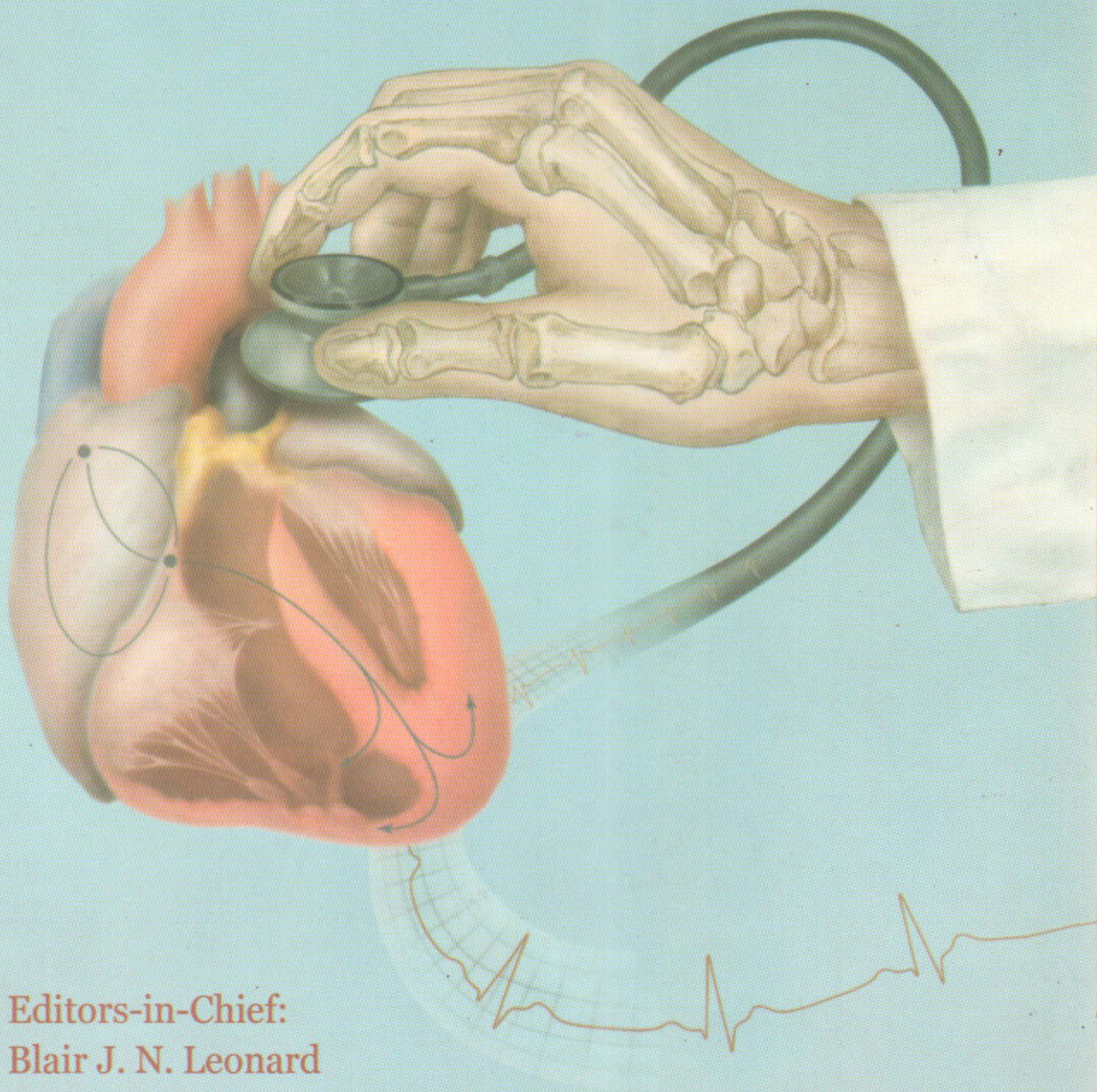


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Editors-in-Chief:
Blair J. N. Leonard
Jonathan C. Yeung

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للکتب (کوردی ، عربی ، فارسی)

Perry Choi, Atlas Editor
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Third Edition

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The editors of this edition have taken every effort to ensure that the information contained herein is accurate and conforms to the standards accepted at the time of publication. However, due to the constantly changing nature of the medical sciences and the possibility of human error, the reader is encouraged to exercise individual clinical judgement and consult with other sources of information that may become available with continuing research.

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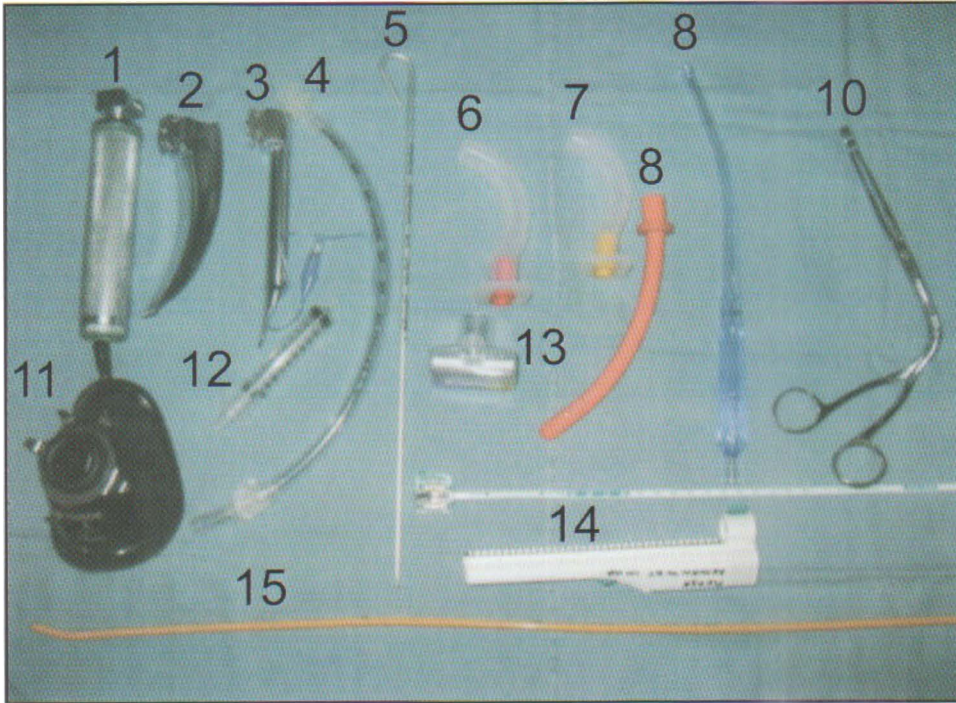
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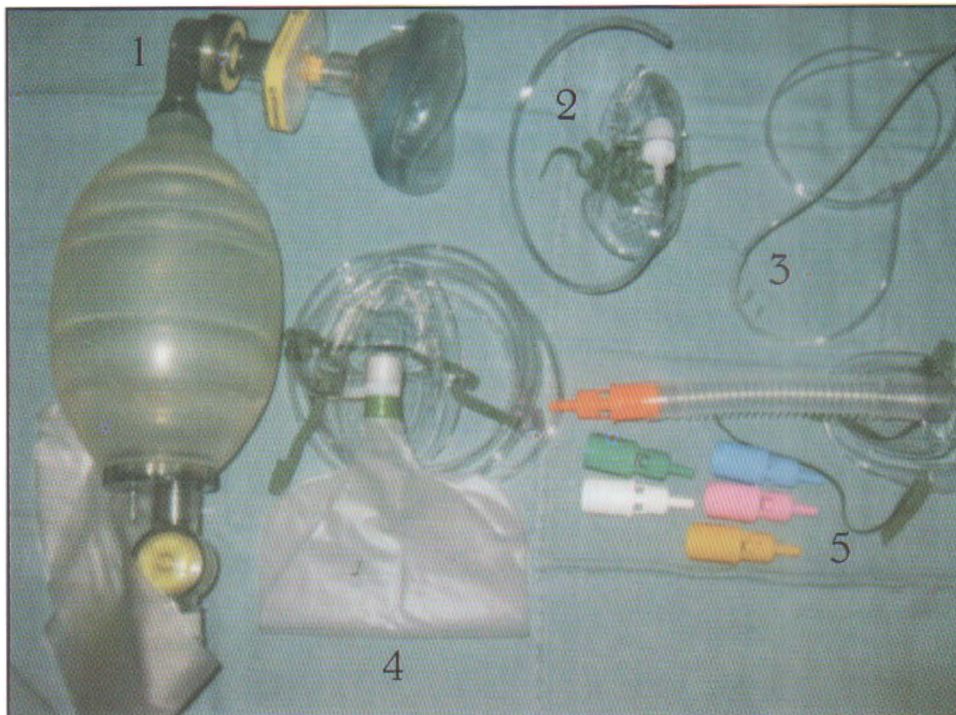
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Anesthesia



A1. Intubation Equipment

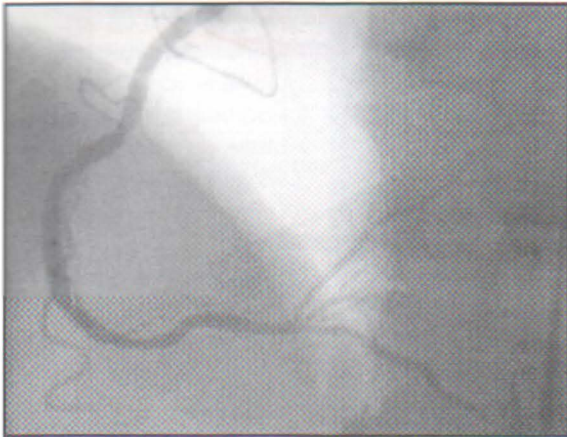
1. Laryngoscope handle
2. Macintosh III laryngoscope blade
3. Miller laryngoscope blade
4. Cuffed endotracheal tube
5. Stylet
6. Large oral airway
7. Small oral airway
8. Nasal airway
9. Yanker suction tip
10. McGill forceps
11. Face mask
12. Syringe
13. Carbon dioxide detector
14. Tracheal light
15. Bougie



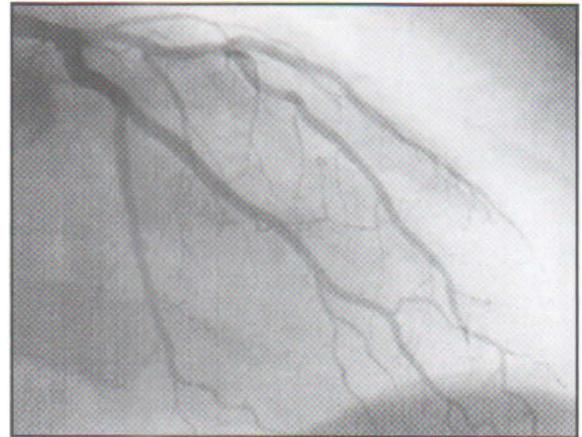
A2. Oxygen Masks

1. Ambu-bag (Laerdal resuscitator)
2. Simple face mask
3. Nasal prongs
4. Non-rebreather mask
5. Venturi mask with oxygen ports

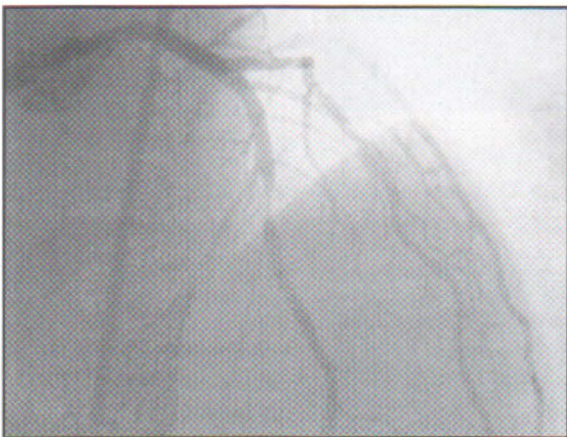
Cardiac and Vascular Surgery



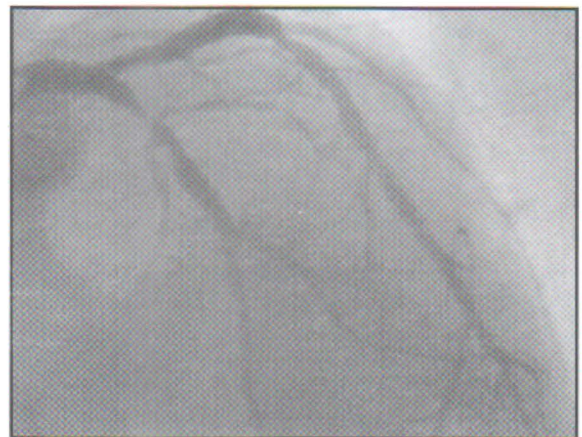
C1. Normal right coronary artery (RCA) with posterior interventricular (PIV) artery running inferiorly, and the posterior lateral branches branching superiorly in this view.
(Courtesy Toronto General Hospital Catheterization Laboratory)



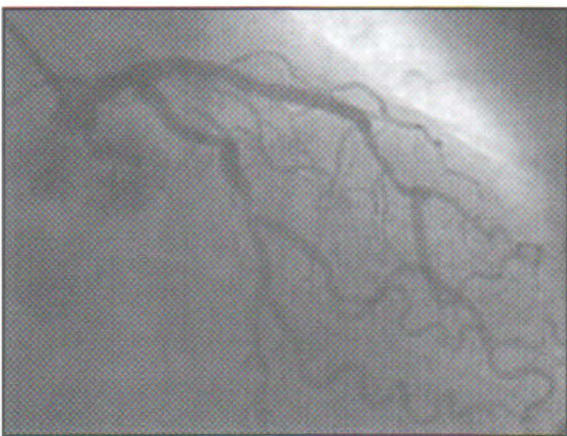
C2. Normal left coronary artery (LCA) with the circumflex system inferior to the left anterior descending (LAD) artery in this view.
(Courtesy Toronto General Hospital Catheterization Laboratory)



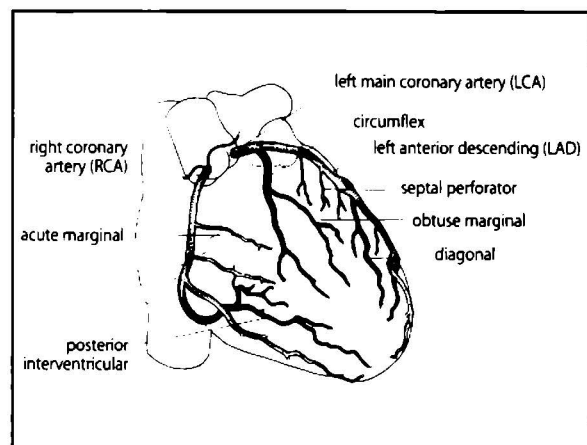
C3. LAD with 95% stenotic lesion distal to diagonal branches.
(Courtesy Toronto General Hospital Catheterization Laboratory)



C4. Stenosis of the LAD, as well as the Circumflex.



C5. This patient had two stents installed in this LAD, which you can see as cylindrical shapes within the vessel.



C6.

Dermatology



D1. Stasis Dermatitis
Erythematous scaling patches on lower legs. May see hyperpigmentation, swelling, and ulceration.
(Courtesy Dr. L. From)



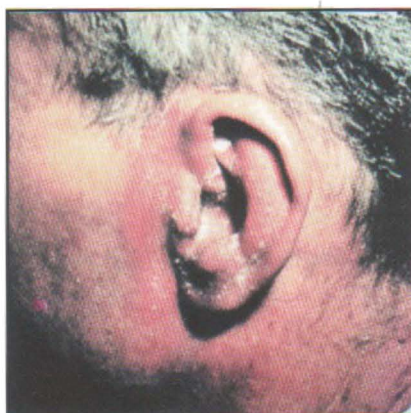
D2. Contact Dermatitis
Sharply demarcated, weeping and crusting papules and vesicles.



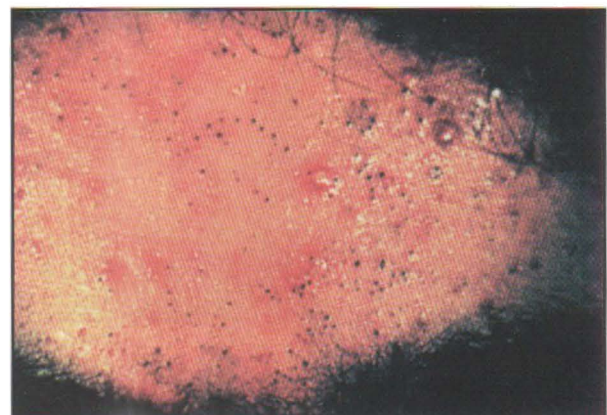
D3. Atopic Dermatitis
Excoriated, lichenified plaques with erythema, dryness, and crusting.



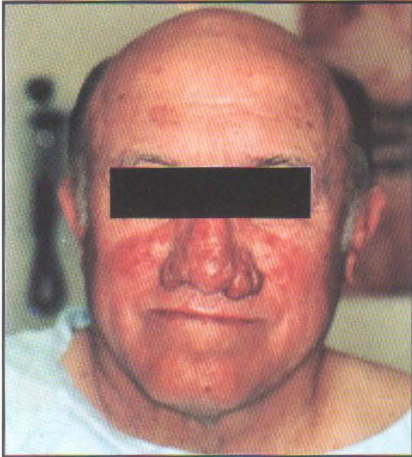
D4. Adult Atopic Dermatitis
(Courtesy Dr. S. Walsh)



D5. Seborrheic Dermatitis
Diffuse within scalp margin, greasy yellow-white scales and underlying erythema.



D6. Acne Vulgaris
Inflammatory papules, pustules, and open comedones.

**D7. Acne Rosacea**

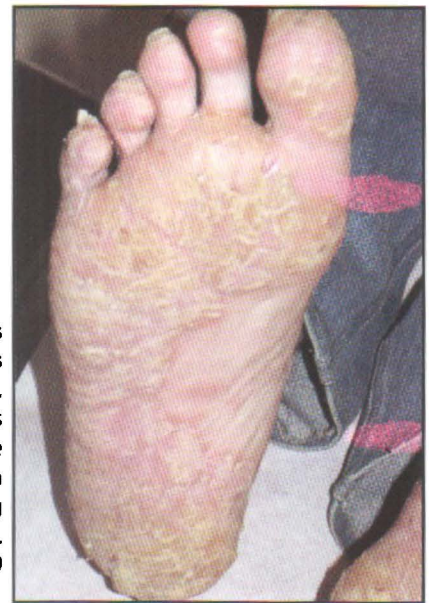
Prominent facial erythema, telangiectasia, rhinophyma, and scattered papules. (Courtesy Dr. L. From)

**D8. Psoriasis**

Dry, well-circumscribed, silvery scaling papules and plaques. (Courtesy Dr. L. From)

**D9. Chronic Plaque Psoriasis**

Dry, well-circumscribed, silvery scaling papules and plaques. (Courtesy Dr. S. Walsh)

**D10. Psoriasis Vulgaris of Soles**

Well-demarcated, erythematous plaques with thick, yellowish scale and desquamation on sites of pressure arising on the plantar feet. (Courtesy Dr. S. Walsh)

**D11. Pustular Psoriasis**

Deep-seated, dusky-red macules and creamy-yellow pustules progress to hyperkeratotic/crusted papules. Lesions are confined to the palms and /or soles. (Courtesy Dr. S. Walsh)

**D12. Seborrheic Keratosis**

Well-demarcated, waxy, brownish-black or tan papules/plaques; warty and "stuck-on" appearance.



