (juvenile rheumatoid arthritis (RA), reactive arthritis, toxic synovitis of hip)

### 4) Other

#### a) Hip

- Legg-Calvé-Perthes disease
- Slipped capital femoral epiphysis

#### b) Knee

- Osgood-Schlatter disease or epiphysitis
- Chondromalacia patellae
- Patella (tendon partial rupture, osteochondritis, subluxation, dislocation)
- Meniscal injuries
- Popliteal cyst

### 5) Growing pains



*Perthes disease*

### **Key Objectives**

- Determine whether the pain originates in joints or soft tissue.
- Recognise that the most serious diseases causing leg pain in children are usually unilateral.

### **General/Specific Objectives**

- Through efficient, focused, data gathering:
  - Communicate to child and parents that pain or limp lasting for longer than two to three weeks is unlikely to be the result of trauma even in the presence of trauma history.
  - Determine if the limp or pain are caused by serious entities.
  - Calculate leg length discrepancies (greater than 1 cm may cause pelvic tilt and limp), describe gait.
- Interpret critical clinical and laboratory findings which were key in the processes of exclusion, differentiation, and diagnosis:
  - Select patients in need of diagnostic imaging or specialised care for further investigation.
- Conduct an effective plan of management for a child with pain in the lower extremity and/or limp:
  - Select patients in need of specialised care.

### Overview

Patients with focal lymphadenopathy at one site (groin, axilla, neck, abdomen) require careful assessment initially to identify neoplastic or inflammatory causes within regional fields. Generalised lymphadenopathy requires search for malignant or inflammatory disease. Finally, aspiration cytology is often diagnostic in the assessment of the lymph node swellings. Lymph nodes may be normally palpable in the groin, axilla or neck, but a lymph node swelling of 2 cm or greater which is persistent and firm, demands investigation.

### Causes

#### 1) Localised

##### a) Infectious causes

- Bacterial (streptococci, staphylococci, cat scratch, tuberculous)
- Viral (herpes simplex)

##### b) Reactive (usually secondary to undiagnosed infection)

##### c) Malignant diseases

- Metastatic disease
- Localised lymphoma



Troisier sign – carcinoma stomach



Cervical abscess following tonsillitis



Metastasis from pharyngeal cancer

## **2) Generalised**

### **a) Infectious causes**

- Viral (Epstein-Barr virus (EBV), cytomegalovirus (CMV), infectious hepatitis, rubella, HIV)
- Bacterial (brucellosis)
- Fungal (histoplasmosis, coccidioidomycosis)

### **b) Inflammatory diseases**

- Collagen diseases (rheumatoid arthritis (RA), systemic lupus erythematosus (SLE), dermatomyositis, Sjögren syndrome)
- Serum sickness
- Drug hypersensitivity (allopurinol, phenytoin)
- Sarcoidosis
- Amyloidosis

### **c) Malignant diseases**

- Lymphoma
- Acute or chronic lymphocytic leukaemia

### **Key Objective**

- Differentiate the cause of lymphadenopathy based on its location and distribution.

### **General/Specific Objectives**

- Through efficient, focused data gathering:
  - Differentiate benign from malignant causes for lymphadenopathy.
- Interpret critical clinical and laboratory findings which were key in the processes of exclusion, differentiation, and diagnosis:
  - Outline the laboratory investigation for a patient with generalised lymphadenopathy.
  - List the indications for a lymph node biopsy.
- Conduct an effective plan of management for a patient with lymphadenopathy:
  - Determine which patients require further investigation for their lymphadenopathy.
  - Select patients in need of specialised care.

### 063A Amenorrhoea (also Oligomenorrhoea)

#### Overview

The average age of menarche is less than 13 years (11–15 years). Most young women (phenotypic) failing to develop menses simply have delayed menarche, but rarely some (older than 16–17 years) fail to menstruate at all (primary amenorrhoea). Patients who have menstruated but have stopped (more than four to six months), have secondary amenorrhoea (commonest cause during reproductive years is pregnancy). Oligomenorrhoea investigation should include important issues such as nutrition and medications.

#### Causes

Primary amenorrhoea, secondary amenorrhoea and oligomenorrhoea. The causes which only apply to primary amenorrhoea are marked with an asterisk (\*). The others can apply to all of these causes.

#### 1) Pregnancy (also gestational trophoblastic tumours)

#### 2) Endocrine causes:

- a) Hypothalamic – physiologic (exercise, stress, weight loss or gain, drugs) – pathologic – tumour
- b) Pituitary – tumour or hypopituitarism (including Sheehan syndrome)
- c) Thyroid – underactivity, overactivity
- d) Adrenal – congenital adrenal hyperplasia, tumour
- e) Ovarian – polycystic ovary syndrome, ovarian failure, ovarian agenesis\*, streak gonads (45X)\*, hormone-producing ovarian tumour

#### 3) Uterine/Outflow tract anatomic defects

- a) Congenital absence of vagina\* / Imperforate hymen\*, transverse vaginal septum\*
- b) Cervical stenosis
- c) Intra-uterine adhesions / Uterine absence\* / Mal-development / Asherman syndrome

## **Key Objective**

- First determine whether the woman is pregnant if aged 10–50 years; order a pregnancy test. If not pregnant, consider other diagnoses. Be aware of special causes of primary amenorrhoea.

## **General/Specific Objectives**

- Through efficient, focused data gathering:
  - Determine degree of maturation of breasts, pubic and axillary hair, and external genitalia.
  - Determine current oestrogen status and presence or absence of outflow tract anatomic defect.
  - Determine patient's diet, drugs, and stress level; presence of galactorrhoea, hirsutism, acne.
- Interpret critical clinical and laboratory findings which were key in the processes of exclusion, differentiation, and diagnosis:
  - List indications for serum prolactin, gonadotropins, oestrogen and progesterone investigations.
  - List indications for obtaining a chromosomal karyotype.
  - List indications for assessing androgen status and what tests should be done.
  - List indications for a pelvic ultrasound examination.
- Conduct an effective plan of management for a patient with amenorrhoea:
  - Outline a management plan in a patient with functional hypothalamic amenorrhoea, including a rational basis for the agents used to induce ovulation if pregnancy is desired, and the place for hormone replacement therapy (HRT) if pregnancy is not desired.
  - Outline a management plan for a patient with ovarian failure, consider 'pros' and 'cons' of HRT.
  - Select patients in need of specialised care.

### 063B Pre-Menstrual Syndrome / Dysmenorrhoea

#### Overview

Approximately 30–50% of post-pubescent women experience painful menstruation and 10% of women are incapacitated by pain one to three days per month. Dysmenorrhoea is the single greatest cause of lost working hours and school days among young women.

#### Causes

##### 1) Pre-menstrual syndrome

##### 2) Dysmenorrhoea

###### a) Primary (no pelvic abnormality)

###### b) Secondary (acquired)

- Fibroids
- Endometriosis
- Infections / Foreign body
- Cervical occlusion
- Congenital abnormalities

#### Key Objective

- Differentiate primary (within the first two to three years of menarche, with regular ovulatory menstruation) from secondary dysmenorrhoea (usually many years after menarche).

## **General/Specific Objectives**

- Through efficient, focused data gathering:
  - Differentiate between pre-menstrual syndrome (pain and other symptoms 2–12 days before, and improve with menses), and dysmenorrhoea.
  - Differentiate between primary and secondary dysmenorrhoea.
  - Perform pelvic examination to diagnose possible causes of secondary dysmenorrhoea.
- Interpret critical clinical and laboratory findings which were key in the processes of exclusion, differentiation, and diagnosis:
  - Order Papanicolaou (Pap) smear, wet smear, cultures.
  - Select patients in need of referral for additional investigation.
- Conduct an effective plan of management for a patient with pre-menstrual syndrome or dysmenorrhoea:
  - Outline initial management of pre-menstrual syndrome or dysmenorrhoea.
  - Select patients in need of specialised care.

### Overview

Women live about one-third of their lives after ovarian function ceases. As the population ages, quality of life and disease prevention strategies are inherent in managing the post-menopausal symptoms in women.

### Causes

#### 1) Physiologic

- a) Oocytes responsive to gonadotropins progressively disappear from the ovaries
- b) Oocytes do not respond to gonadotropins – ovarian resistance

#### 2) Pathologic or induced

- a) Infections or tumours of reproductive tract resulting in destruction or removal of a significant amount of ovarian tissue
- b) Ionising radiation
- c) Chemotherapy (cytotoxic agents)
- d) Surgery impairing ovarian blood supply
- e) Autoimmune or other processes disturbing ovarian function

### Key Objectives

- Counsel women with menopause that nothing can prevent physiologic menopause (ovarian function cannot be prolonged indefinitely) and nothing can be done to postpone its onset or slow its progress. However, reassure patient that sudden ageing will not occur, sexual activity can continue, and hormone replacement therapy (HRT) can prevent many of the adverse effects seen.
- Explain the physiologic events being experienced by a woman in menopause in order to dispel fears and assess symptoms such as anxiety, depression, or sleep disturbance.
- State that osteoporosis is one of the most important health hazards associated with the menopause, along with an increase in coronary artery disease (CAD), Alzheimer disease, macular degeneration of the retina, urinary continence problems and bowel malignancy (all have a lesser incidence in women taking HRT).

## **General/Specific Objectives**

- Through efficient, focused data gathering:
  - Differentiate from other causes of amenorrhoea (see #063 Menstrual Cycle Abnormal, #117 Vaginal Bleeding, Excessive in Amount or Irregular in Timing and #118 Vaginal Discharge / Urinary Symptoms, Vulvar Lesions, Sexually Transmitted Diseases (STDs)).
  - Determine whether there has been a decrease in amount and duration of menstrual flow, tapering to spotting, or cessation; determine length of time since onset of amenorrhoea.
  - Determine whether there are symptoms associated with vaginal changes to exclude other pathology (brownish discharge, bleeding with coitus, vaginal pruritus or leucorrhoea, excessive vaginal dryness, dyspareunia).
  - Elicit history of urinary tract symptoms, change in breasts, hot flush, cardiovascular symptoms, skin and hair changes, or any psychological complaints.
  - Perform a diagnostic pelvic examination.
  - Obtain a relevant family history regarding risks of cancer, osteoporosis and cardiovascular disease.
- Interpret critical clinical and laboratory findings which were key in the processes of exclusion, differentiation, and diagnosis:
  - Select patients requiring cytologic smears, hormone measurements, or bone density studies.
- Conduct an effective initial plan of management for a patient with menopause:
  - Counsel patients regarding prevention of osteoporosis, advantages and disadvantages of oestrogen replacement (e.g. endometrial cancer, breast cancer, hepatic function, hypertension, thromboembolic disease, lipid metabolism).
  - List contraindications to HRT.
  - Outline guidelines for hormonal (or oestrogen and progestin) replacement therapy.
  - List alternatives to oestrogen therapy for some of the symptoms of menopause.