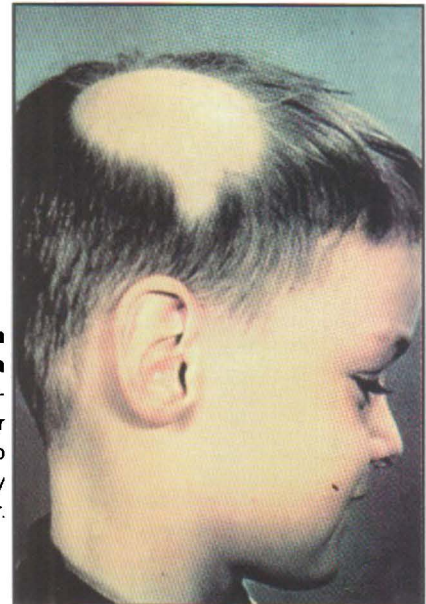
D13. Onychomycosis
Distal onycholysis, nail pitting, and subungual hyperkeratosis.



D14. Tinea Capitis
Diffuse area of mild scaling and hair loss with follicles present and occasionally erythema and pyoderma.



D15. Epidermal Cyst
Round, firm, yellow/flesh coloured, mobile nodule; may observe a follicular punctum on the overlying epidermal surface.



D16. Alopecia Areata
Sharply demarcated circular patch of scalp completely devoid of hair.



D17. Vitiligo
Typical acral distribution showing cutaneous depigmentation due to an acquired loss of melanocytes.



D18. Toxic Epidermal Necrolysis (TEN)
Widespread necrosis with painful blistering and denuding of epidermis.



D19. Erythema Nodosum
Tender, poorly demarcated, deep-seated nodules and plaques usually on lower extremities.
(Courtesy Dr. M. Mian)



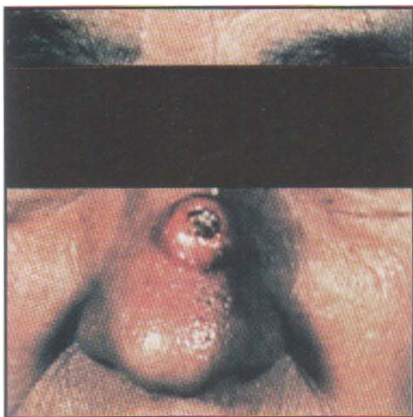
D20. Erythema Multiforme (EM)
Macules/papules with central concentric ring
(Courtesy of Women's College Hospital Slide Library, Toronto)



D21. Erythema Multiforme
(Courtesy Dr. S. Walsh)



D22. Squamous Cell Carcinoma (SCC)
Indurated erythematous nodule or plaque with hyperkeratotic surface scale/crust and ulceration.



D23. Keratoacanthoma
Benign squamous exophytic nodule with central keratin-filled crater.



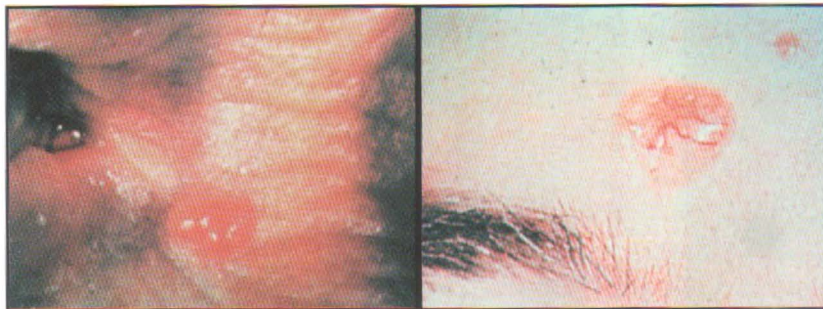
D24. Actinic Keratosis
Hyperkeratotic, erythematous, slightly elevated, flat-surfaced papules and patches on sun-exposed skin.
(Courtesy Dr. C. Forrest)



D25. Actinic Keratosis
(Courtesy Dr. S. Walsh)



D26. Kaposi's Sarcoma
Bluish-red cutaneous nodules on the lower extremity.
(Courtesy Dr. J. Murray)



D27. Basal Cell Carcinoma (BCC)
Skin-coloured papule or plaque with rolled, translucent/pearly, telangiectatic outer border.



D28. Basal Cell Carcinoma
(Courtesy Dr. S. Walsh)



D29. Benign Compound Nevus
Proliferation of nevomelanocytes characterized by hyperpigmented macules or papules of regular shape and uniform colour.



D30. Malignant Melanoma
Superficial spreading lesion characterized by asymmetrical irregular border, variegated colour, and diameter greater than 0.6 mm.

**D31. Lentigo Maligna**

Tan/brown uniformly flat macule with irregular borders
(Courtesy Dr. S. Walsh)

**D32. Lichen Planus**

Flat-topped papules with irregular, angulated borders.
Close inspection shows a lacy, reticular pattern of whitish lines (Wickham's striae).
(Courtesy Dr. S. Walsh)

**D33. Pemphigus Vulgaris**

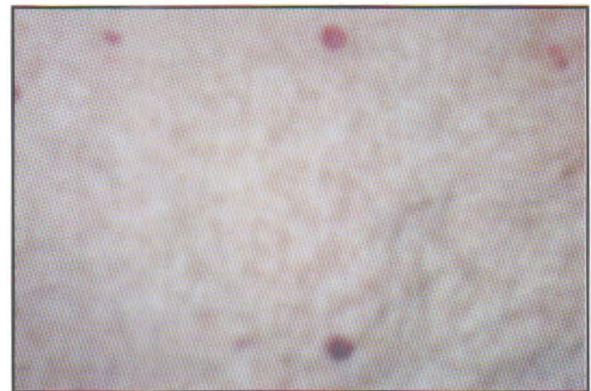
Flaccid vesicles and bullae that easily rupture; erosions and crusts.
(Courtesy Dr. S. Walsh)

**D34. Bullous Pemphigoid**

Multiple tense serous and partially hemorrhagic bullae; postinflammatory tan discoloration is present at sites of prior erythematous urticarial-type lesions.
(Courtesy Dr. S. Walsh)

**D35. Urticaria**

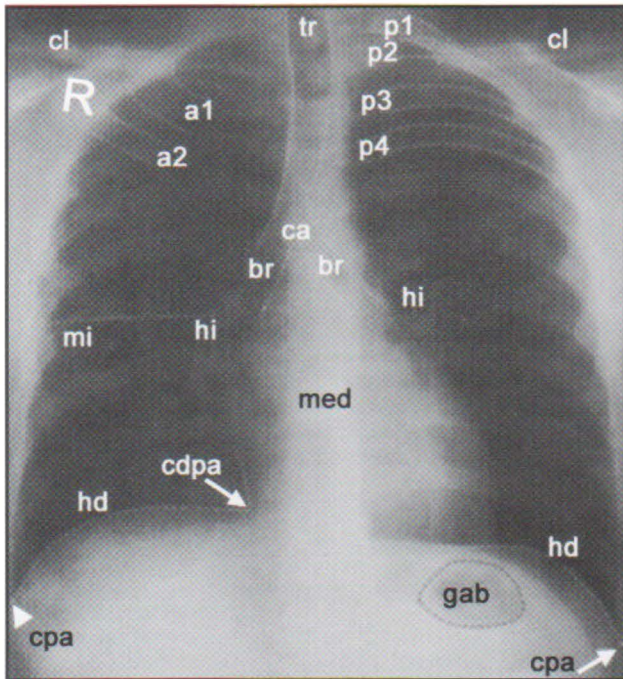
Circumscribed, raised, edematous, red plaques surrounded by a faint white halo. (Courtesy Dr. S. Walsh)

**D36. Senile Hemangioma**

Bright red, dome-shaped vascular papules with a 1-5 mm diameter.

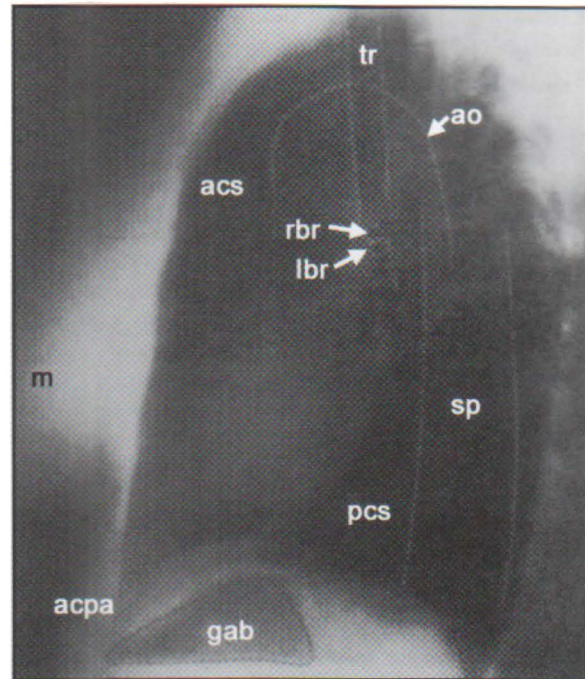
Diagnostic Medical Imaging

Approach to the Plain chest film



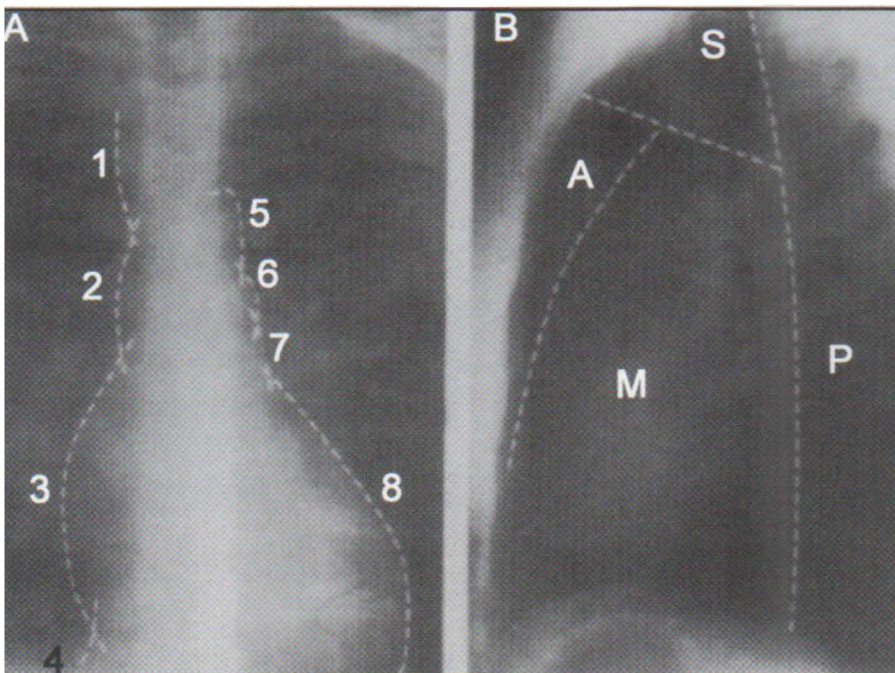
DM1. PA Film

Normal PA film of a male. Note the right and left clavicles (cl), posterior (p1-4) and anterior (a1-2) ribs, right and left costophrenic angles (cpa), right cardiophrenic angle (cdpa), right and left hemidiaphragms (hd), gastric air bubble (gab), trachea (tr), right and left mainstem bronchi (br), mediastinal shadow (med), carina (ca), and right and left hila (hi). The normal position of the minor fissure (mi) is also indicated.



DM2. Lateral Film

This is a normal lateral film of a female patient. Note the spine (sp), anterior costophrenic angle (acpa), gastric air bubble (gab), trachea (tr), left mainstem bronchus (lbr), right mainstem bronchus (rbr), aortic arch (ao), anterior/retrosternal (acs) and posterior/retrocardiac (pcs) clear spaces, and breast shadow (m).



DM3. Mediastinum

Components of the PA mediastinal shadow (A) include SVC (1), ascending aorta (2), RA (3), IVC (4), aortic arch (5), pulmonary trunk (6), LA appendage (7), and LV (8). Mediastinal compartments on the lateral film (B) include: superior (S), anterior (A), middle (M) and posterior (P) compartments.

This is a useful mnemonic to remember the proper steps in examining the chest x-ray.
"It may prove quite right, but stop and be certain how lungs appear".

Identification: date of exam, patient name, sex, age

Markers: R and/or L

Position: medial ends of clavicles should be equidistant from spinous process at midline

Quality: degree of penetration (e.g., thoracic spine should be just visible through heart), lack of motion artefact

Respiration: right hemidiaphragm at 6th anterior interspace or 10th rib posteriorly on good inspiration;
poor inspiration results in poor aeration, vascular crowding, compression and widening of central shadow

Soft tissues: neck, axillae, pectoral muscles, breasts/nipples, chest wall;

nipple markers can help identify nipples (which may mimic lung nodules), observe volume of soft tissue present

Abdomen (please see Abdominal Imaging)

Bones: C-spine, T-spine, shoulder girdle, ribs, sternum (seen best on lateral film)

Central shadow: trachea, heart, great vessels, mediastinum, spine

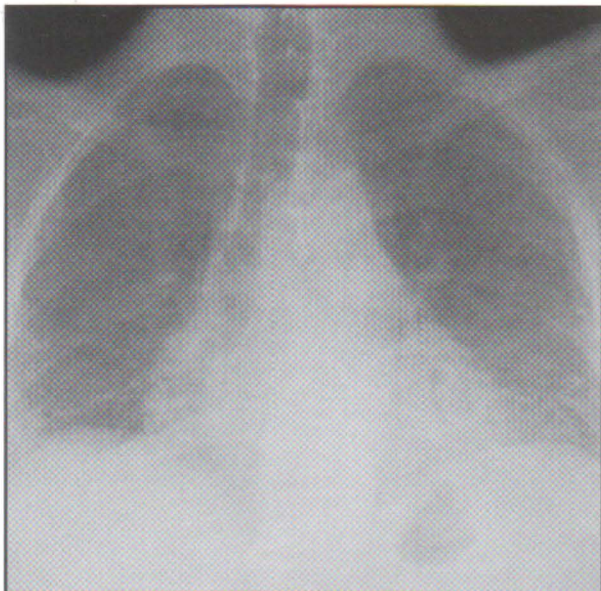
Hila: pulmonary vessels, mainstem and segmental bronchi, lymph nodes

Lungs: lung parenchyma, pleura, diaphragm

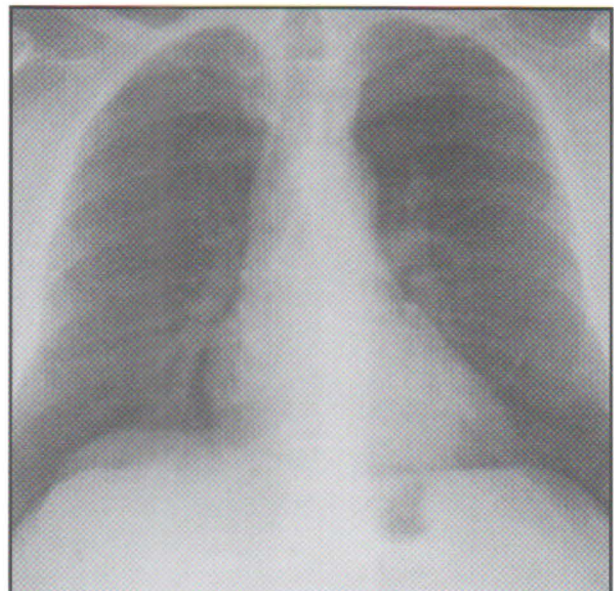
Absent structures: review the above, noting ribs, breasts, lung lobes

Respiration

On a film taken in full inspiration, the right hemidiaphragm should project over the 6th anterior interspace or 10th rib posteriorly. Films taken without a full inspiration are described as having a "poor inspiratory result". This may result from a poor inspiratory effort or any other condition that prevents full inspiration. This patient's chest x-ray is normal in full inspiration. In relative expiration, the cardiac silhouette appears enlarged and the pulmonary vasculature appears crowded and indistinct. This appearance is easily mistaken for pulmonary edema.



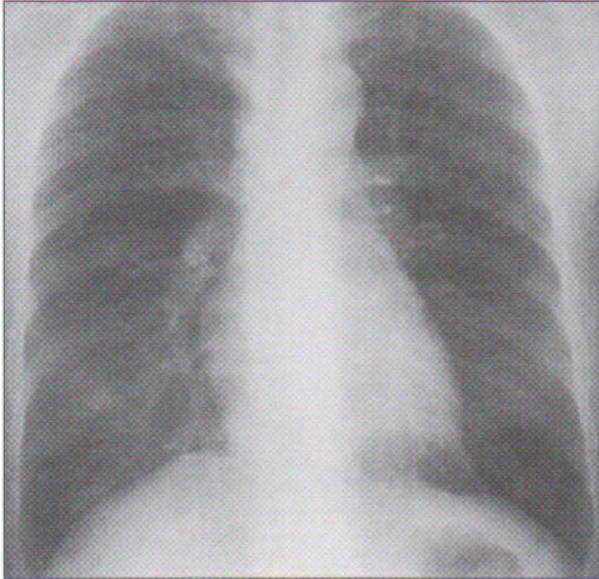
DM4. Expiration



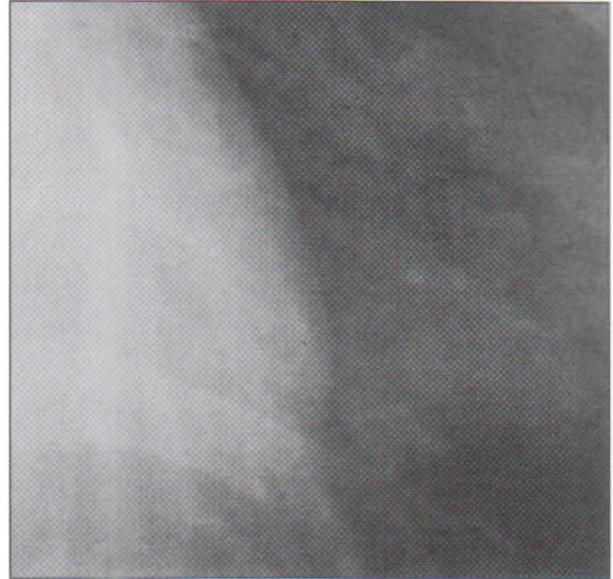
DM5. Inspiration

Soft Tissue

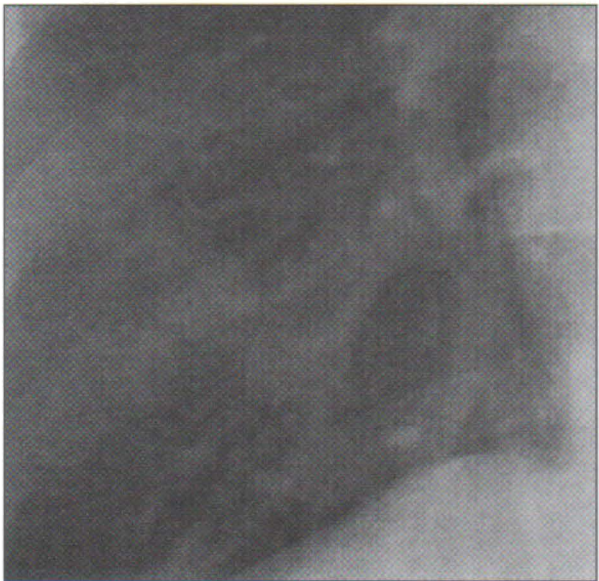
Nipple shadows can often mimic pulmonary nodules. Clues to the nipples being the source of the apparent nodules are positioning of the nodules on the lateral radiograph, bilaterality and "lesions" whose inferior and lateral borders appear sharper than their superior and medial margins. Confirmation can be obtained by repeating the study with nipple markers or obtaining a different projection.



DM6. Nipple



DM7. Nipple



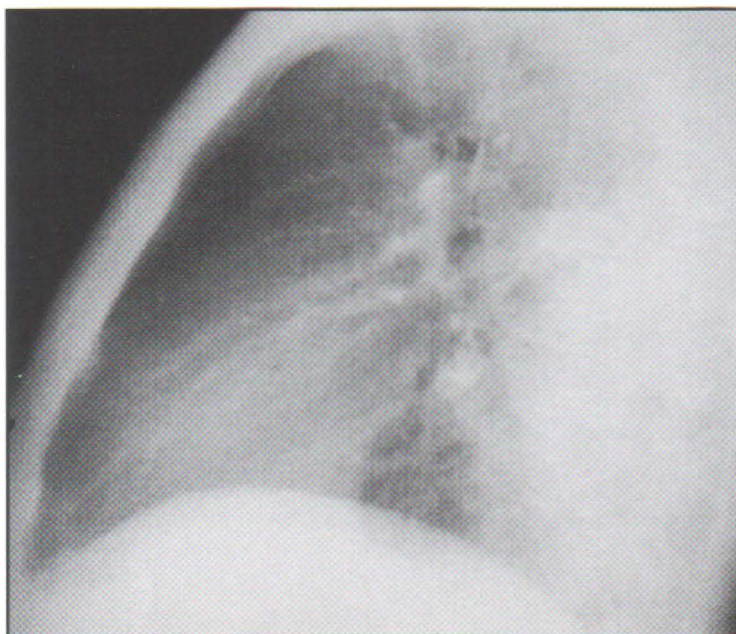
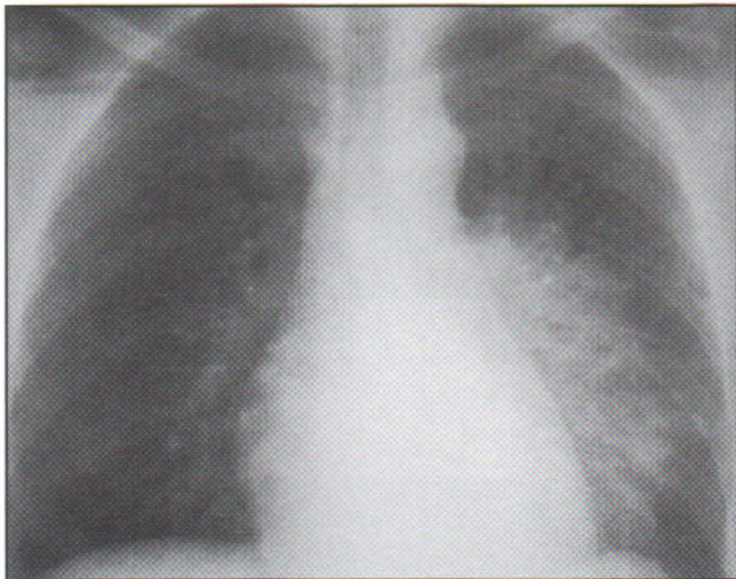
DM8. Nipple

Bone/Central Shadow

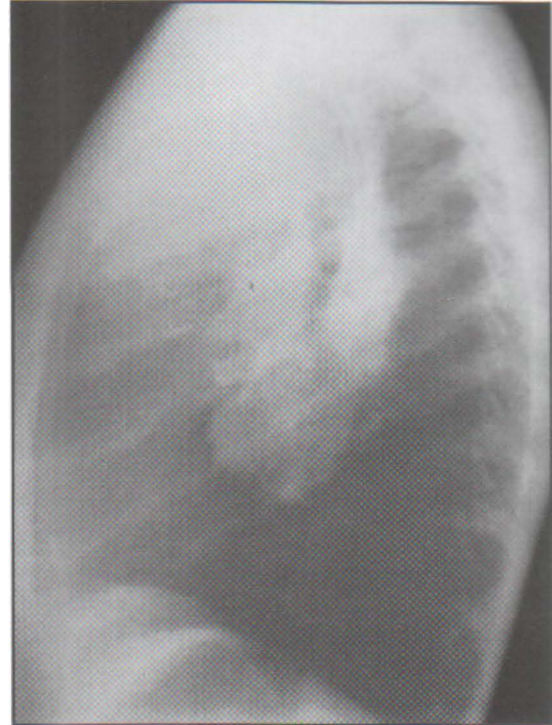
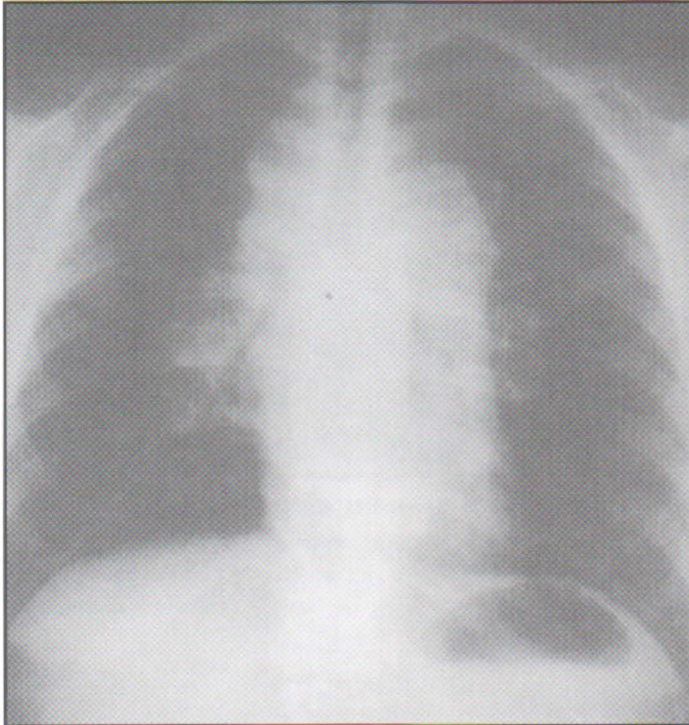
This young patient has left lower lobe pneumonia. The left hemidiaphragm is "silhouetted" by consolidation in the left lower lobe (note that one cannot see the entire left hemidiaphragm through the cardiac shadow). In a normal chest X-ray, the diaphragm and mediastinal structures are visible because of the difference in radiodensity between lung and these structures (i.e., there is an "interface" between the tissues). The silhouette sign refers to loss of normally appearing interfaces, implying opacification due to consolidation (most common), atelectasis, mass, etc., in adjacent lung.

The lateral film demonstrates the "spine sign". On a normal lateral chest X-ray, as one moves down the thoracic vertebral column, the vertebral bodies appear progressively blacker. Here they appear more radioopaque due to consolidation in the overlying left lower lobe.

DM9. Silhouette and Spine Sign

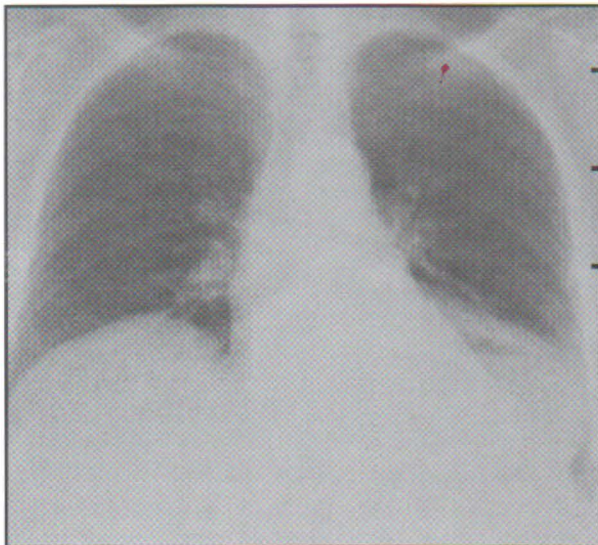


Central Shadow



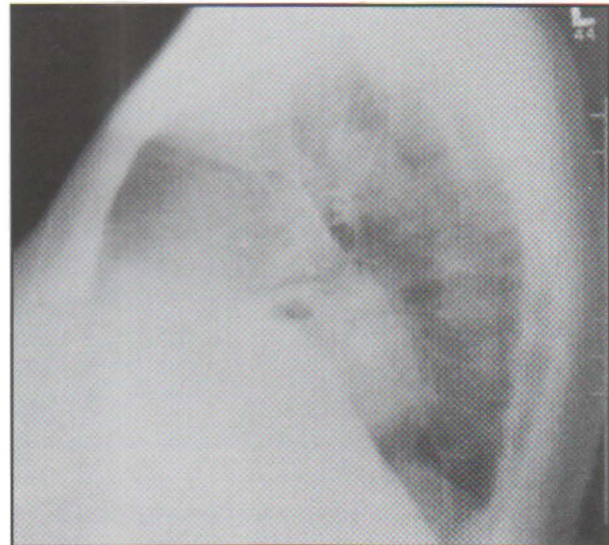
DM10. Anterior Mediastinum

There is a large mass in this patient's anterior mediastinum. In this case, the mass is accompanied by significant hilar and paratracheal lymphadenopathy. The patient is young and complains of fevers and night sweats. He was diagnosed with Hodgkin's Lymphoma.



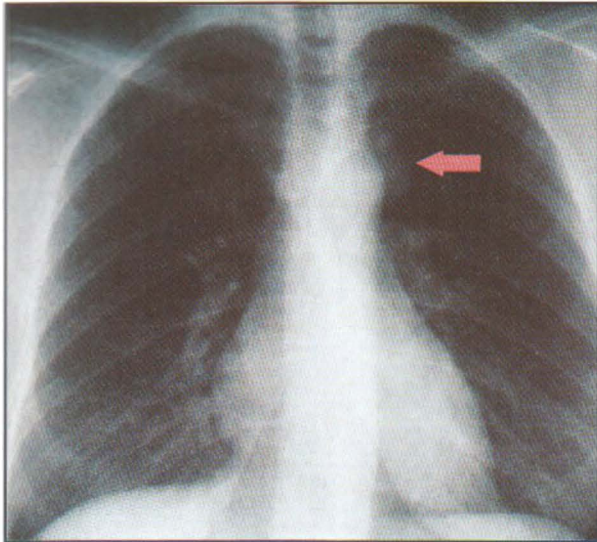
DM11. Middle Mediastinum

This patient has a large mass in the middle mediastinum.

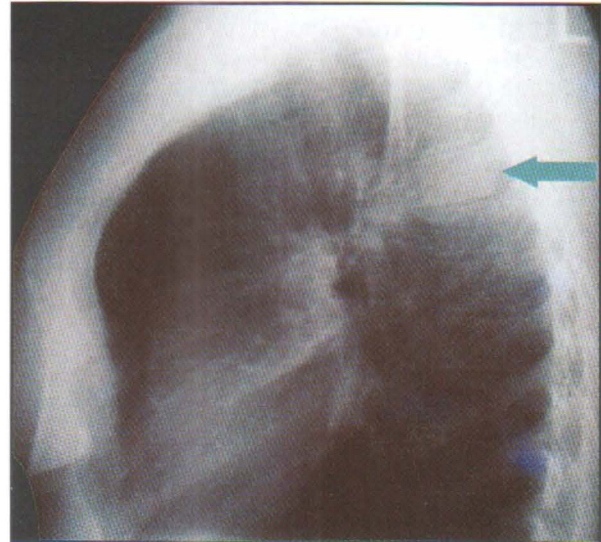
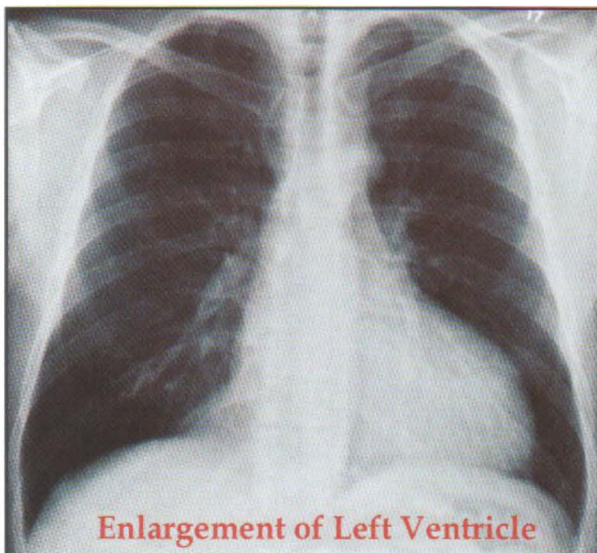


DM12. Middle Mediastinum

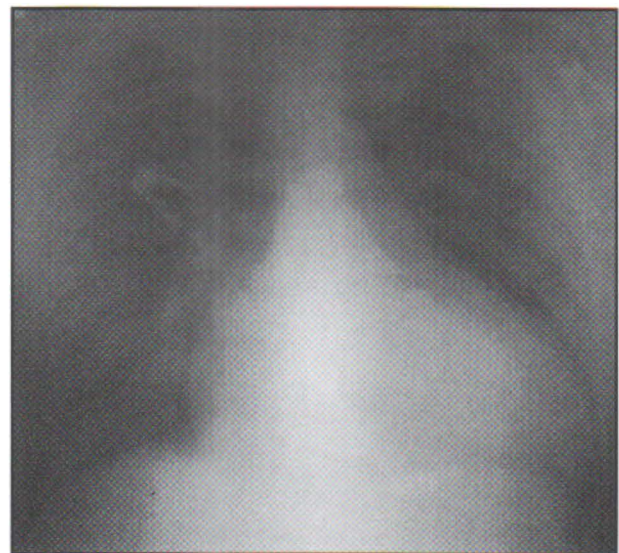
This elderly patient complained of gastroesophageal reflux symptoms. This clinical history, plus the presence of an air-fluid level within the mass suggests a hiatus hernia.

**DM13. Posterior Mediastinum**

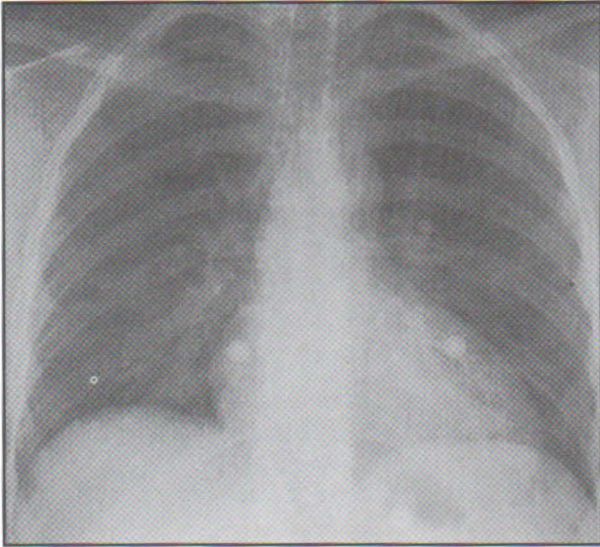
This patient has a well circumscribed mass in the posterior mediastinum. The value of the lateral view is well illustrated in this case; on the frontal radiograph there is no way to localize the lesion. This mass proved to be a neurofibroma.

**DM14. Posterior Mediastinum****DM15. LV Enlargement**

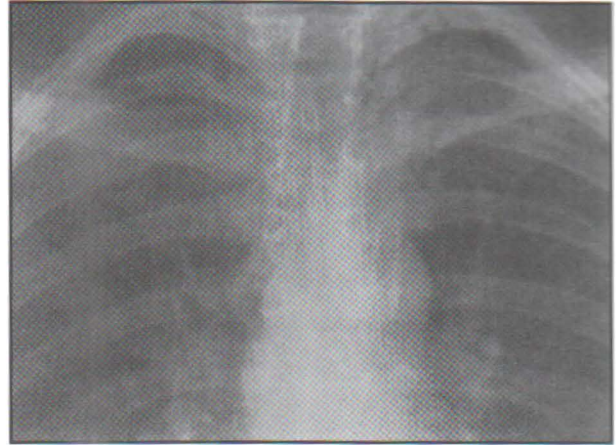
Evidence of an enlarged left ventricle can be as follows:
 a) displacement of cardiac apex inferiorly and posteriorly
 b) boot shaped heart
 c) Rigler's sign (on the lateral film, from the junction of inferior vena cava (IVC) and heart at the level of the diaphragm, measure 1.8 cm posteriorly and then 1.8 cm superiorly. If the cardiac shadow extends beyond this point then LV enlargement is suggested.

**DM16. Pericardial Effusion**

Evidence of a pericardial effusion can be as follows:
 a) a globular heart
 b) loss of the indentations of the left mediastinal border
 c) separation of peri and epi-cardial fat pads on lateral film. The appearance is very similar to a dilated cardiomyopathy, and therefore you will need a CT scan to distinguish them.

**DM17. Pneumomediastinum**

In the PA chest and zoomed views, note the linear lucency just superior to the left atrial shadow suggestive of a pneumomediastinum.

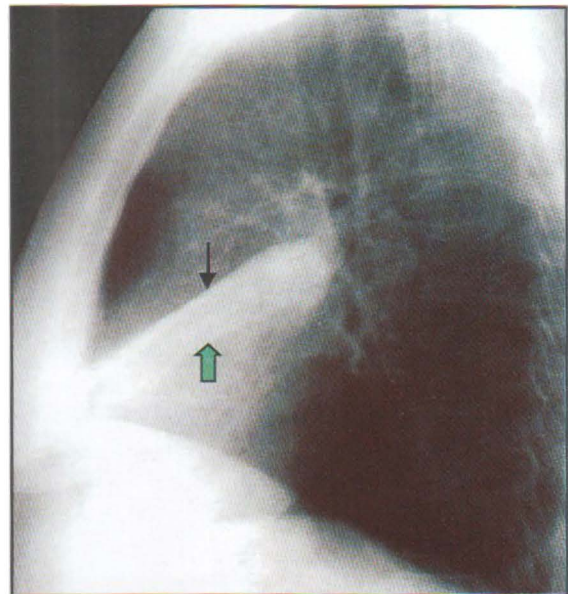
**DM18. Pneumomediastinum**

In the PA chest and zoomed views, note the linear lucency just superior to the left atrial shadow suggestive of a pneumomediastinum.

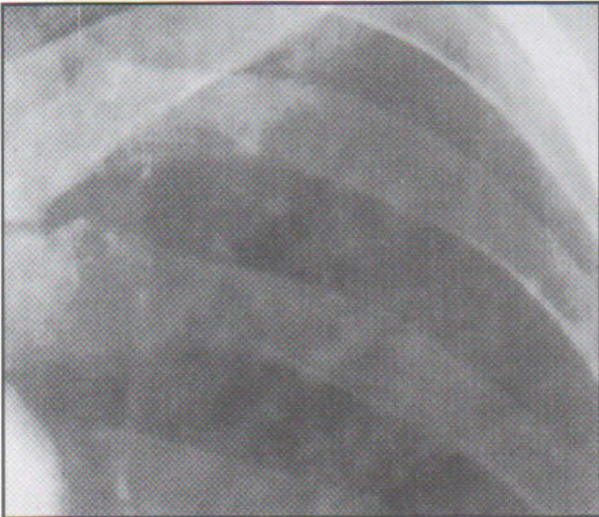
The Lungs

**DM19a. Atelectasis**

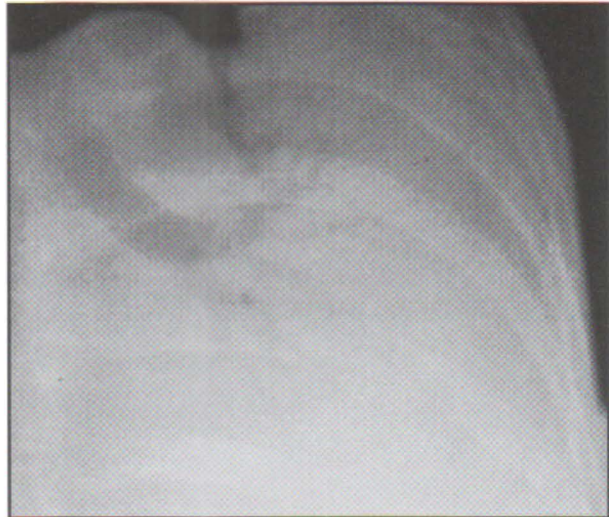
This patient has suffered complete collapse of the right middle lobe. Note the opaque, atelectatic right middle lobe projecting over the mid right hemithorax. The collapsed right middle lobe also demonstrates the "silhouette" sign; in this case, part of the adjacent right heart border is obscured by the atelectatic lobe.