## Overview

Depressive illness is one of the commonest illnesses in medicine and is often confused with other illnesses. Depressed and anxious patients often present to doctors with somatic symptoms used as 'tickets-of-entry', when their primary disorders are psychological.

Although the return to the pre-depressive state, either spontaneously or with treatment, is the rule, untreated depressive episodes may last six months, they are usually recurrent, and chronic outcomes are not rare.

Bipolar disorders are episodic recurrent illnesses which have an onset at an early age and with a great deal of variation in cycling patterns.

## Causes

### 1) Major depression

- a) With melancholic features
- b) With psychotic features
- c) Postpartum
- d) Seasonal
- e) Atypical
- f) Recurrent

### 2) Dysthymia

### 3) Cyclothymic disorder

### 4) Bipolar I disorder

- a) Hypomanic
- b) Manic
- c) With psychotic features
- d) Postpartum
- e) Seasonal
- f) Rapid cycling
- g) Mixed

### 5) Bipolar II disorder

- a) Hypomanic
- b) Depressed
- c) Melancholic
- d) Atypical
- e) Postpartum

## **6) Adjustment disorder with depressed mood**

### **7) Mood disorder due to a medical condition**

- a) Depressed (drugs, neoplasms, endocrine, cerebrovascular disorder)
- b) Manic/Hypomanic (drugs, infections, neoplasms, metabolic disorders, epilepsy)
- c) Mixed

### **8) Substance-induced mood disorder (amphetamines, cocaine, cannabis, hallucinogens)**

- a) Depressed
- b) Manic/Hypomanic
- c) Mixed
- d) When intoxicated
- e) During withdrawal

### **9) Schizoaffective disorders**

- a) Bipolar
- b) Depressed

#### **Key Objectives**

- Differentiate between the presence of one of the mood disorders (illness) and normal (non-illness) conditions such as bereavement and periods of sadness.
- Recognise the depressed patient at risk of suicide.

#### **General/Specific Objectives**

- Through efficient, focused data gathering:
  - Determine the intensity, duration (weeks, years) of depression and its effect on function (loss of interest in all activities, change in sleep, appetite, libido, energy).
  - Determine whether a general medical condition is present, use or abuse of drugs (or withdrawal).
  - Elicit history of sense of worthlessness, excessive guilt, inability to concentrate, suicidal thoughts.
  - Examine for slowness of thought, speech, motor activity or signs of agitation such as fidgeting, moving about, hand-wringing, nail-biting, hair-pulling, lip-biting; examine vital signs, pupils, and skin for previous suicide attempts, stigmata of drug and/or alcohol use, thyroid gland.
  - Elicit history of elevated mood, expansive or irritable mood (for at least one week) with impairment in function or without impairment and lasting only four days.

- Interpret critical clinical and laboratory findings which were key in the processes of exclusion, differentiation, and diagnosis:
  - Select patients only when high index of suspicion requires further investigation for medical condition or drugs that affect mood (e.g. thyroid function, toxicology screen, serum electrolytes, liver function tests).
- Conduct an effective plan of management for a patient with mood disorders:
  - Outline and describe treatments available for mood disorders under categories of medications, physical treatment, and psychologic treatment.
  - Select patients in need of specialised care.

### Overview

Although many disease states can affect the mouth, the three most common and most important ones are: **dental caries**, **gingivitis**, and **oral carcinoma**.

### Causes

#### 1) Sore mouth problems in children

- a) Abnormalities in teeth (caries from pacifiers, eruptions, number, form, size)
- b) Trauma (accidents, child abuse)
- c) Gingival overgrowth (idiopathic, genetic, drugs)

#### 2) Mouth problems in adults

- a) Dental caries / Periapical dental abscess / Cellulitis (emergency)
- b) Gingivitis / Periodontal / General mouth diseases
  - Oral hygiene
  - Systemic factors (haematological disorders, HIV)
  - Sexually transmitted / blood-borne infections
- c) Mouth ulcers / Lip lesions
  - Acute, painful (aphthous), herpetic
  - Chronic persisting
    - Malignant (squamous cell, muco-epidermoid, basal cell)
    - Pre-malignant (leukoplakia, erythroplakia)



SCC of lower lip



Herpes simplex of lower lip

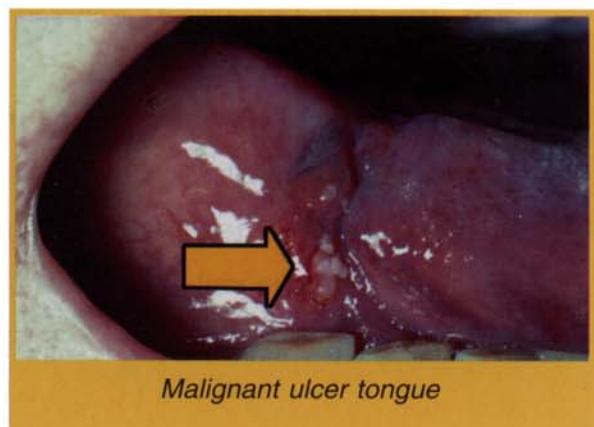
- d) Pigmented lesions in the mouth
  - Tobacco, Betel nut
  - Lead, bismuth, iron
  - Drugs (antimalarials, oral contraceptive pill (OCP))
  - Addison disease
  - Peutz-Jeghers syndrome
  - Melanoma
- e) Other (cellulitis, trauma, *Candida*)
- f) Salivary glands (mumps, bacterial infections, sialolithiasis, tumour, mucous cyst)

### 3) Mouth problems in the elderly

- a) Receding gingivae/gums
- b) Edentulism



Leukoplakia tongue



Malignant ulcer tongue



Peutz-Jeghers syndrome



Mucous cyst

## **Key Objectives**

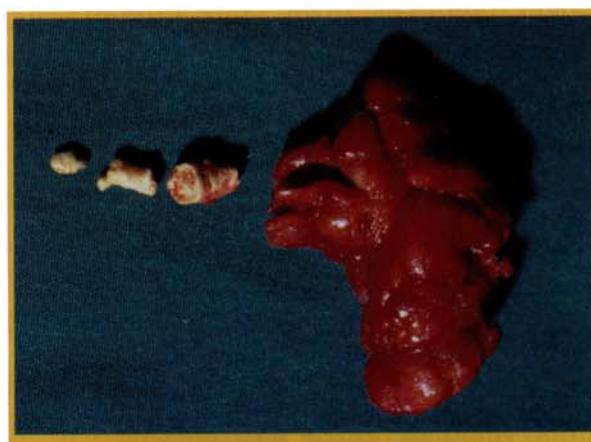
- Select patients for referral to dentist for caries/abscess/cellulitis as well as regular prophylactic care.
- Select patients for referral to ear, nose and throat (ENT) specialist for any indurated lesions.

## **General/Specific Objectives**

- Through efficient, focused data gathering:
  - Elicit history of tobacco (smoking or chewing) or large quantities of alcohol or spices and perform examination of the mouth including direct visualisation and palpation of the teeth and the entire surface searching for painless plaque, ulcers, or lumps in the mucosa, tongue, mouth, or neck.
- Interpret the critical clinical and laboratory findings which were key in the processes of exclusion, differentiation, and diagnosis.
- Conduct an effective plan of management for a patient with acute mouth problems:
  - Outline indications for antibiotic treatment and choice of antibiotics.
  - Counsel patients about the relationship between plaque and gingivitis (as well as prophylaxis).



*Submandibular duct calculi palpable bimanually*



*Resected salivary gland and calculi*

## 067A Systolic Murmur

### Overview

Systolic murmurs are quite common, frequently 'innocent' flow murmurs. Good clinical examination techniques are required to differentiate the different cardiac lesions which give rise to systolic murmurs. The most common pathological lesions are **mitral regurgitation, aortic stenosis** and **tricuspid regurgitation**.

### Causes

#### 1) Mitral regurgitation

##### a) Leaflet

- Rheumatic fever
- Collagen diseases (systemic lupus erythematosus (SLE), scleroderma)
- Connective tissue diseases (Marfan syndrome / congenital / mitral valve prolapse)
- Endocarditis
- Hypertrophic cardiomyopathy

##### b) Chordae tendinae

- Rupture (myocardial infarction (MI))
- Mitral valve prolapse
- Endocarditis
- Rheumatic fever
- Trauma

##### c) Papillary muscle

- Dysfunction (ischaemia/infarct, aneurysm, dilated cardiomyopathy)
- Rupture (infarction, trauma)

##### d) Mitral annulus

- Calcification (rheumatic fever, chronic renal failure)
- Dilatation (dilated cardiomyopathy)

#### 2) Aortic stenosis

##### a) Leaflet disease

- Unicuspid, bicuspid (congenital), tricuspid
- Rheumatic fever
- Degenerative

##### b) Sub-valvular disease (hypertrophic cardiomyopathy)

##### c) Supra-valvular disease (aortic narrowing)

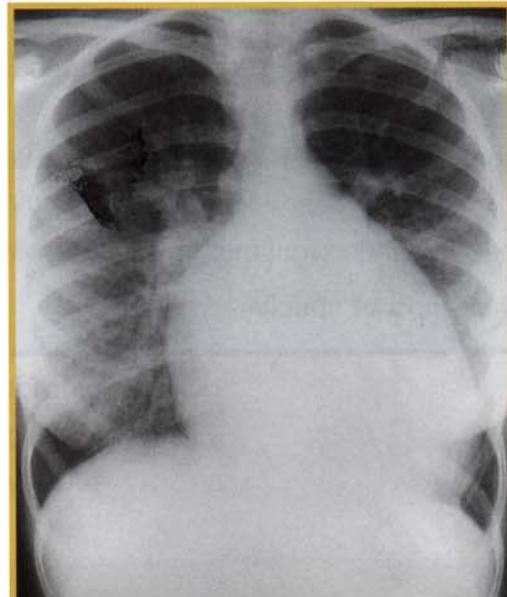
### **3) Tricuspid regurgitation**

#### **a) Dilatation of right ventricle / tricuspid annulus**

- Right ventricular myocardium (infarction, dilated cardiomyopathy)
- Pulmonary hypertension / right ventricular dilatation
  - Congestive heart failure
  - Mitral stenosis/regurgitation
  - Primary pulmonary disease (secondary pulmonary hypertension)
  - Primary pulmonary hypertension
  - Left to right shunt / Eisenmenger syndrome
  - Pulmonary valve stenosis

#### **b) Valve abnormality (rheumatic fever, endocarditis especially secondary to intravenous drug abuse, Ebstein anomaly, carcinoid syndrome)**

### **4) Pulmonary stenosis**



### **5) Ventricular septal defect (VSD)**

#### **Key Objectives**

- Determine whether the systolic murmur is innocent or pathologic.
- Determine aetiology of the murmur in the setting of clinical presentation, the patient's cardiovascular reserve, the clinical examination findings and evidence obtained from the electrocardiogram (ECG), chest X-ray and echocardiogram.
- Determine the need for specialist referral and intervention.
- Select patients in need of prophylaxis for bacterial endocarditis.

## **General/Specific Objectives**

- Through efficient, focused data gathering:
  - Determine the origin of the murmur.
  - Define associated murmurs and evidence of structural cardiac disorders.
  - Determine whether heart failure is present, and whether left-sided, right-sided, or both.
  - Determine whether the heart rhythm is abnormal.
- Interpret critical clinical and laboratory findings which were key in the processes of exclusion, differentiation, and diagnosis:
  - Diagnose abnormal heart rhythm by means of clinical findings and ECG.
  - Select diagnostic imaging for further investigation of the systolic murmur.
- Conduct an effective plan of management for a patient with a systolic murmur:
  - Counsel and educate the patient concerning possible need for endocarditis prophylaxis.
  - Outline management of heart failure, including side-effects of prescribed medications.
  - Discuss the need for anticoagulants in patients with atrial fibrillation.
  - Select patients in need of specialised care.

### 067B Diastolic Murmur

#### Overview

A cardiac diastolic murmur is almost always indicative of cardiac pathology. The most common causes are **aortic regurgitation** and **mitral stenosis**. These can usually be differentiated using good clinical examination skills.

#### Causal Conditions

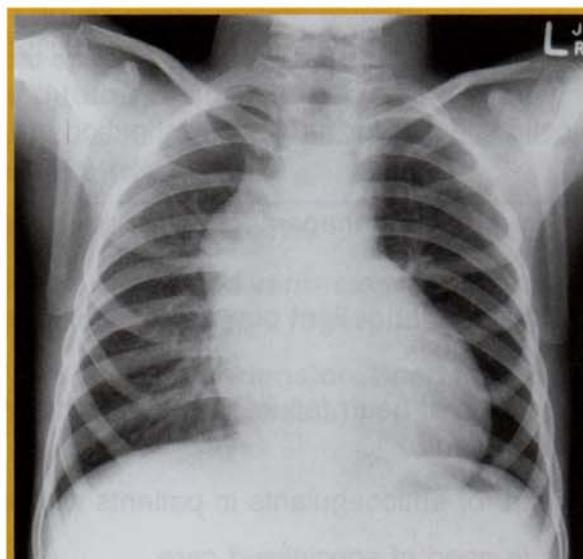
##### 1) Aortic regurgitation

###### a) Leaflet abnormality

- Bicuspid aortic valve (congenital: usually associated with aortic stenosis)
- Endocarditis
- Rheumatic fever
- Rheumatoid arthritis (RA), ankylosing spondylitis
- Trauma

###### b) Aortic root and ascending aorta

- Hypertension
- Marfan syndrome
- Aortic valve replacement (artificial valve, allograft, xenograft)
- Dissecting aneurysm
- Reiter syndrome
- Ankylosing spondylitis
- Aortitis (syphilis)



Aortic regurgitation

## **2) Pulmonary regurgitation**

### **3) Mitral stenosis**

- Rheumatic fever
- Congenital
- Collagen vascular disease (systemic lupus erythematosus (SLE), RA)
- Carcinoid syndrome

### **4) Tricuspid stenosis**

#### **Key Objectives**

- Determine the aetiology of the murmur in the setting of the clinical presentation, the patient's cardiovascular reserve, the clinical examination findings and evidence obtained from the electrocardiogram (ECG), chest X-ray and echocardiogram.
- Determine the need for specialist referral and intervention.
- Select patients in need of prophylaxis for bacterial endocarditis.

#### **General/Specific Objectives**

- Through efficient, focused data gathering:
  - Determine the origin of the murmur.
  - Define associated murmurs and evidence of structural cardiac disorders.
  - Determine whether heart failure is present, and whether left-sided, right-sided, or both.
  - Determine whether the heart rhythm is abnormal.
- Interpret critical clinical and laboratory findings which were key in the processes of exclusion, differentiation, and diagnosis:
  - Diagnose abnormal heart rhythm by means of clinical findings and ECG.
  - Select diagnostic imaging for further investigation of the diastolic murmur.
- Conduct an effective plan of management for a patient with a diastolic murmur:
  - Counsel and educate the patient concerning possible need for endocarditis prophylaxis.
  - Outline management of heart failure, including side-effects of prescribed medications.
  - Discuss the need for anticoagulants in patients with atrial fibrillation.
  - Select patients in need of specialised care.

## 067C Heart Sounds, Pathological

### Overview

Pathological heart sounds are clues to underlying heart disease.

### Causes

#### 1) Heart sound 1 (HS1) – mitral valve

- a) Loud (mitral stenosis, hyperthyroidism, short PR interval)
- b) Soft (mitral regurgitation, long PR interval, chronic obstructive lung disease, pericardial effusion)

#### 2) Heart sound 2 (HS2) – aortic and pulmonary components

- a) Loud (systemic hypertension, pulmonary hypertension, increased pulmonary flow)
- b) Soft (hypotension, left heart failure, aortic valve stenosis, pericardial effusion)
- c) No split (Eisenmenger syndrome, severe pulmonary embolus, pulmonary valve stenosis)

#### 3) Altered splitting of heart sounds

- a) Increased splitting of HS2
  - Delayed pulmonary valve closure (pulmonary embolus, pulmonary hypertension, left-right shunt, right bundle branch block (RBBB))
  - Early aortic closure (mitral regurgitation, ventricular septal defect (VSD))
- b) Fixed split (atrial septal defect (ASD))
- c) Paradoxical split (left bundle branch block (LBBB), hypertension, left ventricular outflow obstruction)

#### 4) Heart sounds 3 and 4

- a) Physiological (young subjects)
- b) Third heart sound (dilated ventricle with volume overload, left or right heart failure, mitral/tricuspid regurgitation)
- c) Fourth heart sound (hypertension, heart failure, hypertrophic cardiomyopathy, aortic stenosis)

## **5) Extra heart sound and clicks**

- a) Ejection sounds (early systolic) – hypertension, aortic and pulmonary stenosis
- b) Opening sounds (early diastolic) – mitral stenosis, tricuspid stenosis
- c) Clicks (midsystolic) – mitral valve prolapse
- d) Pericardial knock (pericardial effusion)
- e) Prosthetic valve sounds

### **Key Objective**

- Interpret the origin of heart sounds.

### **General/Specific Objectives**

- Through efficient, focused, data gathering:
  - Determine whether underlying heart disease is present and how the heart sounds help to define this.
- Interpret critical clinical and laboratory findings which are key in the processes of exclusion, differentiation, and diagnosis:
  - Select common investigative tools such as chest X-ray, electrocardiogram (ECG), and echocardiography to assist with diagnosis and understand principles of interpretations of these tests.
- Conduct an effective plan of management for a patient with pathological heart sounds:
  - Select patients in need of specialised care.

## Overview

Neck masses may come to clinical attention when noted by the patient as a presenting symptom, or as an incidental finding during routine physical examination or during a diagnostic imaging procedure. The most common causes of neck swelling are **lymph node** and **thyroid gland** swellings. Aspiration cytology of focal neck masses is often helpful in diagnosis of the cause.

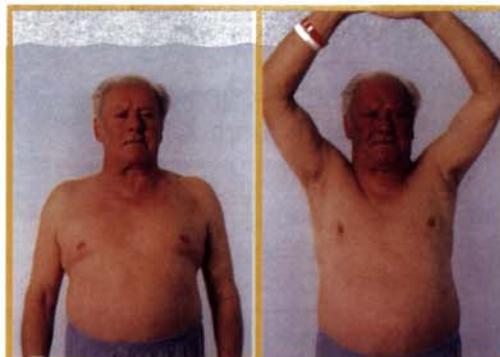
## Causes

### 1) Cervical lymph node swellings

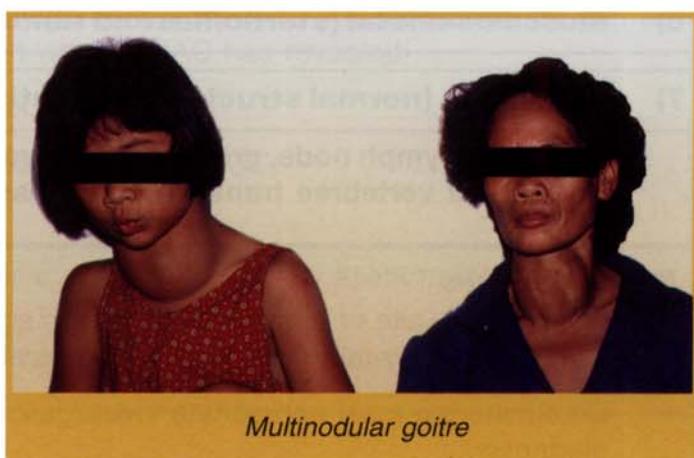
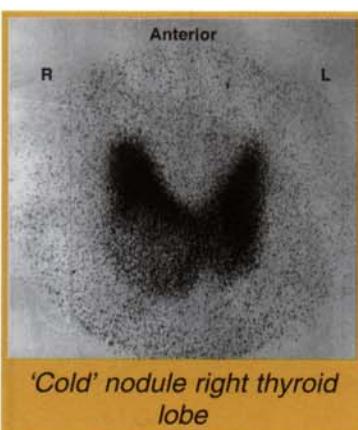
- a) Associated with overt or occult neoplastic or inflammatory primary lesions of head and neck
- b) Associated with extracervical primary lesions (lung, abdomen, testis)
- c) Associated with general lymphadenopathy

### 2) Thyroid swellings (goitre)

- a) Uniform smooth diffuse enlargement (physiologic goitre, Graves disease)
- b) Multinodular enlargement (multinodular goitre)
- c) Uninodular (dominant nodule in multinodular goitre, or true solitary nodule)



Pemberton sign – retrosternal goitre



Multinodular goitre

### 3) Salivary gland swelling

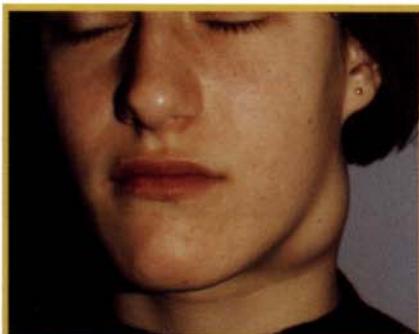
- a) Neoplasm (pleomorphic adenoma, adenolymphoma, etc.)
- b) Obstructions (stone)
- c) Inflammations (acute or chronic)



*Enlarged submandibular salivary gland*

### 4) Embryologic remnants

- a) Branchial cyst or fistula
- b) Thyroglossal cyst
- c) Lymphoepithelial cyst



*Branchial cyst*



*Thyroglossal cyst – moves with tongue*

### 5) Vascular / Neuroendocrine

- a) Carotid body tumour (chemodectoma)

### 6) Musculoskeletal (sternomastoid tumour, cervical rib)

### 7) Subjective (normal structure presenting as lump)

- a) Normal lymph node, greater cornu hyoid, laryngeal structures, cervical vertebrae transverse processes

#### Key Objectives

- Identify likely site of origin and diagnostic significance of neck or facial lumps by history-taking and careful physical examination.
- Determine the most appropriate investigations required to confirm diagnosis.