**DM19b. Atelectasis**

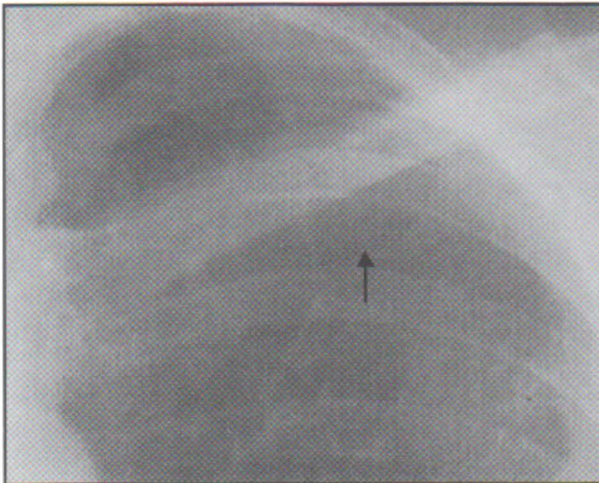
The lateral view demonstrates the flat, "pancake"-shaped right middle lobe. The minor fissure (black arrow) and major fissure (green arrow) approximate as the intervening lung tissue collapses.

**DM20. Acinar Pattern**

The acinar pattern is representative of airspace disease. Seen are ill-defined, round or elliptical nodules measuring 4-8 mm. They have a characteristic "fluffy" appearance and may take on a patchy distribution, with a later tendency to coalesce into a lobar or segmental distribution.

**DM21. Air Bronchogram**

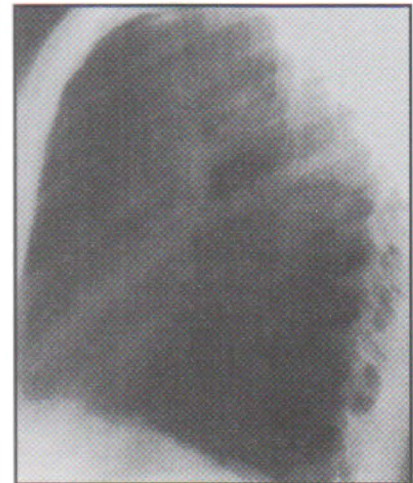
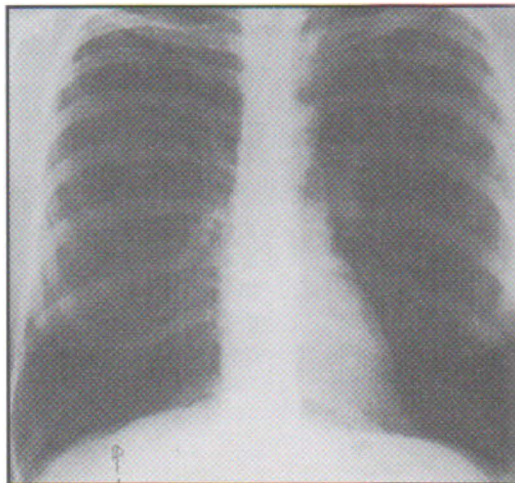
The air bronchograms seen in this chest X-ray represent lucent branching bronchi visible through surrounding (opaque) airspace disease.

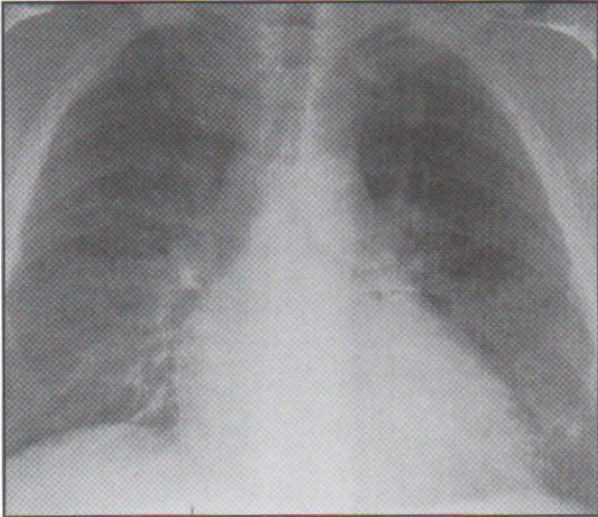
**DM22. Bullae**

Bullae are often associated with emphysema. By definition, a bulla is a gas-containing, avascular area of lung at least 1 cm in diameter and with a wall thickness of at least 1 mm.

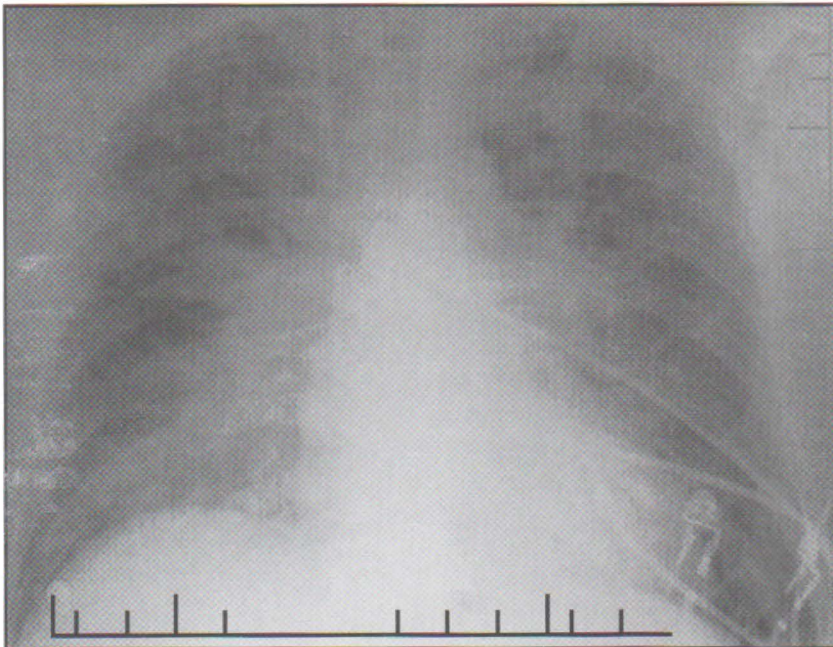
DM23. Hyperinflation

This young patient has emphysema as a result of alpha-1-antitrypsin deficiency. Hyperinflation is noted as a generalized increase in radiolucency due to increased aeration and spread of vasculature, an increased AP chest diameter and retrosternal airspace on the lateral view, and diaphragmatic domes projecting well below the normal level of the 10th rib posteriorly and the 6th rib anteriorly on the PA view.

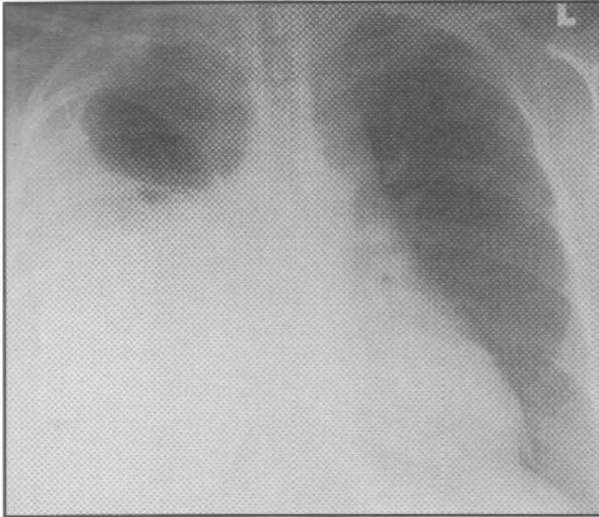


**DM24a.****DM24b.****DM24. Kerley B Lines**

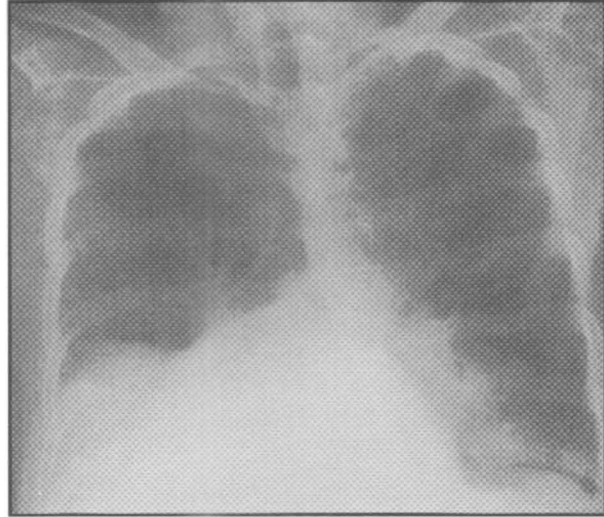
Kerley B lines are short (1-2 cm), horizontal, linear opacities that meet the pleura at right angles. They are typically visualized at the periphery of the lower lung fields.

**DM25. Pulmonary Edema**

The plain AP films of this patient exemplify pulmonary edema. One can easily appreciate the fluffy white opacities throughout the lung field. Other signs such as vascular redistribution, peri-bronchial cuffing, and pleural effusion are difficult to appreciate on this study. However, Kerley B lines are seen, especially in the lower right lung field.



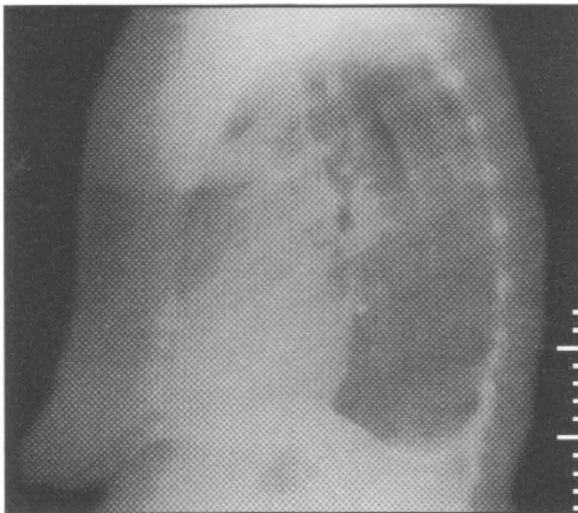
DM26a.



DM26b.

DM26. Pleural Effusion (PA)

In this patient, a large pleural effusion obscures most of the right lung field. In an uncomplicated effusion such as this, fluid is higher laterally than medially, forming a meniscus with the pleura. A horizontal fluid level is seen only in hydropneumothorax (both fluid and air within pleural cavity). Blunting of costophrenic angles is first noted on the PA view with approximately 200 cc of fluid accumulation.

**DM27. Pleural Effusion (lateral)**

A small pleural effusion is noted as a blunting of the left posterior costophrenic angle. As an effusion develops, pooling of fluid occurs first in posterior recess, then spreads laterally and anteriorly; therefore the lateral film is most sensitive for pleural effusion. Blunting of the posterior costophrenic angle is first noted with a fluid accumulation of approximately 75 cc.

**DM28. Pleural Effusion (RLD)**

This patient has a moderate-sized right pleural effusion. The lateral decubitus film places the effusion in the dependent position and will show layering unless the effusion is loculated. This is noted in the same patient's left lateral decubitus film.

Reticular and Honeycomb Appearances

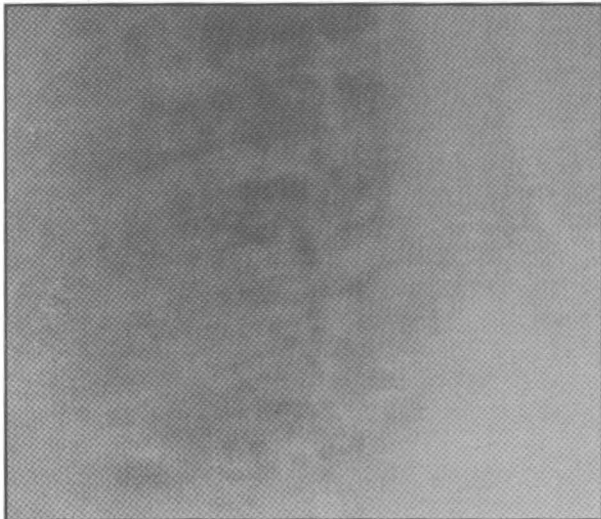
The reticular appearance refers to a collection of innumerable small linear opacities that together produce an appearance resembling a "net". The pattern can be fine, medium or coarse. Fine and medium patterns are shown here. Reticular patterns represent interstitial lung disease. End stage interstitial lung disease can result in the so-called "honeycomb" appearance. The honeycomb appearance is due to shadows of air spaces 5-10mm in diameter and 2-3 mm in wall thickness.



DM29. Reticular & Honeycomb (fine)



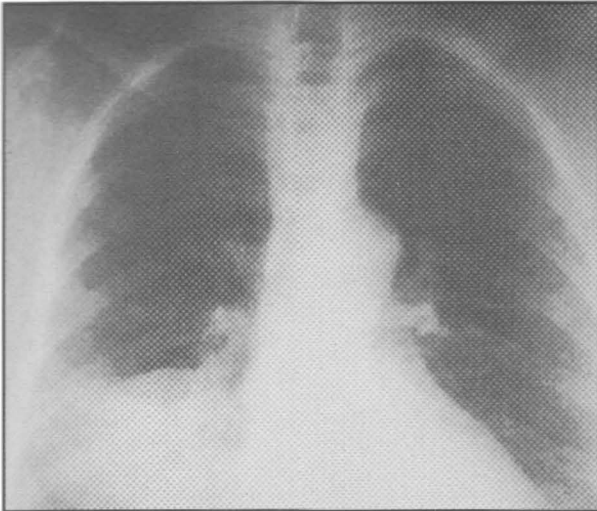
DM30. Reticular & Honeycomb (medium)



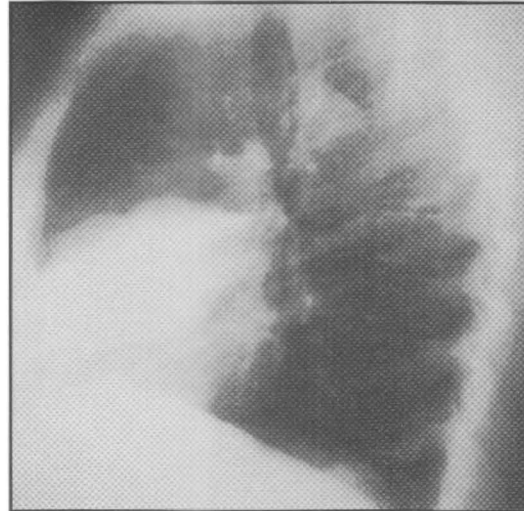
DM31. Reticular & Honeycomb



DM32. Reticular & Honeycomb



DM33a. Silhouette Sign

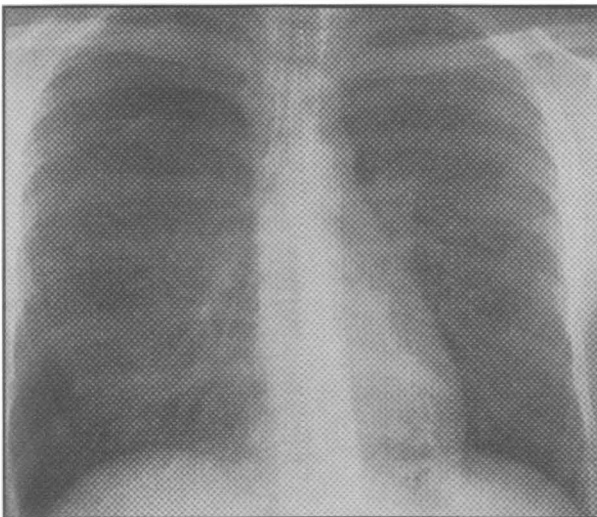


DM33b. Silhouette Sign

DM33. Silhouette Sign

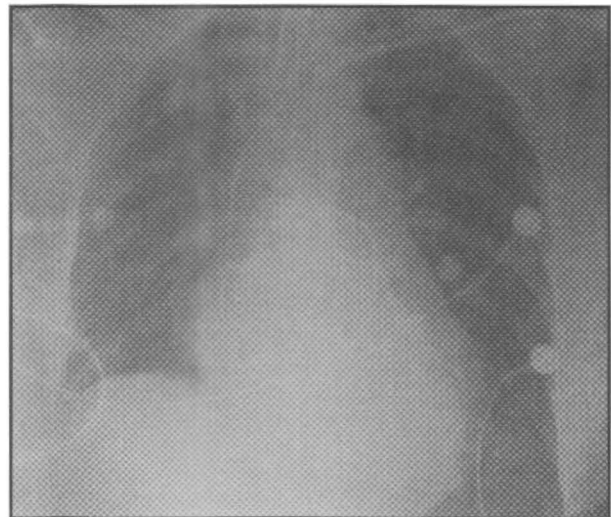
The silhouette sign refers to loss of normally appearing interfaces, implying opacification due to consolidation (most common), atelectasis, mass, etc., in adjacent lung.

This patient demonstrates silhouetting of the right heart border to right middle lobe consolidation.



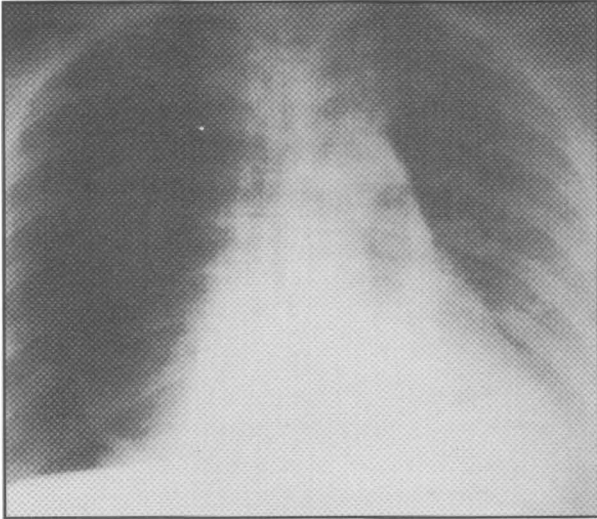
DM34. Simple Pneumothorax

There is an obvious right pneumothorax. Note the lack of vascularity in the periphery in the right hemithorax.

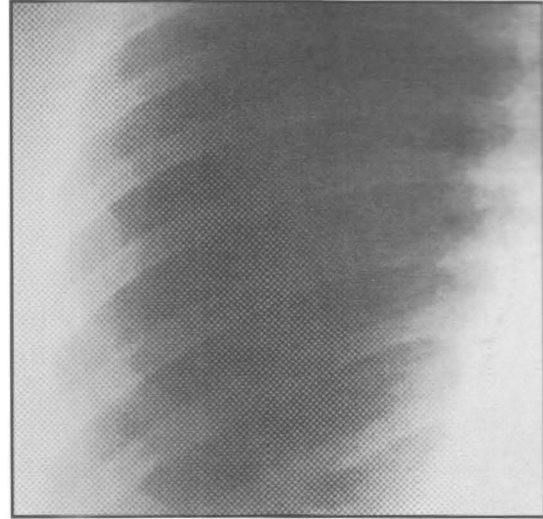


DM35. Simple Pneumothorax

The patient's left pneumothorax is more difficult to diagnose on this supine film. This study demonstrates the "deep sulcus sign", with the left costophrenic sulcus descending below the edge of the film. Other clues include a hyperlucent left hemithorax and slight sharpening of the left mediastinal border.



DM36a. Tension Pneumothorax

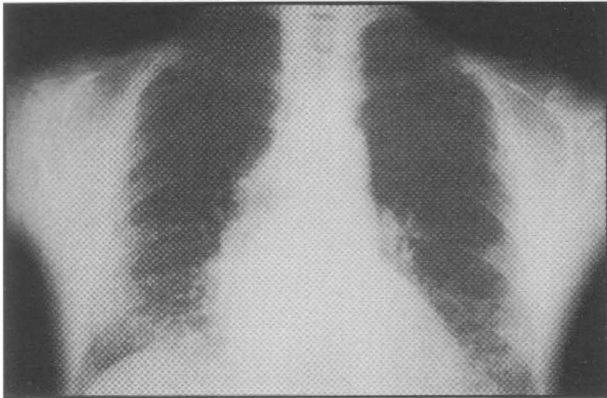


DM36b. Tension Pneumothorax

DM36. Tension Pneumothorax

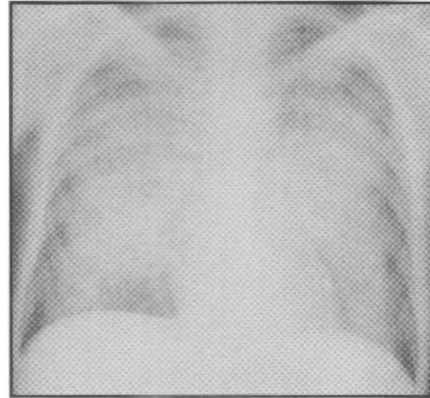
In addition to the features of an uncomplicated pneumothorax, note the marked mediastinal shift to the left in this young patient with a right tension pneumothorax.

Common Clinical Scenarios in Chest Radiology



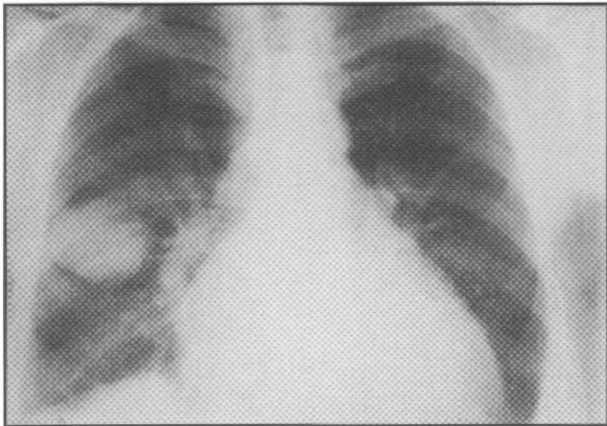
DM37. Interstitial Disease

Diffuse reticulonodular markings prominent in the lower lung zones; linear strands and spherical densities.
(Courtesy Dr. M. Hutcheon)



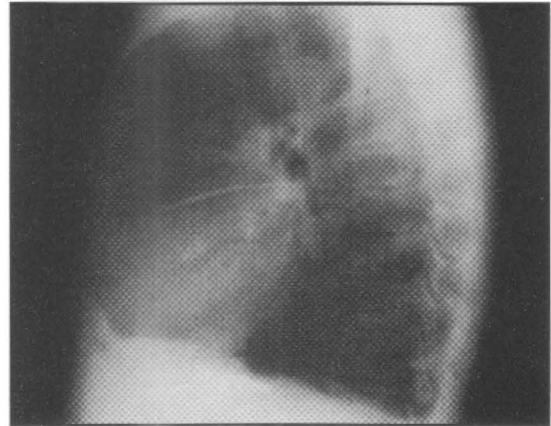
DM38. Airspace Disease

Ill-defined fluffy structures with confluences
+/- air bronchograms.
(Courtesy Dr. M. Hutcheon)



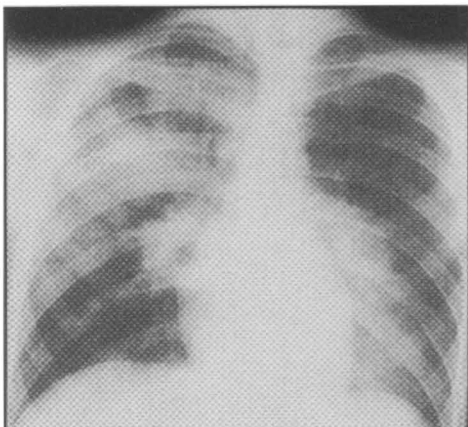
DM39. Congestive Heart Failure (CHF) (PA film)

Cardiomegaly, pulmonary congestion, blunting of costophrenic angles, and loculated pleural effusion (pulmonary pseudotumour).



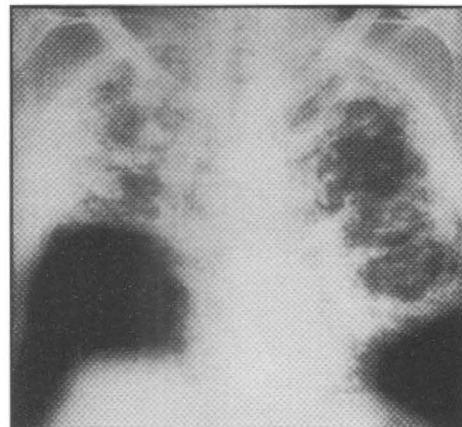
DM40. Congestive Heart Failure (CHF) (Lateral film)

Post-treatment for CHF. Note scant effusion within fissure lines.



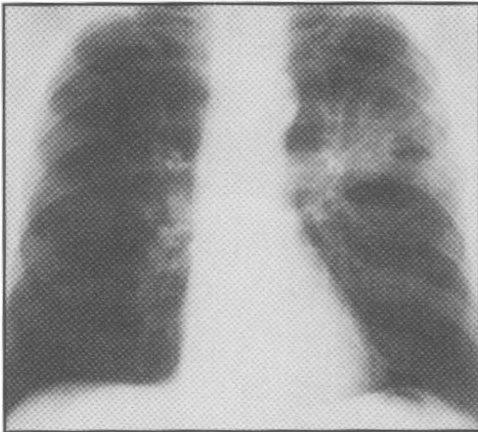
DM41. Wegener's Granulomatosis

Patchy alveolar infiltrates, widely distributed multiple irregular masses \pm pleural effusion and \pm thick-walled cavities. (Courtesy Dr. M. Hutcheon)

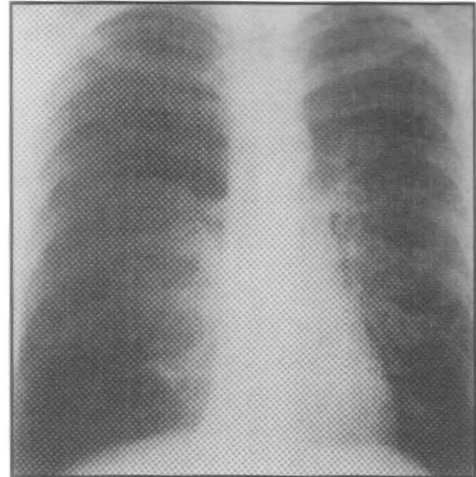


DM42. Active Tuberculosis

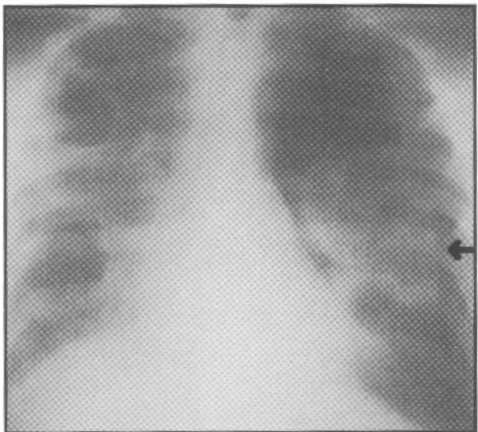
Cavitation in apical regions and posterior segments of upper lobe \pm calcification.
(Courtesy Dr. M. Hutcheon)



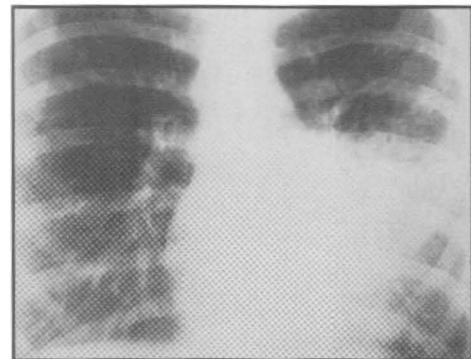
DM43. Bronchogenic Carcinoma
Ill-defined infiltrating lesion in left hilar region.



DM44. Pneumothorax
Separation of visceral and parietal pleura. Note hyperlucent lung field and small, deflated lung on right with lack of peripheral lung markings.
(Courtesy Dr. G. Olscamp)



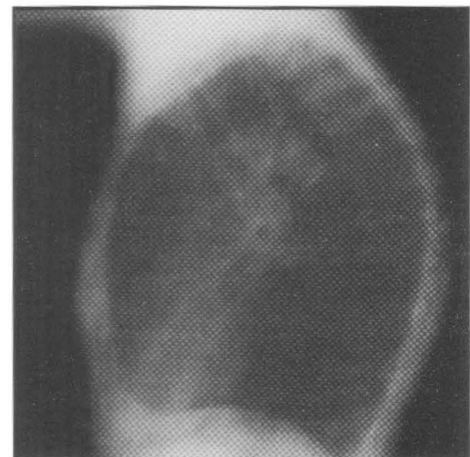
DM45. *Pneumocystis carinii* Pneumonia
Bilateral interstitial and alveolar infiltrates with typical sparing of apices. Arrow showing pneumothorax.



DM46. Bacterial Pneumonia
"Silhouette sign" (loss of normally appearing profiles). Unilateral localized infiltrate involving lingula and obliterating left heart border.



DM47. Emphysema (PA film)
Hyperinflation, darkened lung fields, and decreased vascular markings.



DM48. Emphysema (Lateral film)
Large retrosternal airspace, increased AP diameter (barrel chest), flattened hemi-diaphragms.

Musculoskeletal Imaging

An Approach to Fractures

Generally you should image the limbs bilaterally (unaffected and affected), image joints immediately proximal and distal to the affected joint, take AP and lateral views (and special views depending on the joint, i.e. skyline for knee or transcapular for shoulder) and then image before and after the reduction.

Site: Identify which bone, region of bone (proximal, distal, metaphyseal, etc.), intra- or extra-articular. Look for radiolucent (dark on x-ray) lines, discontinuities in the contour of the cortex.

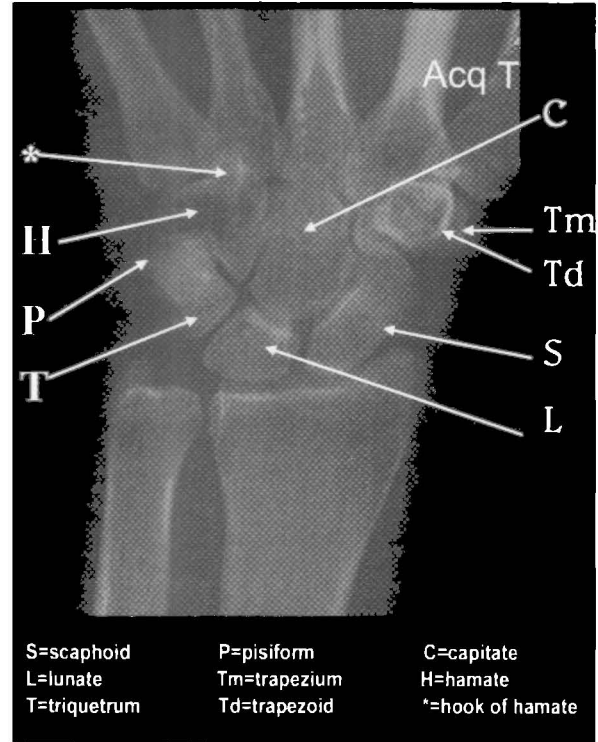
Type: Transverse, oblique, spiral, comminuted.

Displacement: Undisplaced or displaced (angulated, translated, rotated, shortened, impaction).

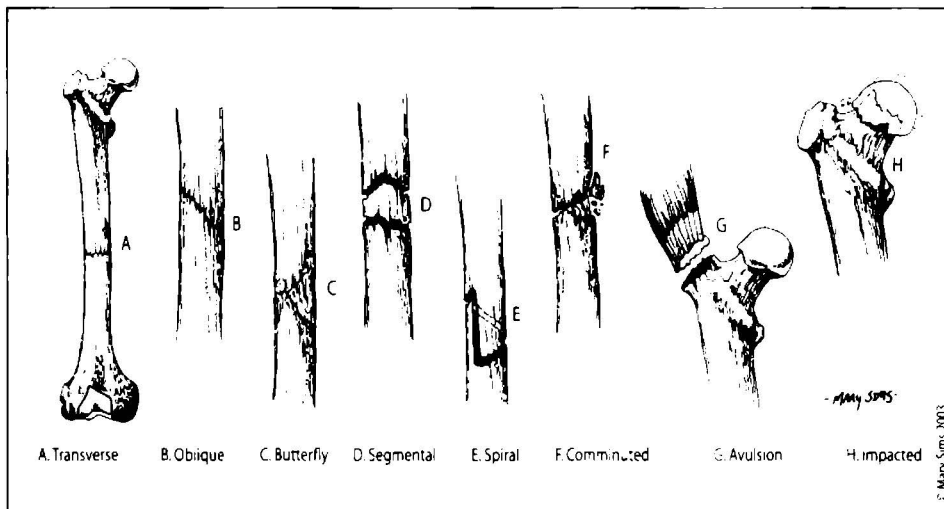
Soft Tissue involvement: Calcification, gas, foreign bodies, open vs. closed. You may see features if fracture is not obvious, such as soft tissue swelling, changes in fat stripes, joint effusions and fat fluid levels caused by the displacement of periarticular fat by joint fluid.

Joints: Are the articular surfaces in apposition? Radiolucent lines? Arthritis features?

A negative x-ray does not exclude a fracture (especially in scaphoid, radial head or metatarsal head). Diagnosis is often clinical and not confirmed until 7-10 days later when enough bone resorption has occurred.



DM49. Carpal Anatomy



DM50. Fracture Types

**DM51. Scaphoid Fracture**

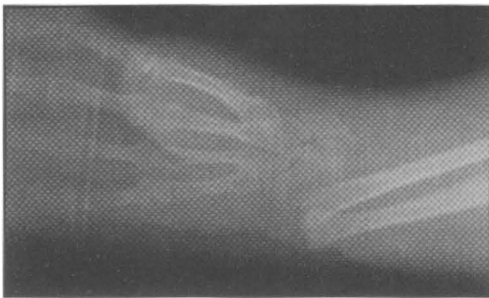
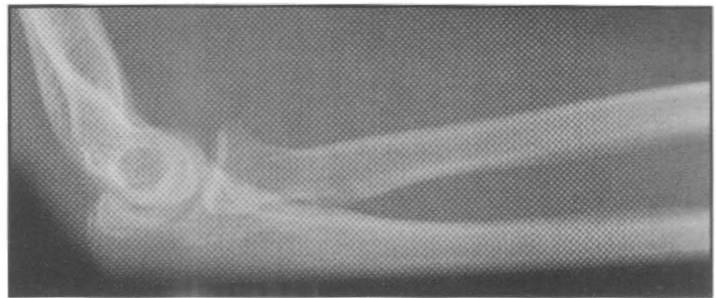
The most common carpal fracture. Look for tenderness at the anatomic snuff box. Wrist x-ray is often negative.

**DM52. Triquetral Fracture**

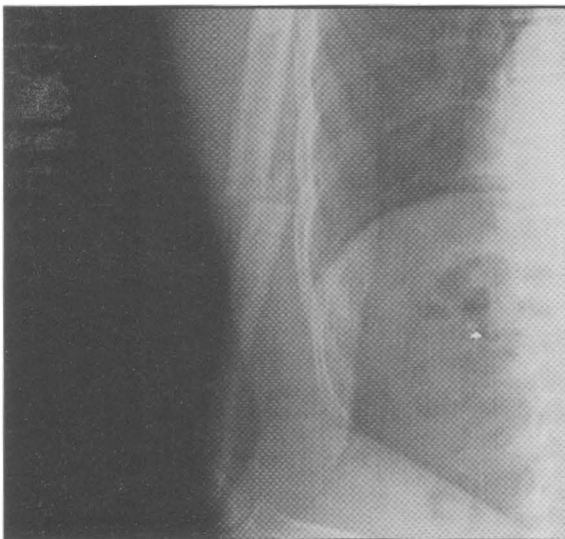
It is either a dorsal avulsion or body fracture. Look for tenderness dorsally, distal to ulnar styloid.

**DM53. Colles and Metacarpal Fracture**

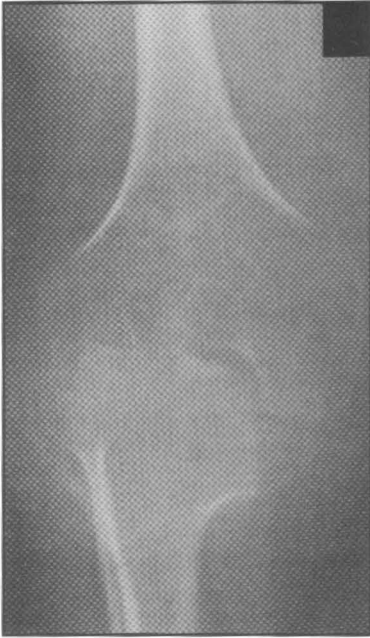
Fracture of distal radius (in this case, also metacarpal), ulnar styloid, and dorsally displaced causing a dinner-fork deformity. If it is volarly displaced, it is a Smith's fracture.

**DM54. Try to find the fracture**

DM55. Elbow Fracture Radial head fractures are the most common fracture of the elbow, usually resulting from fall on the outstretched hand. Pain profile includes lateral elbow tenderness and pain, and inability to fully extend the elbow.

**DM56. Humerus Fracture: Lateral View****DM57. Humerus Fracture: PA View**

Fractures of the proximal humerus are common in elderly with a history of osteoporosis following a FOOSH. Humerus shaft fractures (pictured here) usually occur as a result of trauma in younger patients. In this case, there is approximately 10% varus angulation, and a look at the lateral view shows anterior displacement. Clinically, look for localized pain, swelling, tenderness and shortening of the upper extremity. Radial injury is common, so look for a wrist drop.