## **General/Specific Objectives**

- Through efficient, focused data gathering:
  - Determine whether the lesion is of rapid onset or insidious.
  - Determine the presence of hyperthyroidism (including findings typical of Graves disease) or hypothyroidism.
  - Perform examination of the thyroid gland, cervical lymph nodes, salivary glands and other neck and facial structures.
- Interpret the critical clinical and laboratory findings which were key in the processes of exclusion, differentiation, and diagnosis:
  - Discuss the utility of thyroid stimulating hormone (TSH) determination for screening patients suspected of thyroid abnormalities.
  - Select other thyroid function studies if TSH is abnormal, and outline their utility.
  - In a patient with a thyroid nodule, discuss the use of fine needle aspiration cytology (FNAC) and high-resolution thyroid ultrasonography.
- Conduct an effective plan of management for a patient with a neck mass due to goitre/thyroid disease:
  - Outline a management plan for hyperthyroidism, hypothyroidism, thyroiditis, and thyroid nodule.
  - Discuss control of symptoms of hyperthyroidism; discuss advantages and disadvantages of anti-thyroid drugs and radioactive iodine.
  - Discuss types of thyroid cancer and their various presentations.
- Discuss diagnosis and management of a patient presenting with clinical abnormalities of thyroid function without a neck swelling.
- Develop an algorithm for a patient presenting with a neck lump believed clinically to be a focal cervical node swelling.
- Develop diagnostic and management plans for a patient with generalised enlargement of cervical lymph nodes.
- Develop diagnostic and management plans for a patient presenting with a swelling involving left supraclavicular lymph nodes.
- Develop diagnostic and management plans for a patient presenting with a focal lymph node swelling in whom FNAC has revealed:
  - Metastatic adenocarcinoma.
  - Metastatic squamous cell carcinoma (SCC).
  - Hodgkin lymphoma.
- Develop diagnostic and management plans for a patient presenting with a salivary gland swelling.
- Select patients in need of specialised care.

## Overview

Disordered sensation may be alarming and highly intrusive. The clinician requires a framework of knowledge in order to assess abnormal sensation, consider the likely site of origin, and recognise the implications.

## Causes

### 1) Mononeuropathy

- a) Compression from nerve entrapment syndromes, e.g. carpal tunnel syndrome, ulnar neuropathy
- b) Radiculopathy (intervertebral disc lesion, foraminal encroachment)

### 2) Polyneuropathy (diabetes mellitus, alcoholism, renal failure, polyarteritis nodosa, systemic lupus erythematosus (SLE), systemic sclerosis, sarcoidosis, rheumatoid arthritis (RA), AIDS, leprosy)

### 3) Spinal cord lesion (cord tumour, infarction, multiple sclerosis, syringomyelia, vitamin B<sub>12</sub> deficiency)

### 4) Brain stem lesion (neoplasm, vascular lesion, demyelinating lesion)

### 5) Cerebral hemisphere lesion (tumour, demyelinating lesion, stroke)

### 6) Hyperventilation

## Key Objective

- Determine whether the sensory complaint is positive, also called paraesthesia or dysaesthesia (tingling, pins and needles, pricking, burning, knifelike), or negative, termed hypoesthesia or anaesthesia (numbness, diminution or absence of feeling).

## General/Specific Objectives

- Through efficient, focused data gathering:
  - Determine the portion of the neural axis likely to be causing the symptoms.
  - Contrast peripheral neuropathies, spinal cord or brain stem dysaesthesia from cortical sensory dysfunction.
  - Recognise that only negative symptoms or hypoesthesia may be detectable on physical examination.
  - Differentiate between possible causes of the lesion.

- Interpret critical clinical and laboratory findings which were key in the processes of exclusion, differentiation, and diagnosis:
  - Select initial laboratory investigations including such tests as nerve conduction / electromyelography (EMG) and serum vitamin B<sub>12</sub> levels.
  - Select patients in need of specialised care for further investigation.
- Conduct an effective plan of management for a patient with numbness and tingling:
  - Outline initial management for mononeuropathy.

(See also #089 Regional Pain)

## Overview

Because pain is understood to be a signal of disease, it is the most common symptom that brings a patient to a clinician's attention. Pain is an unpleasant somatic sensation, but it is also an emotion. Although control of pain and discomfort is a crucial endpoint of medical care, the degree of analgesia provided is often inadequate. All clinicians should be competent to recognise the development and progression of pain, and to develop strategies for its control.

## Causes

- 1) Face pain (trigeminal neuralgia)**
- 2) Back pain**
- 3) Pain in the cancer patient**
- 4) Pain in the postoperative patient**
- 5) Somatic pain (burn, arthritis, bone metastasis)**
- 6) Visceral pain (intestinal colic, renal 'colic', cancer of pancreas)**
- 7) Neurologic pain (herniated intervertebral disc)**

## Key Objectives

- State that the ideal treatment for any pain is to remove the cause.
- Because some conditions are so painful that rapid and effective analgesia is essential (e.g. in first aid, after injury, and after surgery), and in some conditions it is not possible to remove the cause (e.g. metastatic cancer), demonstrate familiarity with the use of analgesic medications as a first line of treatment in these cases.
- Discuss that depression, uncontrolled pain, the adverse effects of opioids, and fear of pain may precipitate suicidal thoughts or requests for aid in dying.

## General/Specific Objectives

- Through efficient, focused, data gathering:
  - Determine the most likely cause of the pain (clinical features and use of provocative manoeuvres are key).
  - Because depression is the most common emotional disturbance in patients with chronic pain, elicit evidence of depression.

- Interpret critical clinical and laboratory findings which were key in the processes of exclusion, differentiation, and diagnosis:
  - Select laboratory investigations to identify cause of pain if required.
  - Select patients in need of specialised care for further investigation.
- Conduct an effective plan of management for a patient with acute or chronic pain:
  - Categorise and contrast drugs for relief of pain (non-narcotic analgesics, narcotic analgesics, anticonvulsants and anti-arrhythmics, tricyclic antidepressants, antispasmodics and steroids).
  - Discuss the use of combinations of medications.
  - Outline a multidisciplinary approach which utilises medications, counselling, physical therapy, nerve block, surgery, etc.
  - Since pain also adds to the discomfort of those caring for the patient with chronic pain, counsel caregivers.
  - Select patients in need of referral to a pain clinic or pain specialist.

## 070A Somatic Complaints / Somatoform Disorders

### Overview

Non-specific somatic symptoms with no immediate organic explanation frequently present in primary care. Most are brief but some are persistent and result in repeated consultations. Somatisation implies the presentation of emotional distress as physical or bodily symptoms, which mask the underlying anxiety or mood disorder. These medically unexplained symptoms reflect patients' cognitive concerns and attributions about illness in general or about specific conditions, at either a conscious or unconscious level. Patients' interpretation of bodily sensations may be influenced by their medical experience and beliefs, their social circumstances and their personality. **Somatoform disorder** is the general term to cover all of the different categories of medically unexplained symptoms.

### Causes

- 1) Acute transient somatic symptoms in response to stress
- 2) Subacute somatic symptoms in patients with depression or panic disorder
- 3) Chronic or recurrent somatic symptoms
  - a) Somatisation disorder
  - b) Hypochondriasis
  - c) Conversion disorder / Dissociative disorder
  - d) Body dysmorphic disorder
  - e) Somatoform pain disorder
  - f) Factitious disorder
  - g) Malingering

### Key Objective

- Differentiate various symptoms such as chest pain, palpitations, dyspnoea, abdominal pain, etc. which are due to an affective disorder or panic/anxiety, from similar symptoms due to organic causes.

### General/Specific Objectives

- Through efficient, focused, data gathering:
  - Elicit history about current life stresses (separation, death, substance abuse), avoidance patterns or panic attacks, evidence of somatisation since adolescence, family history of somatisation.
  - Determine whether there was sexual abuse, physical abuse, emotional neglect.

- Interpret critical clinical and laboratory findings which were key in the processes of exclusion, differentiation, and diagnosis:
  - Select patients for limited laboratory testing, to exclude organic causes.
- Conduct an effective plan of management for a patient with somatic complaints:
  - Outline initial management including education about anxiety, supportive psychotherapy for life stressors, instruction in relaxation techniques.
  - Discuss medications available for treatment of somatic complaints / panic disorder.
  - Select patients in need of specialised care.

# 071 Painful Limb

## 071A Pain in the Upper Extremities

(See also #089E Shoulder Pain and #089F Hand/Wrist/Elbow Pain)

### Overview

After backache, upper extremity pain is the next most common type of musculoskeletal pain.

### Causes

#### 1) Trauma / Inflammation

- a) Torsion, contusion, fracture, dislocation
- b) Tendinitis, bursitis, arthritis
- c) Frozen shoulder / Traumatised joints

#### 2) Nerve impingement

- a) Carpal tunnel
- b) Cervical spondylosis / Disc herniation
- c) Neuritis
- d) Tumours

#### 3) Degenerative / Rheumatic

- a) Arthritis
- b) 'Fibromyalgia'
- c) Renal osteodystrophy (pseudogout)



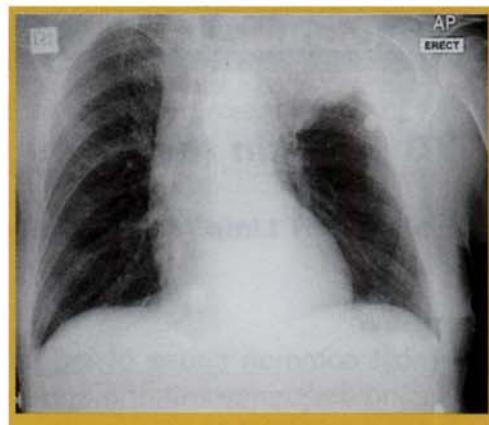
Longhead biceps tendon rupture – relaxed/contracted

#### 4) Vascular

- a) Arterial thromboembolism
- b) Raynaud phenomenon



Gangrene fingers – vasculitis



Pancoast tumour

- c) Venous thrombosis
- d) Lymphoedema
- e) Thoracic outlet syndrome

**5) Musculoligamentous (e.g. rotator cuff and other tendon tears and ruptures, myositis ossificans)**

**6) Referred**

- a) Myocardial ischaemia
- b) Gallbladder disorders / Subphrenic abscess
- c) Apical lung tumour (Pancoast syndrome)

### **Key Objective**

- Demonstrate a careful physical examination with implementation of specific manoeuvres for diagnosis, since most cases can be diagnosed without imaging.