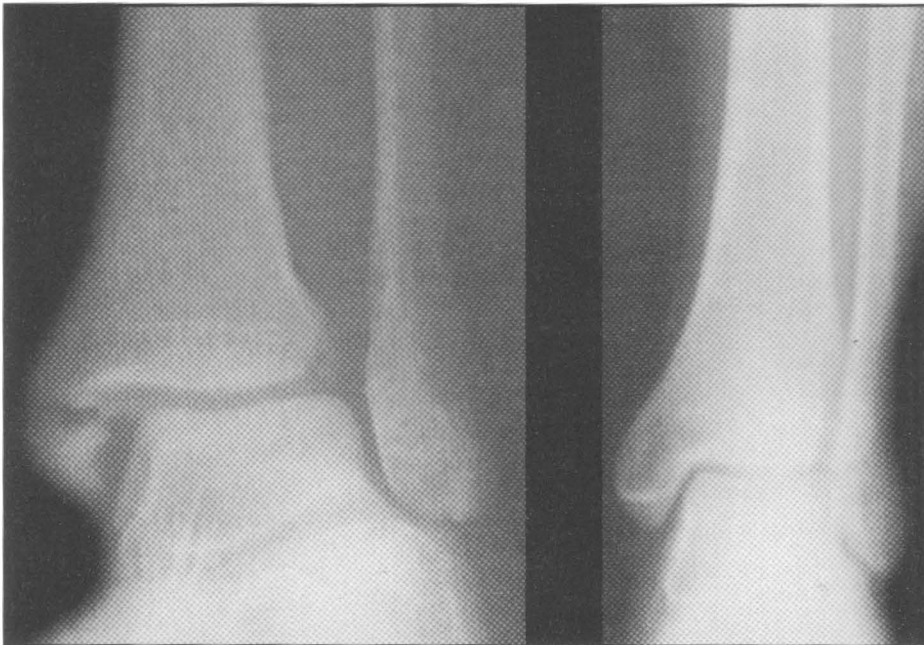
DM58. Knee; Medial Epicond



DM59. Talus Fracture

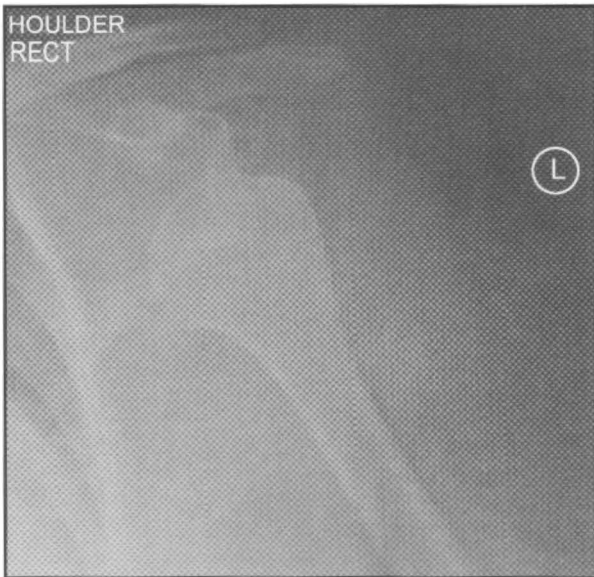


DM60. Metatarsal Fracture

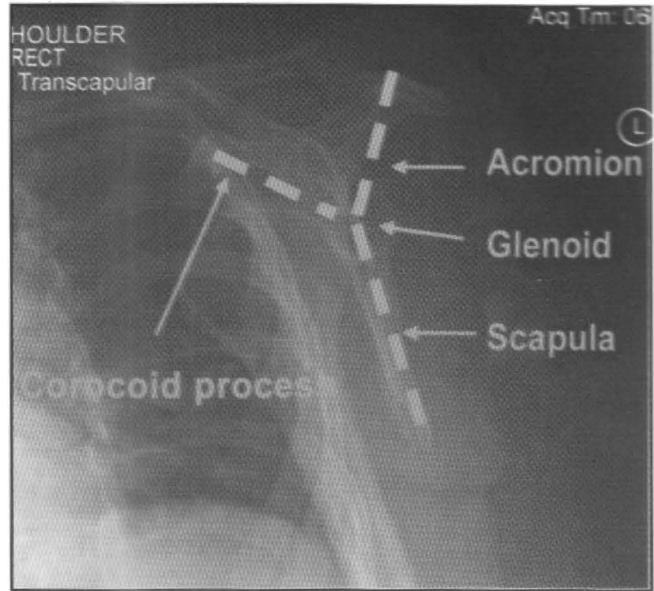


DM61. Medial Malleolus Fracture

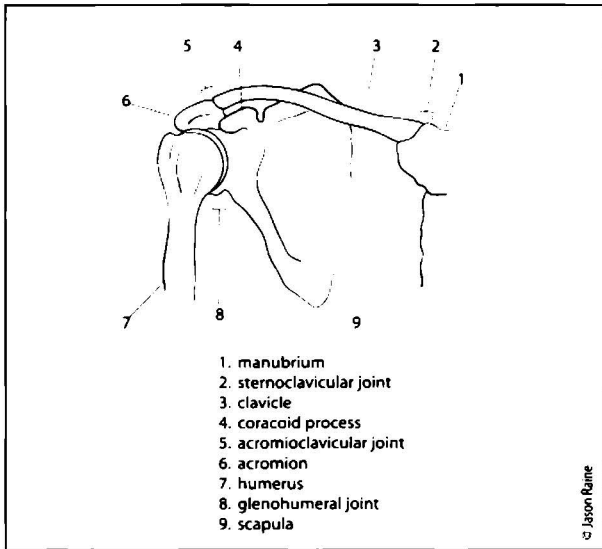
Dislocations



DM62. Shoulder Dislocation: PA View



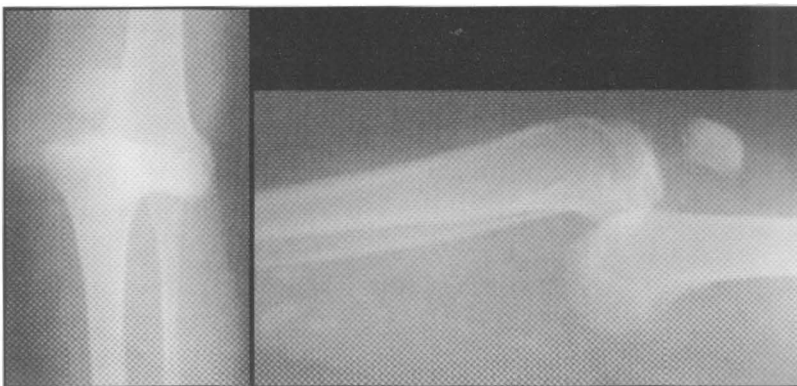
DM63. Shoulder Dislocation: Transcapular View
Mercedes-Benz sign.



DM64. Shoulder Joints

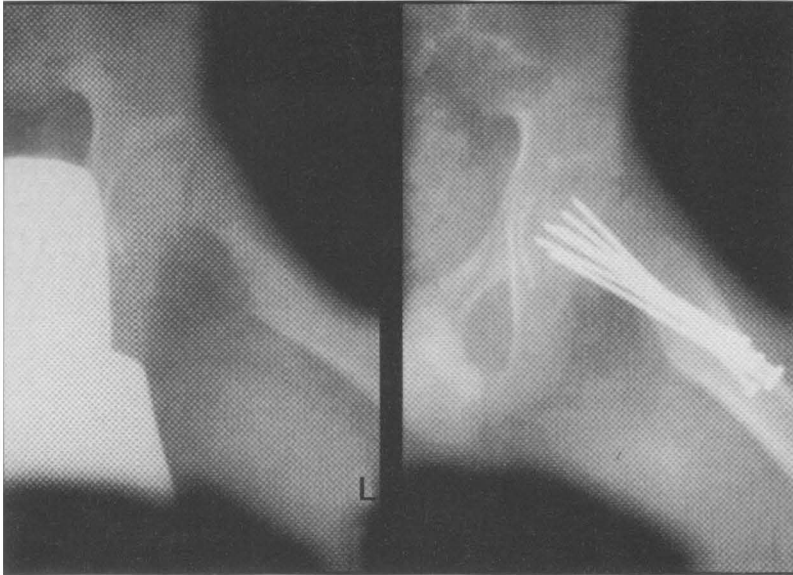
Shoulder Dislocation

The glenohumeral joint is the most commonly dislocated joint in the body, as joint stability long ago gave way to the evolutionary requirement of joint motion. 98% of these are anterior dislocations, with posterior dislocations often missed due to poor films or physical exam. Make sure you take the appropriate views (AP, axillary lateral, transcapular). These two images show an anterior dislocation, with the humeral head anterior to the "Mercedes-Benz sign." Look for rotation by examining the tuberosity, which should appear in profile in the PA view. Also make sure to look for a Hill-Sachs lesion (a divot in the posterior humeral head), a Bankart lesion (avulsion of the glenoid labrum), rotator cuff tear, nerve injury, and stiffness.

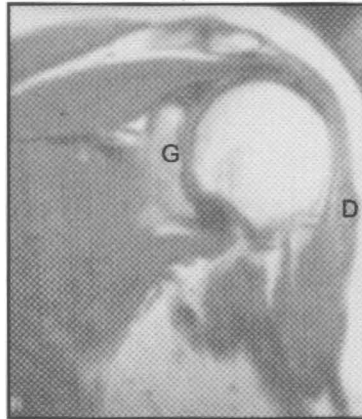
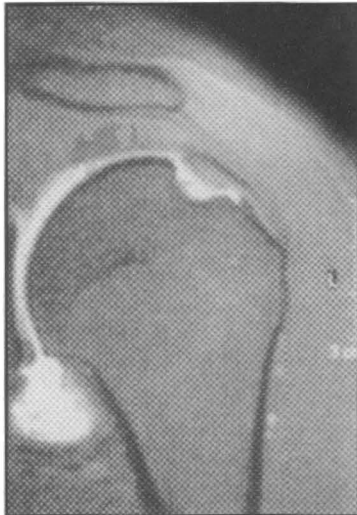


DM65. Knee Dislocation

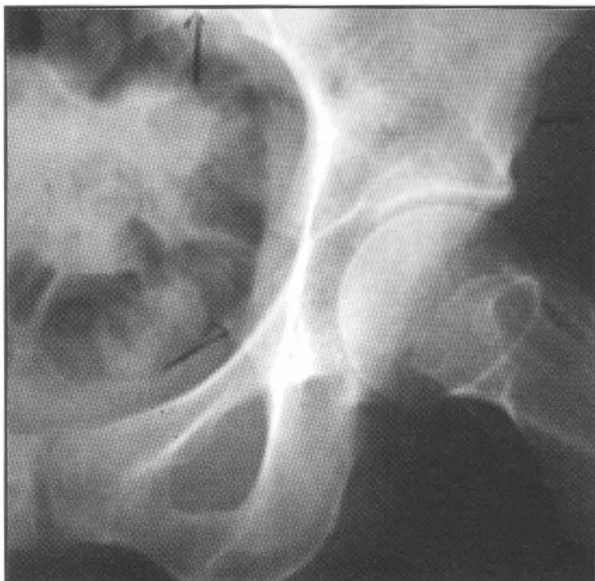
Posterior dislocations are most common. Emergent orthopedic consult is indicated, assess neurovascular status with ABI, and arteriogram.



DM66. Hip Fracture
Garden IV hip fracture,
pre and post reduction.

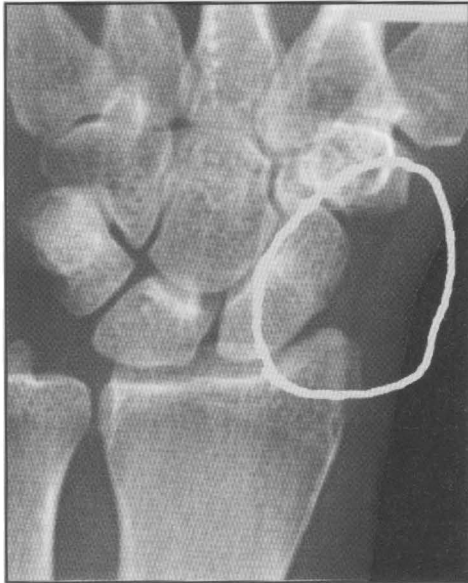


DM67. Bankart Lesion, Fracture



DM68. Hip Fracture

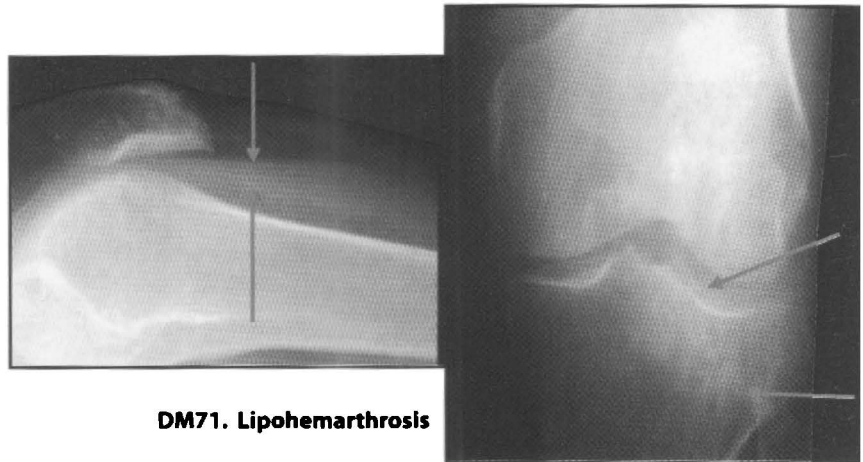
Soft Tissue Signs



DM69. Normal X-ray.
Observe the soft tissue lines circles here, and their subsequent disruption following a scaphoid fracture.



DM70. Soft Tissue; Scaphoid Fracctrue



DM71. Lipohemarthrosis

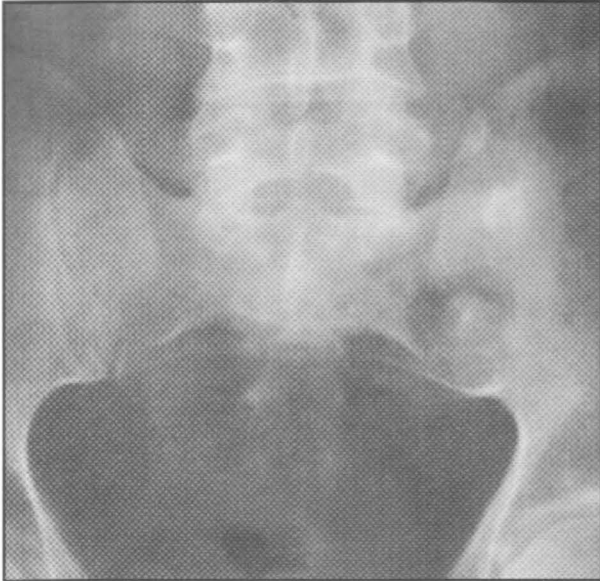


DM72. Knee Fat Fluid Level
This is indicative of a fracture, as compared to the accompanying normal image.



DM73. Soft Tissue; Normal Knee

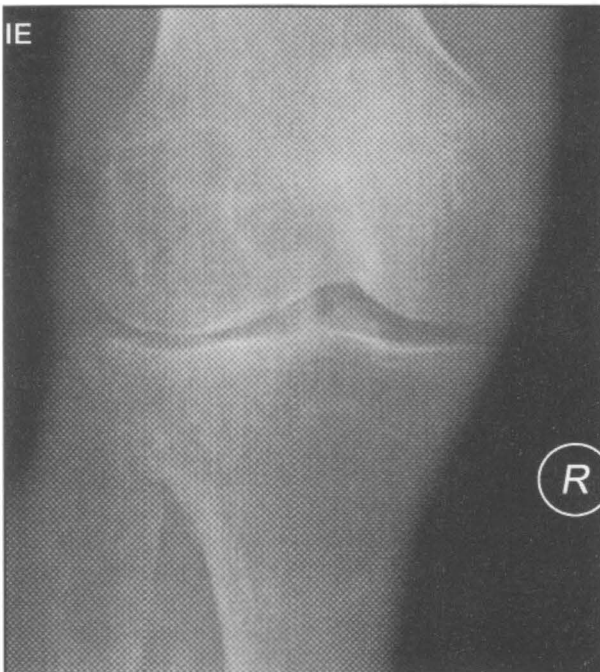
Arthritis



DM74. Ankylosing Spondylitis
Observe arthritic changes in the SI joint.



DM75. C4-5, C5-6 Severe Degeneration



DM76. Osteoarthritis, Knee
You can see joint space narrowing, sub-chondral sclerosis, and osteophytes.



DM77. Severe Osteoarthritis

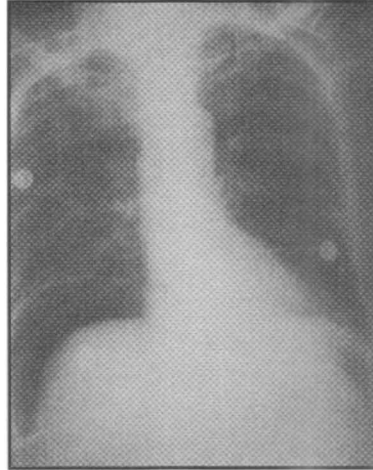
Abdominal Imaging

Gastroenterology



DM78. Small Bowel Obstruction

Gas in distended loops of small bowel (note plicae circularae), ladder pattern, air-fluid levels, and colon devoid of gas.



DM79. Bowel Perforation

Upright chest film showing subdiaphragmatic free air above the liver.

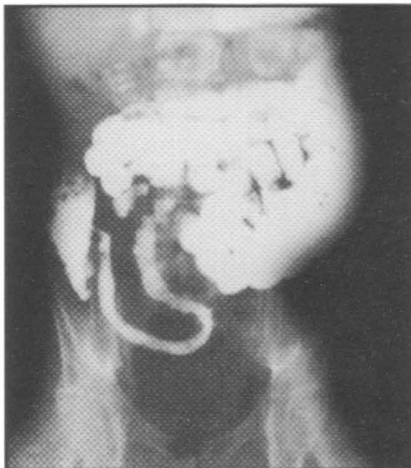
(Courtesy Dr. G. Olscamp)



DM80. Diverticular Disease

Mucosal and submucosal herniations through muscular layer of bowel.

(Courtesy Dr. G. Olscamp)



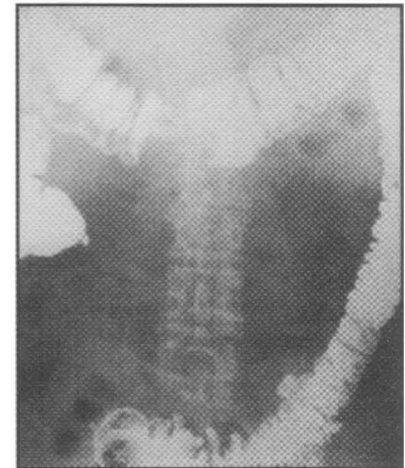
DM81. Crohn's Disease

Terminal ileitis and narrowing of the lumen due to mucosal ulceration, extensive thickening and rigidity of the bowel wall.



DM82. Ulcerative Colitis

Colon appears like a smooth tube due to loss of haustrations; ileocecal valve widely patent with involvement of terminal ileum.



DM83. Colon Carcinoma

Classic "apple core" malignant lesion in transverse colon.

(Courtesy Dr. G. Olscamp)

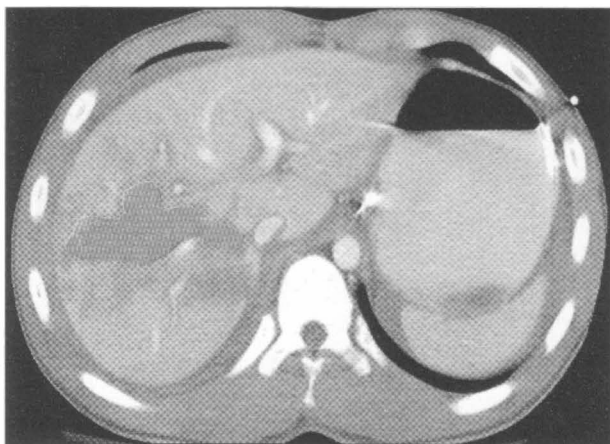


DM84. Pancreatitis
Mottled calcification in left upper quadrant suggestive of chronic pancreatitis. Note right-sided pleural effusion.