### **General/Specific Objectives**

- Through efficient, focused, data gathering:
  - Differentiate between various causes of upper extremity pain.
- Interpret critical clinical and laboratory findings which were key in the processes of exclusion, differentiation, and diagnosis:
  - If necessary, select diagnostic imaging and laboratory investigation.
- Conduct an effective plan of management for a patient with pain in the upper extremities:
  - Outline a plan of management for various types of upper extremity pain.
  - Select patients in need of specialised care.

### 071B Pain in the Lower Extremities

(See also #061 Limp / Pain in Lower Extremity in Children)

#### Overview

The most common cause of leg pain is muscular or ligamentous strain, seen with increasing frequency with the current interest in physical activity.

#### Causes

##### 1) Articular (degenerative joint disease)

- a) Hip (degenerative joint disease)
- b) Knee (degenerative joint disease, gout)
- c) Ankle
- d) Foot/Toes (gout)

##### 2) Non-articular

- a) Musculoligamentous (exercise, trauma)
- b) Vascular (thrombo-phlebitis, arterial insufficiency, varicose veins)
- c) Neurologic (lumbar disc disease, spinal stenosis)



Gangrene foot

## **Key Objectives**

- Determine whether the pain is articular (hip, knee, ankle) or non-articular (muscular, vascular, neurologic) and whether related to exertion or not.
- Recognise that degenerative joint disease and arterial insufficiency frequently co-exist.

## **General/Specific Objectives**

- Through efficient, focused, data gathering:
  - Differentiate between different causes of lower extremity pain by eliciting essential information (e.g. precipitating events) and manoeuvres which reproduce the pain.
  - Perform examination of lower limb including observation of gait and posture, examination and determination of range of motion of joints, measurement of calves and thighs, and palpation of peripheral arteries.
- Interpret critical clinical and laboratory findings which were key in the processes of exclusion, differentiation, and diagnosis:
  - List indications for radiographic, magnetic resonance imaging (MRI), and arthroscopic examination.
- Conduct an effective plan of management for a patient with pain in the lower extremities:
  - Outline a multidisciplinary plan of management for lower extremity pain caused by degenerative joint disease.
  - Outline a multidisciplinary plan for prevention of peripheral vascular disease.
  - Outline a plan of management for exercise-induced injuries which makes possible the return to physical activity.
  - Select patients in need of specialised care.

### 071C Painful Lower Limb – Varicose Veins

#### Overview

Varicose veins are dilated, tortuous, elongated veins in the lower limb. They may present as concern with the cosmetic appearance of the visible venous swellings, or as a source of local chronic discomfort worse on standing and eased by recumbency. Acute symptoms result from localised acute thrombosis in superficial veins (superficial thrombophlebitis) causing a painful palpable subcutaneous cord. Deep venous thrombosis (DVT) may complicate superficial varices or arise independently (see #034B Unilateral Limb Oedema (Swollen Limb)). In the post-thrombotic syndrome, leg ulceration follows chronic deep venous insufficiency. Significant risk factors associated with 'primary' vascular veins are the female sex, pregnancy and multiparity, and a family history.

#### Causes

##### 1) 'Primary' varicose veins of lower limb – cause unknown

Often associated with female gender, systemic hormonal effects, pregnancies, familial influences, iliac (left) vein compression; or to primary valvular incompetence in superficial veins and in the communications between deep and superficial venous system.

##### 2) 'Secondary' varicose veins of lower limb

Superficial varices secondary to deep venous obstruction or incompetence, arteriovenous fistulae, or compression from pelvic mass.



Varicose veins – saphenofemoral incompetence



Chronic deep venous insufficiency

### **3) Miscellaneous causes of dilated superficial veins**

- a) Distal venous obstruction (e.g. retrosternal goitre)
- b) Diversionary anastomotic channels (e.g. obstructed superior or inferior vena cava, effects of portal hypertension)
- c) Arteriovenous malformations

#### **Key Objectives**

- Differentiate between uncomplicated, primary superficial varices and those associated with chronic deep venous insufficiency.
- Understand the principles of assessment of a patient presenting with symptomatic varicose veins.

#### **General/Specific Objectives**

- Through efficient, focused data gathering:
  - Appreciate the general anatomy and physiopathology of the superficial and deep venous systems of the leg, and their interrelationships during standing and activity.
- Interpret critical clinical and laboratory findings which were key in the processes of exclusion, differentiation, and diagnosis:
  - Recognise the common sites of communication between superficial and deep venous systems; and the principles and practice of tests for valvular incompetence.
  - Ability to answer the diagnostic questions:
    - \* Are definite superficial varices present, and do they involve the long or short saphenous system or both?
    - \* Are signs of vascular incompetence, particularly saphenofemoral incompetence, present; and are there signs of incompetent communicating or perforating veins below groin level?
    - \* Are the deep veins normal or is there evidence of deep venous circulatory insufficiency?
- Conduct an effective plan of management for a patient presenting with symptomatic varicose veins:
  - Outline noninterventional methods of management.
  - Outline indications and principles of sclerotherapy.
  - Outline indications for surgery and select patients for onward referral and further investigation.

## 072 Palpitations (Abnormal Electrocardiogram (ECG) / Arrhythmia)

### Overview

The symptom of palpitations describes an abnormal subjective awareness of the heart beat. Patients can usually distinguish between occasional, intermittent or continuous bouts of palpitations and whether they are regular or irregular. In this regard, asking the patient to tap out the beats on a table can often clarify the important features. Palpitations are commonly associated with anxiety and vasodilatational states but may indicate a more serious cardiac arrhythmia where there are usually associated symptoms (sweating, breathlessness, dizziness, fainting, chest pain) which can give important clues to the diagnosis. The definitive diagnosis requires a clinical assessment and/or electrocardiogram (ECG) during a bout of palpitations.

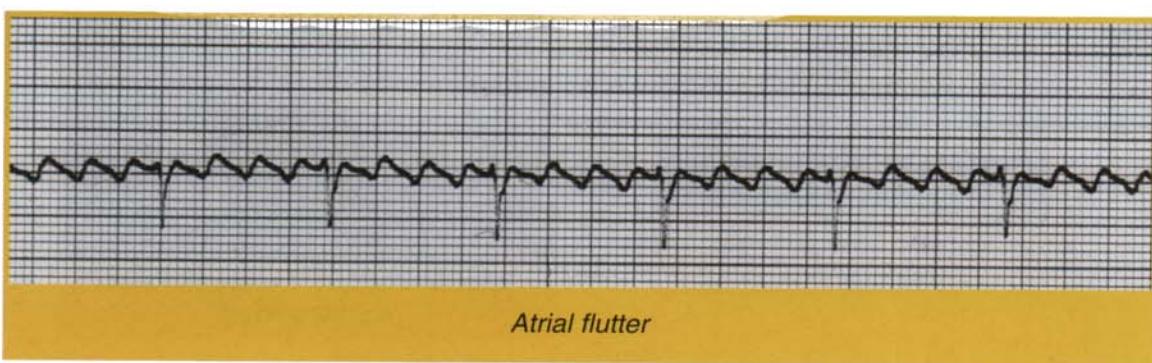
### Causes

#### 1) Sinus rhythm

- a) Vasodilatation / Sinus tachycardia (exercise, stress, fever, pregnancy, menopausal state, drugs)
- b) Anxiety
- c) Ectopic beats

#### 2) Atrial tachyarrhythmias

- a) Atrial premature complexes
- b) Atrial flutter and fibrillation
  - Idiopathic (lone fibrillator)
  - Ischaemic heart disease
  - Hypertensive heart disease
  - Valvular heart disease
  - Thyrotoxicosis
  - Cardiomyopathy (alcoholic, idiopathic, viral)
  - Electrolyte disorders
  - Drugs



### **3) Supraventricular tachycardia**

- a) Paroxysmal supraventricular tachycardia
- b) Wolff-Parkinson-White syndrome (WPW) / Concealed bypass tract
- c) Multifocal atrial tachycardia

### **4) Ventricular tachyarrhythmias**

- a) Premature ventricular ectopics
- b) Ventricular tachycardia
  - Sustained
  - Non-sustained

#### **Key Objectives**

- Select patients in need of urgent treatment.
- Differentiate palpitations due to intrinsic heart disease from those that are a manifestation of anxiety, exercise, or other systemic disease (differentiate from sinus tachycardia).
- Understand the indications for the use of drugs and when there are contraindications to particular drugs because of their pro-arrhythmic potential.
- Know when and how to use anticoagulant drugs in the patient with atrial fibrillation.

#### **General/Specific Objectives**

- Through efficient, focused data gathering:
  - Contrast benign palpitations to those associated with serious disease.
  - Diagnose major cardiac arrhythmias.
- Interpret critical clinical and laboratory findings which were key in the processes of exclusion, differentiation, and diagnosis:
  - Differentiate between causes of palpitations.
  - Elicit and interpret signs and symptoms which indicate that a cardiac arrhythmia requires immediate treatment.
  - Select and interpret appropriate investigations for patients presenting with palpitations, including cardiography and Holter monitoring.
- Conduct an effective plan of management for a patient with palpitations:
  - Outline initial management for the patient with an abnormal heart rhythm.
  - Select the patients in need of specialised care and/or consultation, including those with a benign or unknown aetiology.
  - Describe the indications for anticoagulant and/or anti-platelet therapy for patients with arrhythmias and perform initial and long term management.

### Overview

The **anxiety disorders** are characterised by excessive and persistent worry, anxiety or fear, and avoidant or controlling behaviours and phenomena, accompanied by physical symptoms of hyperarousal and autonomic hyper-reactivity. They occur commonly, and may present acutely (for example panic attacks) or with chronic impairment (for example, generalised anxiety disorder). Presentation with predominantly somatic symptoms, either a single complaint (e.g. chest pain, neurological deficit) or a large number of multisystem symptoms, through the process of somatisation, is frequent. The anxiety disorders are:

- **Generalised anxiety disorder:** enduring six months or more of excessive worry and anxiety, with muscle tension and physical indicators of hyperarousal, such as sleep and concentration disturbance, fatigue.
- **Panic disorder, with or without agoraphobia:** sudden anxiety attacks; fear of collapse, loss of control, or death; and hyperarousal, especially hyperventilation and its sequelae; with situational avoidance.
- **Phobias (specific, agoraphobia, and social):** excessive, unreasonable fear of specific situation, with avoidance, or extreme sensitivity and anxiety if endured.
- **Post-traumatic stress disorder:** exposure to extreme, threatening event and subsequent persistent hyperarousal, intrusive re-experiences, and avoidance of the trigger and allied events.
- **Obsessive-compulsive disorder:** recurrent and irrepressible thoughts, images or impulses, accompanied by anxiety symptoms, and repetitive driven habits or rituals to reduce distress or some anticipated dread.