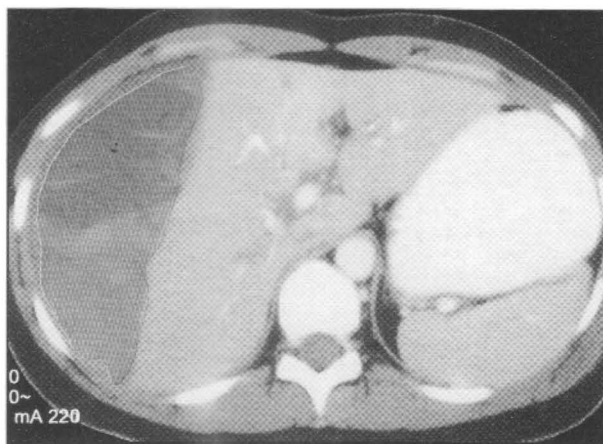


DM85. Stone in the Common Bile Duct (CBD)
Stone in the CBD just at the take-off of cystic duct. (Courtesy Dr. G. Haber)

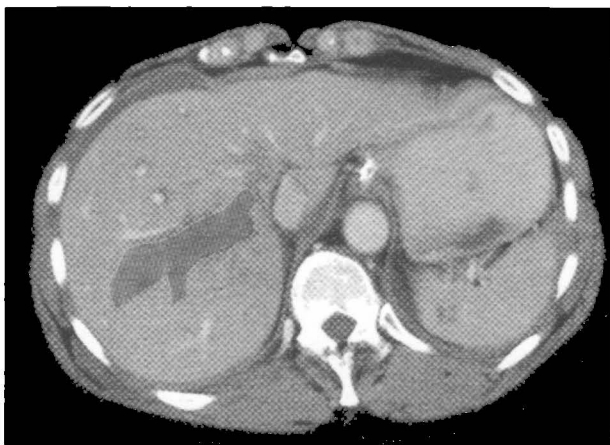
Abdominal Trauma



DM86. Intraparenchymal Hematoma



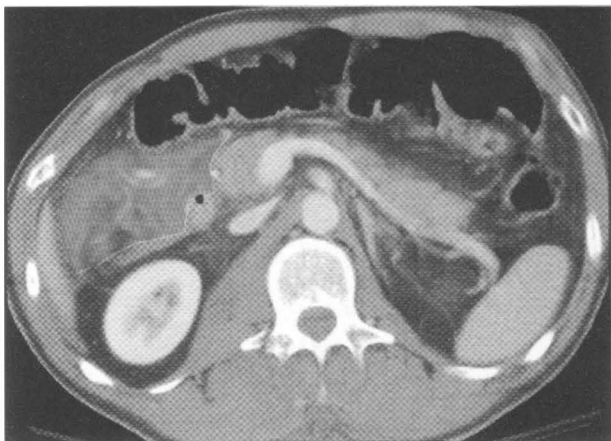
DM87. Subcapsular Hematoma



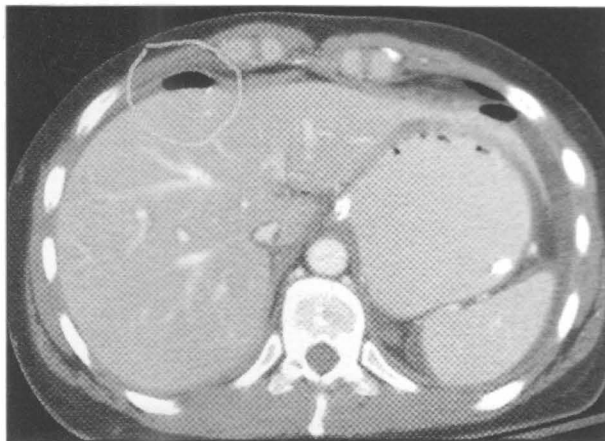
DM88. Hepatic Laceration



DM89. Intramural Hematoma



DM90. Mesenteric Hematoma



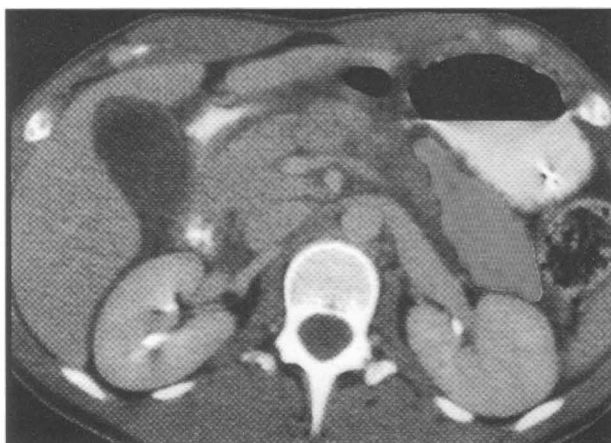
DM91. Free air from a perforation



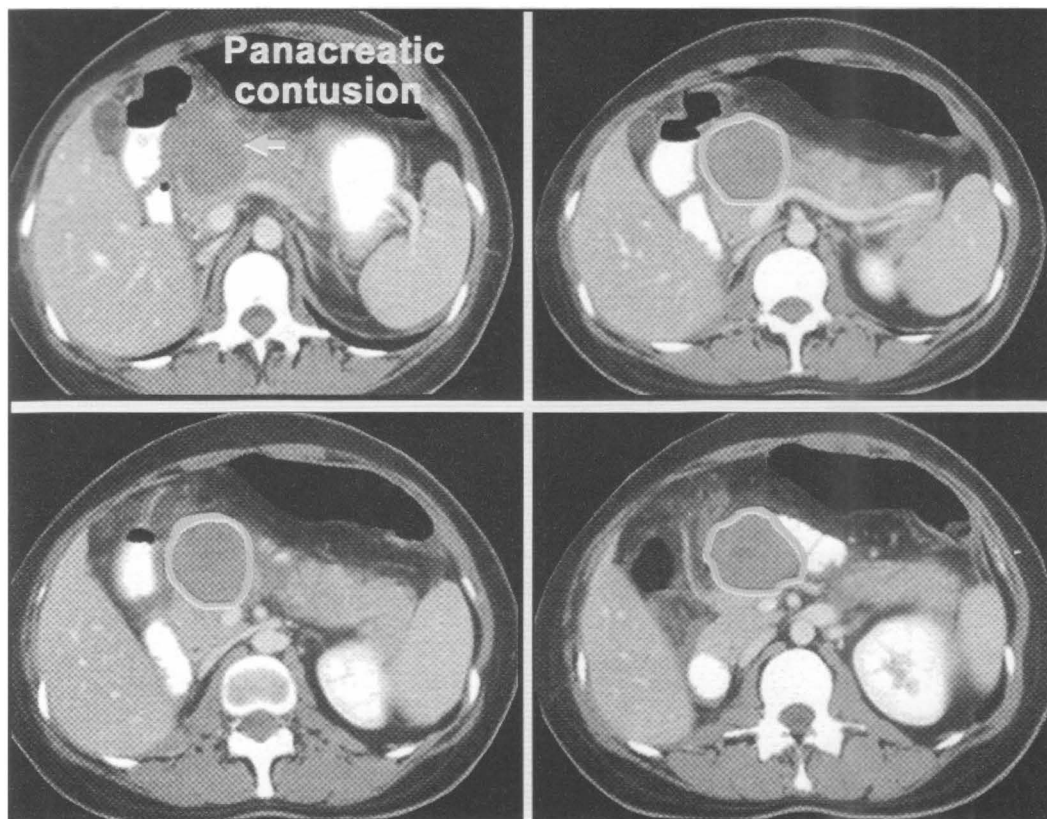
DM92. Splenic Hematoma



DM93. Collecting System Leak



DM94. Pancreatic Laceration



DM95. Pancreatic Contusion

Endocrinology



E1. Cushing's Syndrome

Note moon face, plethora, truncal obesity, and thinning of extremities.

(Courtesy Dr. W. Singer)



E2. Grave's Disease

Proptosis and

lag

Courtesy

Dr. W. Singer



E3. Pretibial Myxedema

Waxy infiltrative plaques and edema, consistent with infiltrative dermopathy of Grave's disease.

(Courtesy Dr. W. Singer)



E4. Acromegaly

Broad nose, thick skin, deep skin creases, skin tags, and general coarse features.

(Courtesy Dr. W. Singer)



E5. Necrobiosis

Lipoidica

Erythematous papules or nodules forming shiny/waxy, yellow-red plaques covered with telangiectatic vessels with scaly, atrophic, and depressed centre.

(Courtesy The Hospital for Sick Children Slide Library, Toronto)

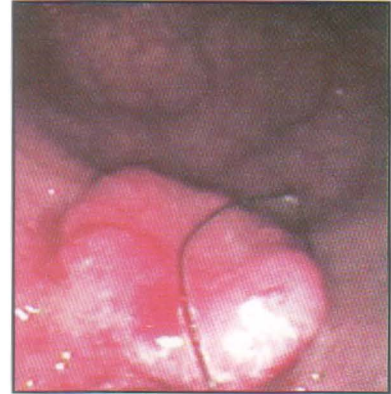
Gastroenterology



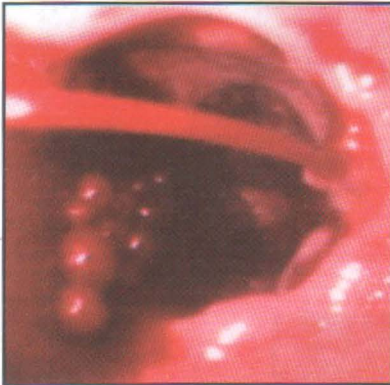
G1. Esophageal Varices
(Courtesy Dr. G. Kandel)



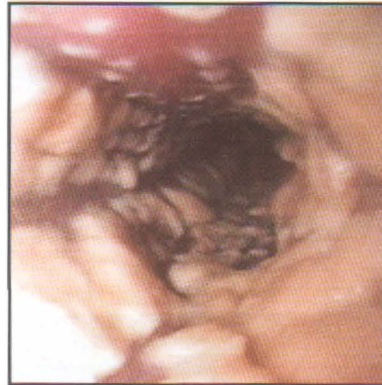
G2. Peptic Ulcer Disease
(Courtesy Dr. G. Kandel)



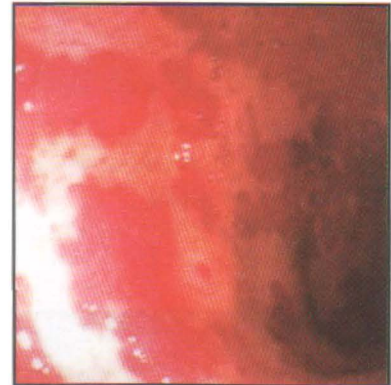
G3. Colon Carcinoma
(Courtesy Dr. G. Kandel)



G4.
Blood spurting from a small ulcer.
(Courtesy Dr. G. Kandel)



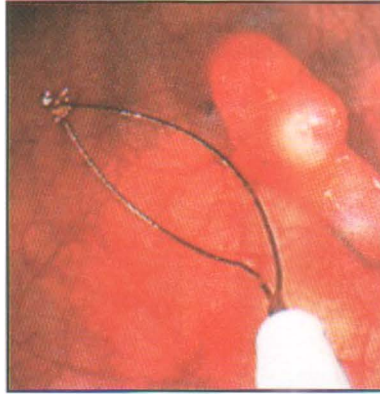
G5. Candida Esophagitis
(Courtesy Dr. G. Kandel)



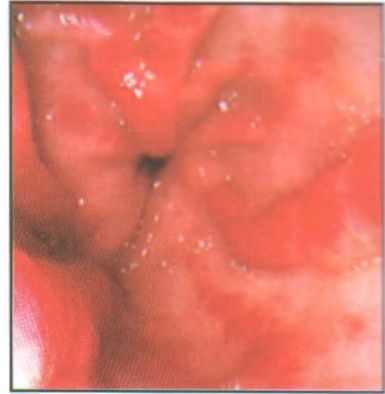
G6. Ulcerative Colitis
Diffuse, erythema, friability and loss of normal vascular pattern.
(Courtesy Dr. G. Kandel)

**G7. Aphthous Ulcer**

Aphthous ulcer of Crohn's disease.
Note: normal surrounding mucosa.
(Courtesy Dr. G. Kandel)

**G8. Colonic Polyp**

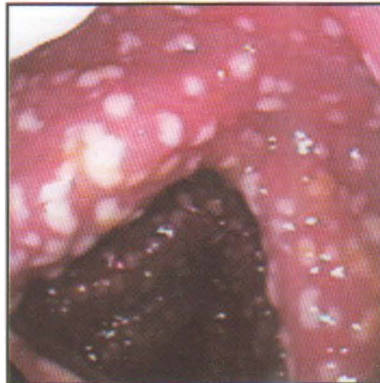
Removal with snare.
(Courtesy Dr. G. Kandel)

**G9. Angiodysplasia**

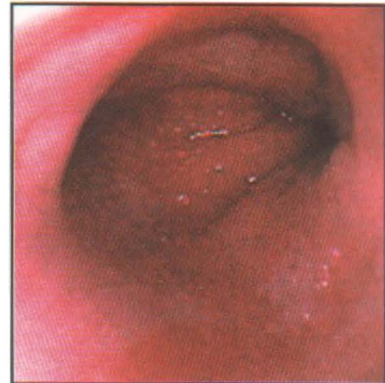
("Watermelon stomach") usually presents as anemia, can be treated by endoscopic coagulation.
(Courtesy Dr. G. Kandel)

**G10. Internal Hemorrhoid**

As viewed by retroflexing the colonoscope.
(Courtesy Dr. G. Kandel)

**G11. Pseudomembranous Colitis**

(Courtesy Dr. G. Kandel)

**G12. Barrett's Esophagus**

Short segment Barrett's esophagus - columnar epithelium extends up into the normal squamous epithelium of the esophagus in one quadrant.
(Courtesy Dr. G. Kandel)

Geriatric Medicine

Pressure Ulcer - Stage 1



GM1. Stage 1
(Courtesy Rola Moghabghab, RN)

Pressure Ulcer - Stage 2



GM2a. Stage 2
(Courtesy Rola Moghabghab, RN)



GM2b. Stage 2
(Courtesy Rola Moghabghab, RN)



GM2c. Stage 2
(Courtesy Rola Moghabghab, RN)

Pressure Ulcer - Stage 3



GM3. Stage 3
(Courtesy Rola Moghabghab, RN)

Pressure Ulcer - Stage 4



GM4a. Stage 4
(Courtesy Rola Moghabghab, RN)



GM4b. Stage 4
(Courtesy Rola Moghabghab, RN)

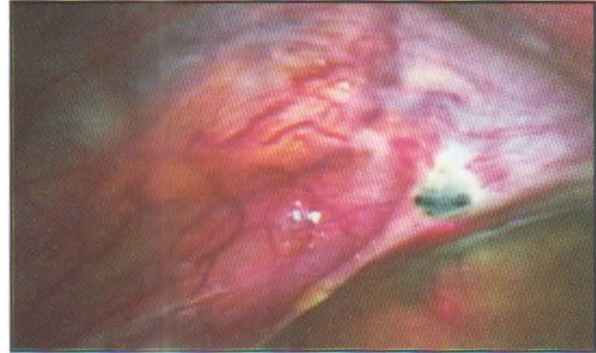
Gynecology



GY1. Endometriosis

Uterus with hemorrhagic fibrovascular adhesions on its serosal surface.

(Courtesy Dr. I. Zbeirnowski)



GY2. Endometriosis Laporoscopic view

Brownish-black implant on the uterosacral ligament.

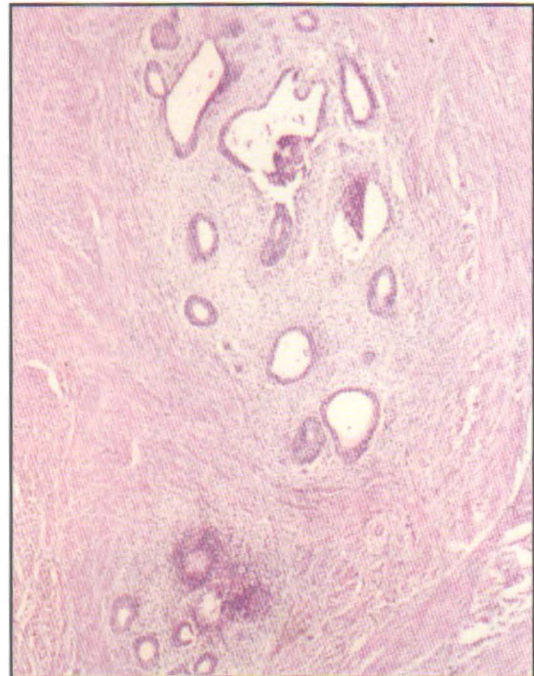
(Courtesy Dr. R. Pittini)



GY3. Ovarian Teratoma

Gross appearance of an ovary with a mature cystic teratoma.

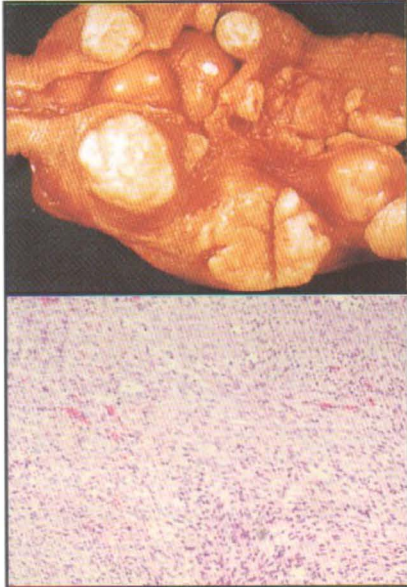
(Courtesy Dr. I. Zbeirnowski)



GY4. Adenomyosis

Microscopic endometrial stroma and glands present deep within myometrium.

(Courtesy Dr. I. Zbeirnowski)



GY5. Leiomyoma

Top: Uterus with multiple leiomyomas.
 Bottom: Microscopic view showing proliferative smooth muscle cells.
 (Courtesy Dr. I. Zbeirnowski)



GY6. Cervical Lesion

Top: Low-grade squamous intra-epithelial lesion stained with acetic acid.
 Bottom: Invasive cervical cancer.
 (Courtesy Dr. G. Likhish)



GY7. Condyloma Acuminata

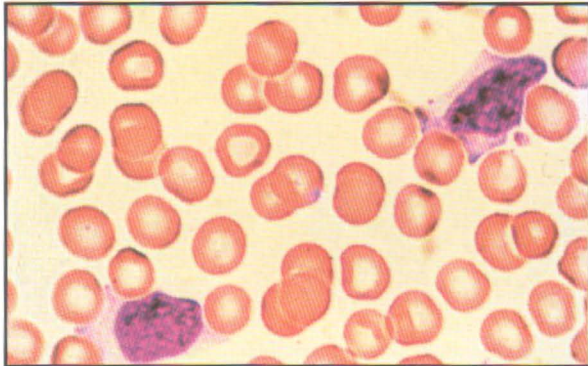
("genital warts") View of the cervix.
 Range from pinhead papules to soft cauliflower-like, skin coloured masses in clusters; associated with human papilloma virus (HPV).
 (Courtesy Dr. W. Chapman)



GY8. Ectropion

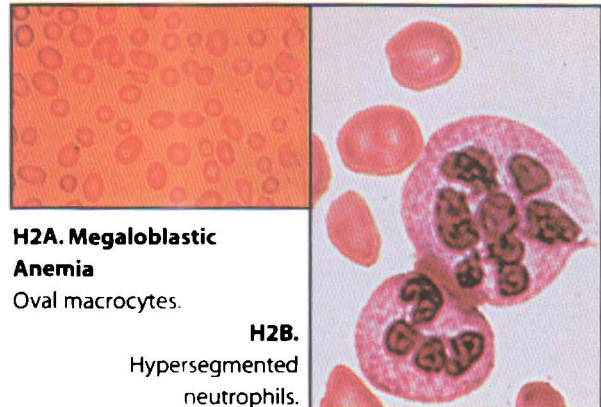
Eversion of cervical canal, with columnar epithelium farther outside the external os of the cervix.
 (Courtesy Dr. G. Likhish)

Hematology



H1. Infectious Mononucleosis

Reactive large, cytoplasmic lymphocytes. Note indented cytoplasm and eccentrically placed nucleus.

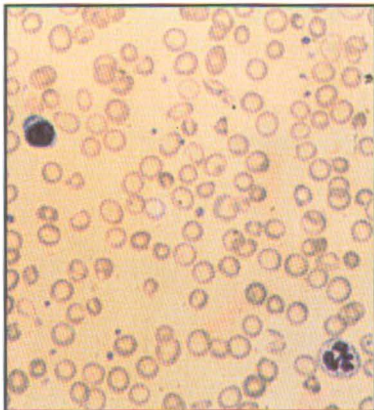


H2A. Megaloblastic Anemia

Oval macrocytes.