### Causes

#### 1) Physical causes of anxiety

- a) **Cardiovascular (angina, arrhythmias)**
- b) **Drugs (caffeine, amphetamines, cocaine)**
- c) **Metabolic / Endocrine (thyroid, phaeochromocytoma)**
- d) **Neurological (encephalopathy, temporal lobe seizure, dementia)**
- e) **Respiratory (asthma, emboli, oedema)**

#### 2) Non-physical conditions causing anxiety

- a) Primary anxiety disorders (see *Overview*)
- b) Other psychiatric conditions – depression, substance abuse disorders, schizophrenia

## **Key Objectives**

- Identify the presence of a primary anxiety disorder and its type.
- Differentiate from secondary anxiety arising from other psychiatric conditions, physical causes or drugs, and from realistic anxiety arising from an environmental threat.

## **General/Specific Objectives**

- Through efficient, focused data gathering:
  - Elicit a history of excessive anxiety, fear or worry along with other symptoms specific to the particular anxiety disorder.
  - Determine the level of social, occupational and general functional disability.
- Interpret those clinical and laboratory findings key to the diagnostic process.
- Implement an appropriate management plan for the particular anxiety disorder and level of disability:
  - Education about the condition, causes and symptom manifestations.
  - General anxiety management including relaxation methods, hyperventilation control, and graduated exposure to trigger situations.
  - Specific intervention with problem-solving techniques and cognitive behavioural therapy, or specialist referral.
  - Selected drug therapy such as antidepressants.

### Overview

Any female patient who visits a clinician's office should have current screening guidelines applied and if appropriate, a Papanicolaou (Pap) smear should be recommended.

### Causes

#### 1) Normal

#### 2) Abnormal

##### a) Benign atypia

- Atypical glandular cells of uncertain significance (AGUS)
- Atypical squamous cells of uncertain significance (ASCUS)
- Infection

##### b) Human papilloma virus (HPV)

##### c) Mild/Severe dysplasia – cervical intra-epithelial neoplasia (CIN)

- CIN 1 – also called mild dysplasia
- CIN 2 – also called moderate dysplasia
- CIN 3 – also called carcinoma-*in-situ*

##### d) Invasive carcinoma (micro)

#### 3) False positive or negative smears

### Key Objective

- Select patients in need of referral for further investigation including colposcopy and target biopsy after the report of a Pap smear becomes available.

### General/Specific Objectives

- Through efficient, focused data gathering:
  - Determine whether the patient is at high risk for developing cervical dysplasia or invasive disease.
  - List situations which increase the index of suspicion for cervical dysplasia.
  - Describe how to obtain a Pap smear.
- Interpret critical clinical and laboratory findings which were key in the processes of exclusion, differentiation, and diagnosis:
  - Select additional investigation if appropriate.

- Conduct an effective plan of management for a patient with abnormal Pap smear:
  - List recommendations for prevention of cervical dysplasia / cervical cancer and identify health promotion strategies for young sexually active women.
  - Discuss the role of regular cervical cytology in the prevention of invasive disease.
  - Outline methods of treatment for pre-invasive disease of the cervix and list possible complications.
  - Discuss the association of HPV infection with CIN neoplasia and invasive cancer (including the most common HPV sub-types associated with progression to invasive cancer).
  - Discuss the specificity and sensitivity of Pap smear test, and factors leading to a false positive or negative test.

### Overview

Pelvic masses are common in clinical practice and need to be investigated to find the cause.

### Causes

#### 1) Gynaecologic

##### a) Ovary

- Functional cysts (follicular, corpus lutein cysts, theca lutein cysts)
- Hyperplastic (polycystic ovary, endometriotic cyst)
- Neoplastic
  - Serous cystadenoma / Carcinoma
  - Mucinous cystadenoma / Carcinoma
  - Thecomas / Granulosa cell tumours
  - Fibromas
  - Germ cell tumours (cystic teratoma, teratoma, gonadoblastoma, dysgerminoma)

##### b) Tube (salpinx)

- Ectopic pregnancy
- Inflammation (including hydrosalpinx/pyosalpinx), cysts (mesonephric, paramesonephric)

##### c) Uterus

- Pregnancy
- Haematometra / Pyometra
- Leiomyoma/Adenomyoma
- Sarcoma



#### 2) Non-gynaecologic (bowel, bladder, other)

## **Key Objectives**

- Determine whether the patient may be pregnant.
- Determine whether the mass is gynaecologic, and whether the origin is the ovary, tube, or uterus.

## **General/Specific Objectives**

- Through efficient, focused data gathering:
  - Elicit a history including menstrual, fertility, and obstetrical history, sexual activity, and associated symptoms.
  - Perform abdominal and pelvic examination including speculum examination.
  - Describe features suggestive of androgenisation in the reproductive age and oestrogenisation in prepubertal age group.
- Interpret critical clinical and laboratory findings which were key in the processes of exclusion, differentiation, and diagnosis:
  - List blood tumour markers if malignancy is suspected; pregnancy test and/or cultures if indicated.
  - Select diagnostic imaging appropriate for mass, or endometrial biopsy if indicated.
- Conduct an effective plan of management for a patient with a pelvic mass:
  - Outline management of functional cysts.
  - Outline management of tubo-ovarian abscess.
  - Counsel patients with leiomyoma and outline medical management.
  - Select patients in need of specialised care.

### Overview

Many hours each year are lost from school and work due to pelvic pain. Successful treatment requires a correct diagnosis. Once the diagnosis is established, specific and usually successful treatment may be instituted.

### Causes

#### 1) Pregnancy-related

- a) Ectopic pregnancy
- b) Aborting pregnancy
- c) Gynaecological conditions in pregnancy – complicated ovarian cysts, red degeneration of a leiomyoma
- d) Molar pregnancy

#### 2) Gynaecological

- a) Mittelschmerz
- b) Torsion (e.g. ovarian)
- c) Endometriosis
- d) Bleeding into a pelvic mass / Ruptured pelvic mass
- e) Infection (e.g. salpingitis)
- f) Dyspareunia

#### 3) Non-gynaecological (gastrointestinal, renal, musculoskeletal)

### Key Objective

- Determine whether the pain is acute or chronic, whether pregnancy is likely, and stabilise the patient whose pain is acute and life-threatening.

### General/Specific Objectives

- Through efficient, focused data gathering:
  - Elicit a history including menstrual, fertility, and obstetrical history, sexual activity, and associated symptoms.
  - Determine whether the patient's condition is haemodynamically stable and whether a candidate for possible emergency surgery.
  - Perform abdominal and pelvic examinations including speculum examination.

- Interpret critical clinical and laboratory findings which were key in the processes of exclusion, differentiation, and diagnosis:
  - List guidelines for ultrasound in pregnancy; obtain pregnancy test.
  - Select appropriate diagnostic imaging; list indications for laparoscopy.
- Conduct an effective plan of management for a patient with pelvic pain:
  - List indications for dilatation and curettage, laparoscopy, and laparotomy for aborting pregnancy or ectopic pregnancy including impact on future fertility.
  - Outline initial management of endometriosis.
  - Outline management of acute salpingitis.
  - Counsel for the purpose of preventing sexually transmitted diseases (STDs).
  - Counsel and outline management of patients with chronic pelvic pain associated with psycho-emotional factors.
  - Outline management of dyspareunia.
  - Select patients in need of specialised care.

## **077 Periodic Health Examination / Growth and Development**

### **Overview**

Periodically, patients visit clinicians' offices not because they are unwell, but because they want a 'check-up'. The periodic health examination is considered an opportunity to relate to an asymptomatic patient for the purpose of case finding and screening for undetected disease and risky behaviour. It is also an opportunity for health promotion and disease prevention, particularly in regard to immunisation, tobacco and alcohol abuse, and monitoring growth and weight.

### **Causal Conditions to be Considered**

- 1) Infant and toddler less than 3 years (e.g. delayed growth, development, abuse/neglect)**
- 2) Child 3–12 years (visual/hearing deficit, accidents, development, abuse/neglect)**
- 3) Youth 13–24 years (motor vehicle accident (MVA), substance abuse, sexually transmitted diseases (STDs), sedentary)**
  - a) Female (rubella immunisation, contraception)
  - b) Male (contraception)
- 4) Adult 25–44 years (substance abuse, eating disorders, family violence)**
  - a) Female (cervical cancer, hypertension)
  - b) Male (hypertension, elevated cholesterol, MVA)
- 5) Middle age 45–64 years (lung cancer, colon cancer, skin cancer, obesity)**
  - a) Female (osteoporosis, breast cancer)
  - b) Male (prostate cancer, ischaemic heart disease)
  - c) Hypercalcaemia – both sexes
- 6) Seniors older than 64 years (elder abuse, falls, drug-related morbidity, nutrition, cancer)**

### **Key Objectives**

- Determine patient's risks for common gender/age specific conditions.
- Elicit information about ethnic, family, socio-economic, occupational, lifestyle characteristics that are known to be at high-risk for a particular condition.

## **General/Specific Objectives**

- Through efficient, focused data gathering:
  - In an infant, toddler, or child, elicit information about risk factors at conception, pregnancy, and birth, familial factors, and existing signs of illness or environmental risk factors (missed immunisation, diet, passive smoke inhalation, skin protection).
  - Determine height, weight, head circumference, medical status, and developmental milestones.
  - For a youth, elicit information about nutrition, physical activity, drug use, sexual/social/peer activities, emotional concerns, communication with parents.
  - In adults, elicit information about lifestyle patterns, psychological, social, and physical functioning, symptoms of any illness, and situational factors affecting mood.
  - In seniors, elicit information about past illness, lifestyle factors, mental function, drug use, physical and social activity, emotional concerns, social relations and support systems.
- Interpret critical clinical and laboratory findings which were key in the processes of exclusion, differentiation, and diagnosis:
  - Select investigation specific to age and gender concerns.
- Conduct an effective plan of management for a patient who is well and without disease, well and with disease, not well and with disease, not well and without disease:
  - Communicate regarding disease and accident prevention; encourage patient control over health.
  - Outline interventions that would reduce risk for an existing condition detected.
  - For a frequently encountered risk factor (e.g. colon cancer), outline interventions that would reduce the risk for the condition.
  - Remember when considering major interventions that it is difficult to make an asymptomatic patient feel better.

### 077A Newborn Assessment/Nutrition

#### Overview

Primary care clinicians, paediatricians and obstetricians play vital roles in identifying children at risk for developmental disabilities. Parents require direction and reassurance regarding the health status of their newborn infant. In most cases, parental concerns regarding the child's language development, articulation, fine motor skills, and global development are likely to be associated with true developmental delays. Parental concerns with personal-social skills are associated with developmental delays in some cases.

#### Causes

##### 1) Developmental surveillance

##### 2) Nutrition (breastfeeding, bottlefeeding, solid foods)

##### 3) Well-newborn care

#### Key Objectives

- Determine development through ongoing monitoring because new circumstances may interfere (e.g. medical illness, family disruption) or because, as children develop, new categories of skills are gained (e.g. language delays cannot be detected before 18–24 months).
- Provide anticipatory guidance to parents in order to prevent unnecessary demands from healthcare providers.

#### General/Specific Objectives

- Through efficient, focused, data gathering:
  - Elicit history of parental concerns regarding the child's development, risk factors for developmental delays, and attainment of developmental milestones.
  - Perform examination of head circumference, congenital anomalies or dysmorphic features, skin lesions (e.g. *café-au-lait* spots, ash leaf macules, 'port-wine' naevi), muscle tone, hearing, vision, and developmental screening tests.

- Conduct an effective plan of management for the newborn:
  - Counsel parents regarding breastfeeding (maternal drug use during lactation, maternal nutrition and rest, breastfeeding technique, feeding frequency and intake), bottlefeeding technique, frequency and intake, formula types, and introduction of solid food, vitamin requirements and the indications for dietary supplements; discuss contraindications to breastfeeding.
  - Determine the measurements appropriate for normal infant growth and development.
  - Counsel parents about skin care, fontanelles, eye colour, strabismus, teeth, umbilicus, genitalia, urination and defaecation.

## **077 Periodic Health Examination / Growth and Development**

### **077B Infant and Child Immunisation**

#### **Overview**

Immunisation has reduced or eradicated many infectious diseases and has improved overall world health. Recommended immunisation schedules are constantly updated as new vaccines become available.

#### **Causes to be Prevented**

- 1) Poliomyelitis**
- 2) Diphtheria-Tetanus-Pertussis**
- 3) Measles-Mumps-Rubella**
- 4) Hepatitis B**
- 5) Chicken pox**
- 6) Pneumococcal pneumonia**
- 7) Meningococcal meningitis**
- 8) Influenza**

#### **Key Objectives**

- Discuss the population health benefits of immunisation programmes.
- State that a lapse in immunisation schedule does not require re-instituting the initial series, merely correcting the lapse at the next visit.
- Communicate to patients and parents about vaccine benefits and risks.

#### **General/Specific Objectives**

- Through efficient, focused data gathering:
  - Obtain an immunisation history on all children and determine whether the child (or family member) is immunosuppressed or is receiving immunosuppressive drugs.
  - Determine whether the child has had splenectomy (also congenital or functional in sickle cell disease).

- Interpret critical clinical and laboratory findings which were key in the processes of exclusion, differentiation, and diagnosis:
  - Test immune status of susceptible children.
- Conduct an effective plan of management which will:
  - Discuss misconceptions about immunisation contraindications and actual contraindications.
  - List possible complications of immunisation.
  - Discuss immunisation of immuno-compromised children (e.g. with asplenia, chronic diseases or seizures).

### **077C Preoperative Assessment**

#### **Overview**

Accurate and thorough evaluation of patients prior to surgery will maximise the chance of successful outcome. The objectives of such an evaluation include the determination of risk of the intended procedure to the patient and what measures may be required to minimise such risks. Pivotal in the process is counselling of the patient (and where appropriate, family members) with appropriate explanation of the procedure, its benefits and its risks.

#### **Considerations in Preoperative Assessment**

- 1) Understanding of the procedures – potential risks, complications and side-effects**
  
- 2) Preoperative assessment of risk factors and comorbidities**
  - a) Optimal care of recognised diseases / risk factors
  - b) Identification of unrecognised diseases / risk factors
  - c) Identification/Management of potential complications
    - Anaesthetic/Postoperative risk
      - Myocardial dysfunction
      - Autonomic neuropathy (e.g. diabetes mellitus)
      - Pulmonary risk (upper abdominal/thoracic surgery, duration greater than three hours, smoking and/or chronic obstructive lung disease,  $P_aCO_2$  greater than 45 mm Hg, obesity, etc.)
      - Drugs (e.g. anticoagulants, analgesics, psychotropics)
    - Exercise capacity
    - Other

#### **Key Objectives**

- Identify factors likely to influence peri-operative and postoperative morbidity and mortality.
- Identify measures required to reduce morbidity and mortality of surgery.
- Communicate to the patient and the preoperative team the level of risk for the proposed surgery compared to average risk for the procedure rather than 'clearing' or 'not clearing' patients for surgery.

## **General/Specific Objectives**

- Through efficient, focused data gathering; identify potential risks from history-taking, examination and preoperative investigations:
  - Elicit evidence of feeling unwell, serious past illnesses and any medications in previous three months.
  - Elicit evidence of dyspnoea, cough, wheeze, chest pain on exertion, ankle oedema.
  - Obtain history of allergies, previous anaesthetics, problems with anaesthetics (including in family); and in women, their last menstrual period.
  - Note history of previous surgery, bleeding tendency, aspirin, nonsteroidal anti-inflammatory drugs (NSAIDs) or anticoagulant medication, or previous transfusions.
- Interpret critical clinical and laboratory findings which were key in the processes of exclusion, differentiation, and diagnosis:
  - Select and interpret preoperative laboratory investigations based on known or clinically suspected diseases or risk factors (e.g. cardiac or pulmonary disease, diuretic use, diabetes, hypertension) or the age and sex of the patient.
  - Identify patient-related and procedure-related risk factors.
  - Grade surgical and anaesthetic risk according to the American Society of Anaesthesiologists (ASA) classification.
- Conduct an effective plan of management for a patient with illnesses or risk factors:
  - Recommend smoking cessation eight weeks preoperatively in smokers.
  - Explain why 'routine' preoperative investigations are not indicated.
  - Discuss postoperative pain control including various analgesics, epidural analgesia, and intercostal nerve block in patients at risk for pulmonary complications.

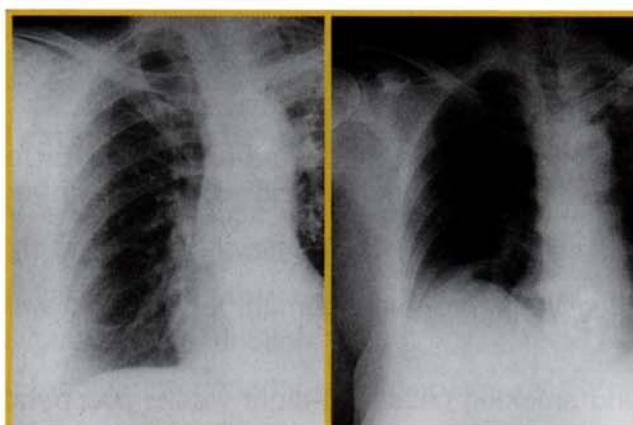
### 077D Postoperative Patient Evaluation and Care

#### Overview

Wound care is required after any surgical procedure and any complications of the healing process need early diagnosis and management. General observational and nursing care of the surgical patient is equally important. Optimal patient care and regular systems review can avert potential complications or detect and reverse them at an early stage.

#### Causes of Potential Postoperative General Complications

- 1) Wound – delayed wound healing associated with haematoma/seroma, infection, dehiscence; incisional hernia**



Atelectasis – preoperative and postoperative films

- 2) Airway/Breathing/Chest – atelectasis, aspiration, pneumonia, postoperative respiratory failure, pulmonary embolism**

- 3) Circulation**

- a) Haemorrhage**

- Wound – primary, reactionary, secondary; overt or concealed
- Gastrointestinal haemorrhage – stress ulcer syndrome

- b) Shock – haemorrhagic, cardiogenic, obstructive/embolic, septic**

- c) Cardiac – arrhythmias/arrest, myocardial infarction (MI), cardiac failure**

- 4) Gastrointestinal – postanaesthetic nausea/vomiting, disturbed bowel function, bowel obstruction, gastrointestinal haemorrhage, jaundice, parotitis**

- 5) Urinary – retention, infection, acute renal failure (ARF)**

- 6) Integument and vascular access – thrombophlebitis, extravasation of intravenous solutions, pneumothorax (central cannulation), incompatible blood transfusion, diathermy burn, pressure sore**
- 7) Cerebral – delirium: hypoxia; drugs/intoxication/withdrawal; sleep loss / disorientation; metabolic disturbance; sepsis**
- 8) Fever – atelectasis; focal or systemic sepsis; thrombophlebitis; deep venous thrombosis (DVT) and thromboembolism; tissue necrosis / gout / MI; incompatible blood transfusion; drug allergy**

### **Key Objectives**

- Optimally monitor postoperative course by regular wound assay, observation of vital signs, focused systems review and followup.
- Encourage early return of preoperative functions.
- Achieve early detection and treatment of complications.

### **General/Specific Objectives**

- Through efficient, focused data collection, including investigations where appropriate:
  - Monitor early postoperative progress, supervise and maintain uncomplicated postoperative progress.
  - Check for adequate pain relief; and that vital signs are normal from nursing observations. Check wound status and fluid balance; intravenous drip sites and urethral catheter care if present; assess chest, abdomen, legs for DVT, circulation and temperature at regular intervals.
  - Anticipate postoperative pharmaceutical requirements, followup by surgeon, and by patient's own family doctor to co-ordinate overall patient care.
  - Liaise with other health workers including ward and district nursing staff, paramedical care including: physiotherapy, occupational therapy, speech pathology, social worker and community service workers as required.
  - Communicate with family members, other relatives and friends as appropriate.
  - Communicate with patient's doctor verbally and arrange early transmission of summary of admission, operative and postoperative details.
  - Communicate accurately, empathically and at an appropriate level with patient during early convalescence and prior to discharge and answer any continuing concerns.

### **077E Work-Related Health Issues**

#### **Overview**

Doctors will encounter health hazards in their own work place, as well as in the work place of their patients. These hazards need to be recognised and addressed.

#### **Causes**

##### **1) Disability management and work fitness**

##### **2) Public health and surveillance**

- a) Hazard recognition, evaluation, and control
- b) Occupational and environmental injury/illness
- c) Underlying medical condition and environment

##### **3) Clinical preventive services**

#### **Key Objective**

- Determine whether the work place or environmental conditions are potentially hazardous, the impact on the health of the workers, and recommend preventive strategies.

#### **General/Specific Objectives**

- Through efficient, focused data gathering:
  - Elicit history of patient's occupation and possible exposure to toxic or hazardous environments and identify potential relationship to patient presentation.
- Interpret critical clinical and laboratory findings which were key in the processes of exclusion, differentiation, and diagnosis.
- Conduct an effective plan of management for a patient with work-related health issues:
  - Select patients in need of specialised care and provide followup care.
  - Counsel patients about safety issues and report findings to affected patients as well as employers (considering medical confidentiality issues).

- Gain an understanding of Australian WorkCover law:
  - Legal obligations of employers:
    - \* To provide a safe workplace.
    - \* To indemnify employees against work-related injury.
  - The process of completing and submitting an Australian WorkCover form when treating patients with work-related injury or illness.
  - The limits of the indemnity cover provided by WorkCover law in Australia.

### **077F Health of Special Populations**

#### **Overview**

The health of groups frequently reflects the influences of health determinants such as the ones considered in #077G Population and #077H Environment. The conditions resulting from these adverse factors do not differ from those considered under the numbered clinical presentations indicated, but are here re-considered in order to alert learners to the most common conditions to be considered in these respective groups.

#### **Causal Conditions to be Considered in Individual Population Groups**

##### **1) The health of indigenous aboriginal peoples**

- a) Trauma / Poisoning / Sudden infant death syndrome (SIDS) / Acute life-threatening event (ALTE)**  
(see #079 Poisoning, #099 Sudden Infant Death Syndrome (SIDS), (Acute Life-Threatening Event (ALTE)), #107 Substance Abuse/Addiction, #108 Suicidal Behaviour/Prevention, #113 Trauma/Accidents/Prevention)
- b) Circulatory diseases (including rheumatic fever)**  
(see #020 Chest Discomfort, #032 Dyspnoea and/or Cough / Prevention of Cancers and Chronic Respiratory Diseases, #054 Hypertension, #067 Murmur / Extra Heart Sounds)
- c) Neoplasms**  
(see #016 Bleeding with Defaecation / Acute Lower Gastrointestinal Bleeding / Melaena / Occult Blood in Stool / Prevention of Cancer, #048 Haematemesis / Melaena, #049 Haematuria, #051 Haemoptysis, #070 Pain, #125 Weight Loss / Eating Disorders / Anorexia / Nutritional Disorders)
- d) Diseases of respiratory system**  
(see #032 Dyspnoea and/or Cough / Prevention of Cancers and Chronic Respiratory Diseases, #126 Wheezing / Respiratory Difficulty / Stridor)
- e) Infection (gastroenteritis, otitis media, infectious hepatitis)**  
(see #027 Diarrhoea/Constipation, #033 Ear Pain, #040 Fever and Chills (Adult and Paediatric), #058 Jaundice)
- f) Diabetes**  
(see #053 Hyperglycaemia / Diabetes Mellitus)
- g) Skin disorder**  
(see #101 Skin Blisters – Boils – Comedones – Ulcers, #101A Chronic Leg Ulcer)

## **2) The health of seniors**

### **a) Musculoskeletal (including falls and injuries)**

(see #037 Falls, #059 Joint Pain, Mon-Articular (Acute, Chronic), #060 Joint Pain, Poly-Articular (Acute, Chronic), #089 Regional Pain)

### **b) Hypertension/Heart diseases**

(see #020 Chest Discomfort, #032 Dyspnoea and/or Cough / Prevention of Cancers and Chronic Respiratory Diseases, #054 Hypertension, #067 Murmur / Extra Heart Sounds)

### **c) Respiratory diseases**

(see #032 Dyspnoea and/or Cough / Prevention of Cancers and Chronic Respiratory Diseases, #126 Wheezing / Respiratory Difficulty / Stridor)

### **d) Dementia**

(see #024 Dementia / Memory Disturbances)

## **3) The health of children in poverty (single mothers, immigrants)**

### **a) Low birth weight**

(see #123 Weight (Low) at Birth / Intra-uterine Growth Aberration)

### **b) Trauma / Poisoning**

(see #079 Poisoning, #113 Trauma/Accidents/Prevention)

### **c) Mouth problems**

(see #066 Mouth Problems)

### **d) Fever / Infectious diseases**

(see #040 Fever and Chills (Adult and Paediatric), #058 Jaundice)

### **e) Psychiatric problems**

(see #065 Mood Disorders, #073 Panic and Anxiety, #078 Personality Disorders, #107 Substance Abuse/Addiction, #108 Suicidal Behaviour/Prevention, #119 Violence/Aggression and Mental Illness, #125 Weight Loss / Eating Disorders / Anorexia / Nutritional Disorders)

## **4) The health of people with disabilities**

### **Key Objective**

- When providing a periodic health examination to a person belonging to one of the above groups, evaluate conditions common to the group and determine whether evidence exists that the individual has such a condition.

# **077 Periodic Health Examination / Growth and Development**

## **077G Population**

### **Overview**

Some people are healthy while others are not, for reasons other than biology, genetic endowment, and the physical environment. The social environment exerts a profound influence on health, and social stimuli may exert a profound effect on physical responses.

### **Causal Determinants of Health**

- 1) Income and social status**
- 2) Social support network**
- 3) Education**
- 4) Personal health practices and coping skills**
- 5) Healthy child development**
- 6) Health services (access and barriers to access)**
- 7) Employment and working conditions**

(see #077E Work-Related Health Issues)

- 8) Physical environment**

(see #077H Environment)

- 9) Biology and genetic endowment**

### **Key Objectives**

- Discuss the three levels of disease prevention (primary, secondary, and tertiary) and strategies for health promotion (e.g. education, communication/behaviour change, social marketing, healthy public policy, community development and organisation, community-wide prevention, and diffusion of innovations).
- Explain that factors such as geographic location, gender, and ethnic origin influence some of the determinants of health, but health status is in turn influenced by differential allocation and distribution of health service resources.

## **General/Specific Objectives**

- Through efficient, focused, data gathering:
  - Identify needs of population with survey information and other sources in order to select interventions or management strategies for clinical presentations (e.g. education about seat belts, education about herbal medications since some weight reduction herbal medications can cause chronic renal failure).
  - Elicit history concerning occupation, education, level or absence of control, cultural issues, etc. that may have had an impact on presenting condition.
- Interpret critical clinical and laboratory findings which were key in the processes of exclusion, differentiation, and diagnosis.
- Conduct an effective plan of management for patients with conditions related to determinants of health:
  - Select population issues better managed by means of health promotion rather than traditional medical interventions.

## **077H Environment**

### **Overview**

Environmental issues are important in medical practice because exposures may be causally linked to a patient's clinical presentation, or a patient's reported environmental exposure may necessitate interventions to prevent future illness. Clinician involvement is important in the promotion of global environmental health.

### **Exposures to Causal Environmental Pollutants**

#### **1) Air pollutants**

##### **a) Biological**

- Pollen
- Home exposures (dust mites, cockroaches, etc.)

##### **b) Chemicals**

- Lead
- Fossil fuel related (e.g. CO, SO<sub>2</sub>)
- Indoor air pollutants (e.g. formaldehyde)
- Secondhand tobacco smoke

##### **c) Physical (energy transfer)**

- Radiation (e.g. ultraviolet (UV) from ozone layer destruction by chlorofluorocarbons)
- Electricity

#### **2) Water pollutants (drinking/recreational water)**

##### **a) Bacterial**

##### **b) Chemical/Industrial**

#### **3) Soil pollutants (chemical/industrial)**

#### **4) Food pollutants**

##### **a) Biological (toxins/bacteria)**

##### **b) Chemical**

- Drugs (antibiotics, hormones)
- Food preservatives
- Pesticides

## **Key Objectives**

- Describe clinical presentations caused or aggravated by environmental exposures that are virtually indistinguishable from ones caused by other conditions (e.g. headache from carbon monoxide poisoning is similar to tension headache or migraine; asthma).
- In patients whose immediate (e.g. allergic reaction), subacute (e.g. asthma), or delayed (e.g. pneumoconiosis) presentation may be linked to environmental exposure, elicit an environmental history and identify potential sources of problems.

## **General/Specific Objectives**

- Through efficient, focused, data gathering:
  - Determine whether symptoms are worse at home, work, or at leisure activities, on weekends or work days and are related to recent or past exposures (e.g. fumes, dusts, chemicals, radiation).
  - Determine whether an illness is occurring in an unexpected person (e.g. lung cancer in a non-smoker) or whether symptoms have developed without a clear aetiology.
  - Determine presence of nearby industrial plants, commercial businesses, or dump sites.
  - Determine home insulation, heating and cooling systems, cleaning agents, pesticide use, water supply, water leaks, recent renovations, air pollution, hobbies, hazardous waste contamination, spills, or other exposures.
- Interpret critical clinical and laboratory findings which were key in the processes of exclusion, differentiation, and diagnosis:
  - Select and consult labels or Material Safety Data Sheets (MSDS), poison control centres, consultants, agencies, and other references for information.
  - Select consultants (environmental medicine specialists, toxicologists, governmental agencies, industrial hygienists, etc.) for the purpose of documenting and quantifying exposure.
  - Select laboratory tests for the patient to establish exposure or select investigations to establish the presence of adverse health effects on target organs (e.g. blood lead levels to assess exposure to lead and serum creatinine to look for effects on kidney function).
- Conduct an effective plan of management for a patient with possible environmental exposure:
  - If evidence supports, or a strong suspicion exists, for a causal connection between exposure and the clinical presentation, notify the appropriate authorities to inspect the site and thereafter to decrease or eliminate exposure.

### Overview

Personality disorders are deeply ingrained, inflexible and persistent maladaptive behaviours, which have been present since adolescence. These enduring patterns of behaviour exhibited over a wide variety of social, occupational and relationship contexts have adverse effects on the individual and on society. Abnormal personalities predispose to anxiety, mood disorders and alcohol and substance abuse, although they may co-exist with positive and favourable traits. Abnormal personalities occur in about five percent of the general population and thus need to be recognised by clinicians.

### Causes

- 1) 'Odd' personality (paranoid, schizoid, schizotypal)**
- 2) 'Dramatic' personalities (borderline, histrionic, narcissistic)**
- 3) 'Anxious' personalities (dependent, avoidant, obsessive-compulsive)**
- 4) Antisocial personality disorder**
- 5) Others (passive-aggressive, explosive)**
- 6) Mixed patterns**

### Key Objective

- Determine whether the pattern of behaviour exhibited is enduring and exhibited over a wide variety of social and personality contexts leading to impairment in social and occupational functioning.

### General/Specific Objectives

- Through efficient, focused data gathering:
  - Determine whether the patient is excessively suspicious or jealous, isolative, aloof or emotionally cool with little need for personal relationships, or has eccentric ideas or disturbances in thinking and communication.
  - Determine whether there is excessive sensitivity or depression, perfectionism and inflexibility, shyness and withdrawal, or excessive dependence on others.
  - Elicit history of lying, truancy, fights, thefts, cruelty, arson, substance or illegal activity before the age of 15 years; along with a pattern of manipulation and exploitation of others; impulsivity; a lack of empathy or remorse; and instability of mood or affect.
  - Determine whether there is excessively dramatic, flamboyant attention-seeking, excitable, grandiose and emotional behaviour.

- Develop an effective management plan for a patient with a personality disorder:
  - Outline differences between supportive therapy; insight-oriented therapy; cognitive and behavioural therapy; family or couple therapy and group therapy.
  - Identify patients who will need drug and alcohol counselling.
  - Identify patients who will benefit from treatment for anxiety or mood disorders.
  - Select and refer patients who will benefit from specialised assessment and care.