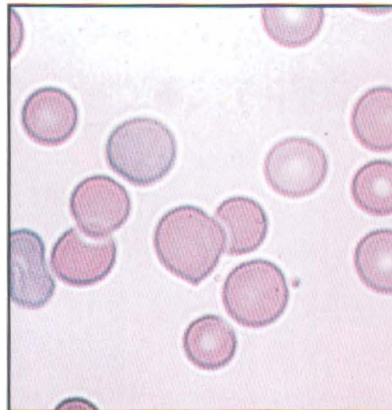
H2B.

Hypersegmented neutrophils.



H3. Iron Deficiency Anemia

Microcytosis and hypochromia of red blood cells. Note increased area of central pallor.



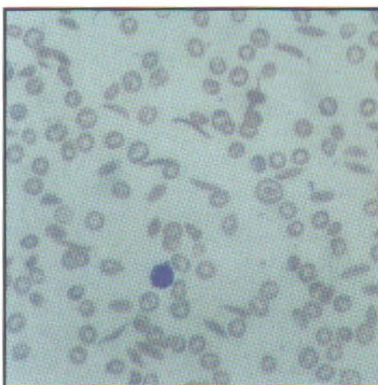
H4. Hemolytic Anemia

Macrocytes and microspherocytes with polychromasia (purplish tinge).



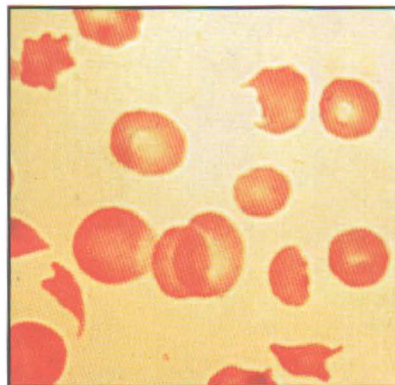
H5. Autoimmune Hemolytic Anemia

Agglutination of red blood cells.



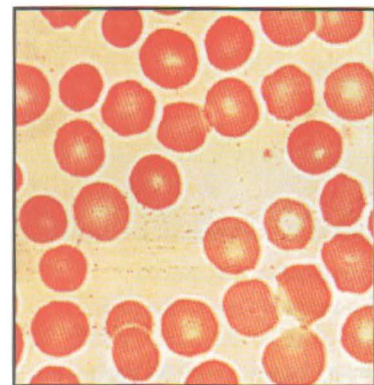
H6. Sickle Cell Anemia

Elongated, crescent-shaped and sickle red blood cells. Also note target cells and Howell-Jolly body (both due to autosplenectomy secondary to repeated splenic infarcts).
(Courtesy Dr. M. Reis)



H7. Microangiopathic Hemolytic Anemia

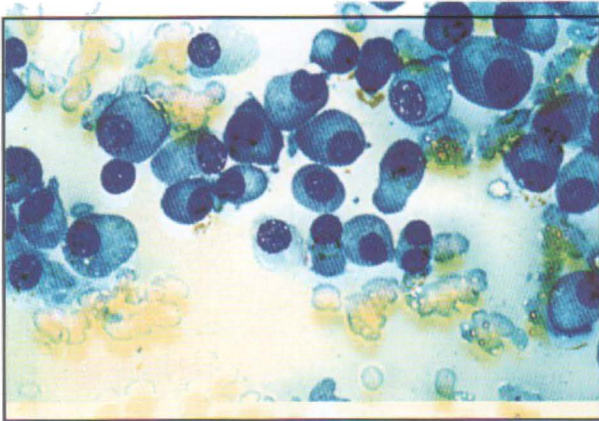
Fragmented red blood cells (schistocytes). Note helmet cell and triangle-shaped cell in bottom right field.



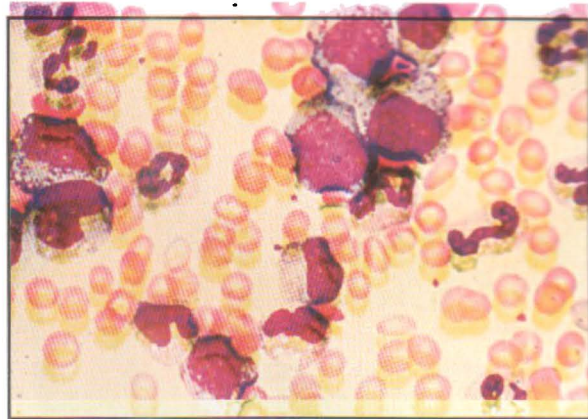
H8. Hereditary Spherocytosis

Small, round, densely staining red blood cells with no central area of pallor.

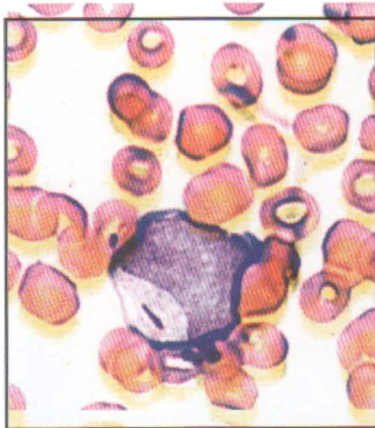
Hematologic Malignancies



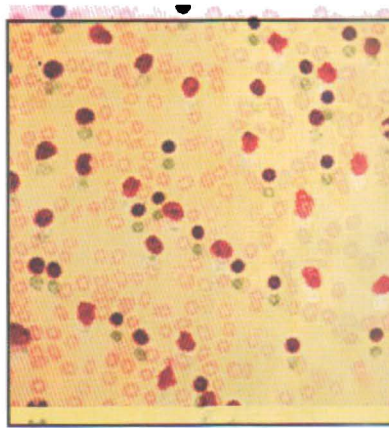
H9. Multiple Myeloma (Bone Marrow)
Plasma cells in marrow. Note binucleate malignant plasma cell in center field.



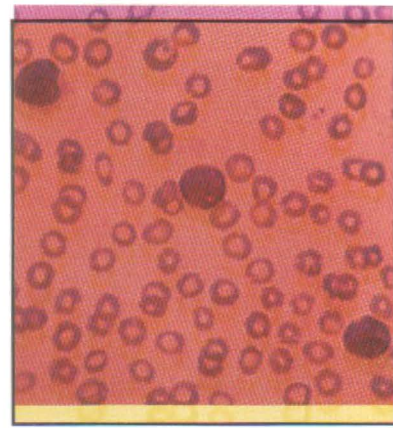
H10. Chronic Myelogenous Leukemia (CML)
Increased numbers of granulocytes and their precursors. Note most WBCs are band forms or segmented granulocytes.



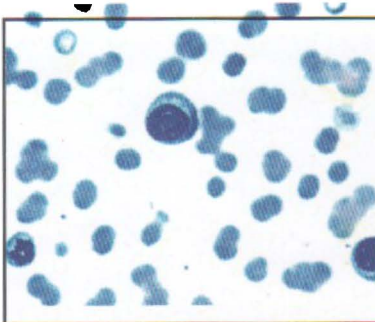
H11. Acute Myelogenous Leukemia (AML)
Note blast cell with Auer rod.



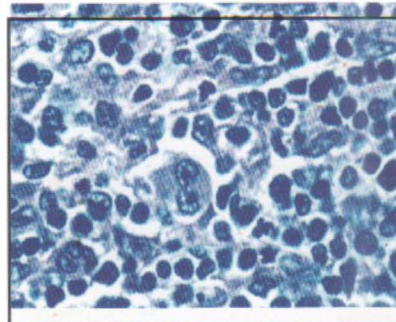
H12. Chronic Lymphocytic Leukemia (CLL) Increased number of small, well-differentiated lymphocytes. Note "smudge cells."



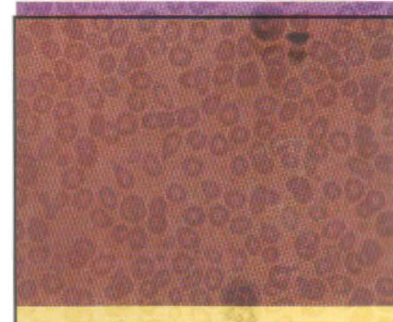
H13. Acute Lymphoblastic Leukemia (ALL) Round or convoluted nuclei, absence of cytoplasmic granules, and high nuclear to cytoplasmic ratio. (Courtesy Dr. D. Sutton)



H14. Plasma Cell Myeloma
Note "rouleaux."



H15. Hodgkin's Lymphoma (Lymph Node) Reed-Sternberg cell is large and bilobed or binucleate. Prominent within the mirror-image nuclei are giant inclusion-like nucleoli ("owl's eyes").



H16. Myelofibrosis
Tear drop red blood cells (poikilocytes) in the center field. (Courtesy Dr. D. Sutton)

Infectious Diseases



ID1. Meningococemia

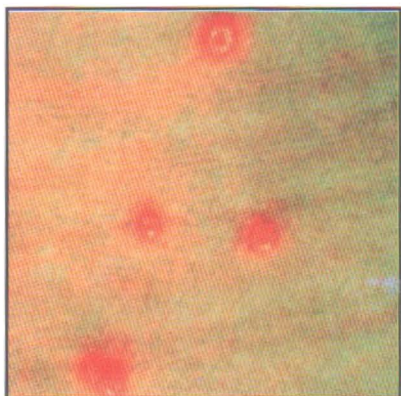
Hemorrhagic papules or petechia with purpuric centres in acral distribution.

(Courtesy The Hospital for Sick Children Slide Library, Toronto)



ID2. Scabies

Small crusted papules, eczematous plaques, intense pruritus and excoriations, and superficial linear burrows.



ID3. Molluscum Contagiosum

Discrete, umbilicated pearly white papules.



ID4. Verruca Vulgaris ("common warts")

Multiple hyperkeratotic, elevated, discrete epithelial growths with papillated surface.



ID5. Impetigo

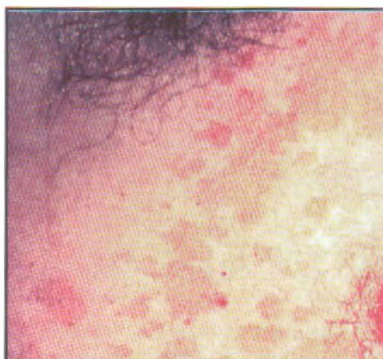
Honey-coloured, "stuck-on" crusts, and erythematous weeping erosions.



ID6. Pityriasis Rosea

Multiple round to oval erythematous patches with fine central scale.

(Courtesy Dr. L. From)



ID7. Pityriasis Versicolor

Brownish-white scaling macules on trunk.



ID8. Erysipelas

Streptococcal infection of the superficial dermis consisting of sharply delineated edematous plaques with raised margins.

(Courtesy Dr. M. Mian)



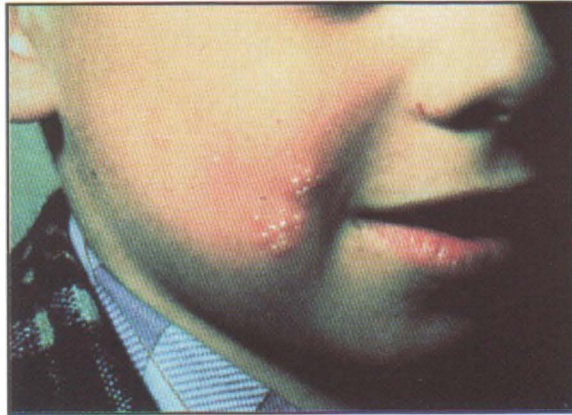
ID9. Herpes Zoster
Hemorrhagic vesicles and pustules on an erythematous base limited to a dermatome.
(Courtesy Dr. L. From)



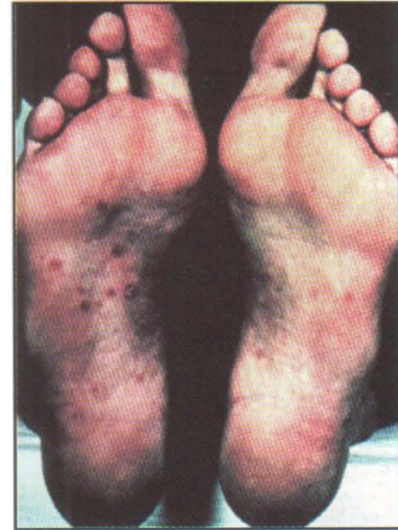
ID10. Candidiasis
Macerated or eroded erythematous patches; often studded with papules, pustules, and "satellite" lesions.



ID11. Primary Syphilis
Single, erythematous, painless round chancre on penis.



ID12. Herpes Simplex
Grouped vesicular eruption (herpetiform arrangement) on an erythematous base of skin.



ID13. Secondary Syphilis
Commonly affecting palms and soles with oval, flat-topped, scaling, non-pruritic, red-brown papules.

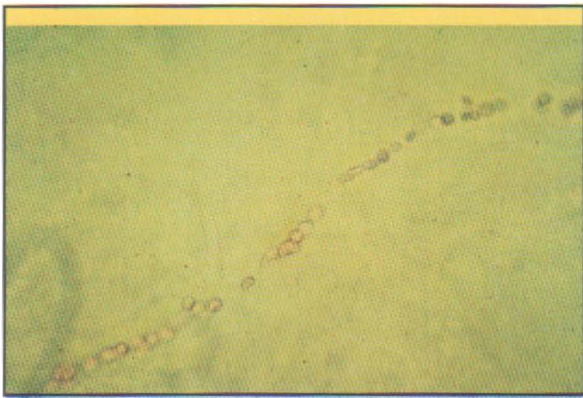


ID14. Tinea Corporis
Pruritic, scaly, round/oval plaque with central clearing on the clavicle. *(Courtesy Dr. L. From)*

Nephrology

Interpretation of Casts

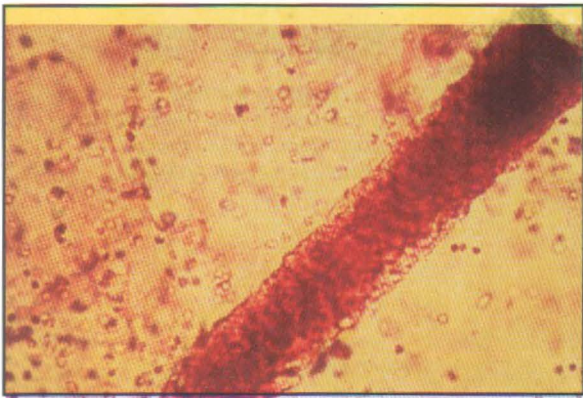
Hyaline	<ul style="list-style-type: none"> • Not indicative of renal disease • Concentrated urine • Fever • Exercise
RBC	<ul style="list-style-type: none"> • Glomerular bleeding (glomerulonephritis) = active sediment
Leukocyte	<ul style="list-style-type: none"> • Pyelonephritis • Interstitial nephritis
Heme-granular	<ul style="list-style-type: none"> • ATN • Proliferative glomerulonephritis (GN)
Fatty casts/oval fat bodies	<ul style="list-style-type: none"> • Nephrotic syndrome



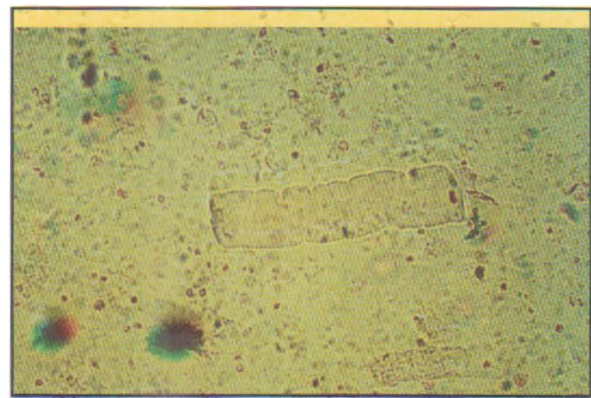
NP1. RBC Cast
Glomerular bleeding.



NP2. RBC Cast
Glomerular bleeding.



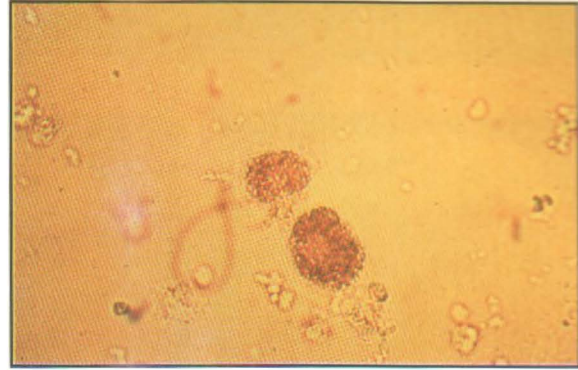
NP3. Heme-Granular Cast
Acute tubular necrosis or proliferative glomerulonephritis.



NP4. Hyaline Cast



NP5. Hyaline Cast



NP6. Oval Fat Bodies

Nephrotic syndrome.



NP7. WBCs



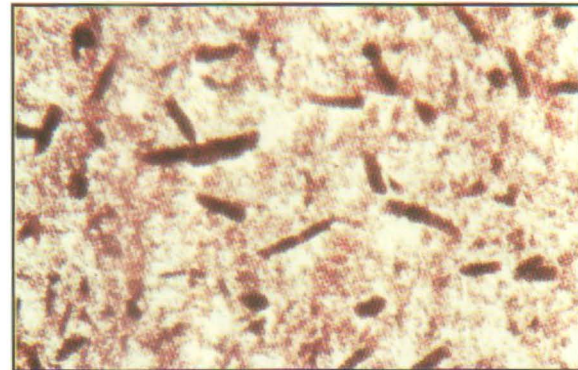
NP8. WBC Cast

Pyelonephritis or interstitial nephritis.



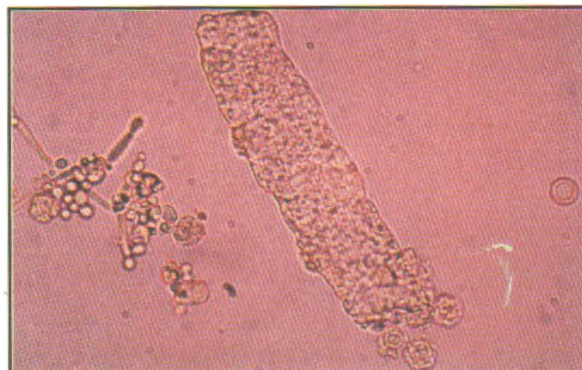
NP9. WBC and Granular Cast

Pyelonephritis or interstitial nephritis.



NP10. ATN: Hemoglobin Casts and Debris

Acute tubular necrosis (ATN).

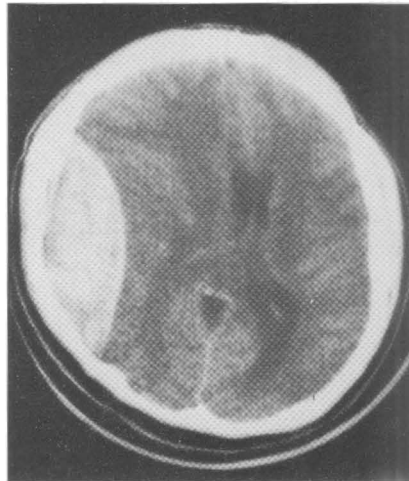


NP11. Broad Granular Cast

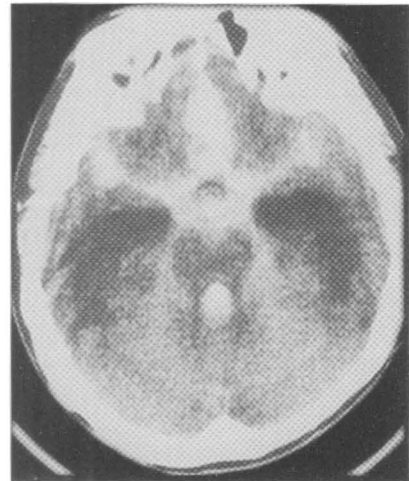
Neurosurgery



NS1. Hydrocephalus
 Ventricular enlargement, periventricular lucency, narrow or absent sulci +/- fourth ventricular enlargement.



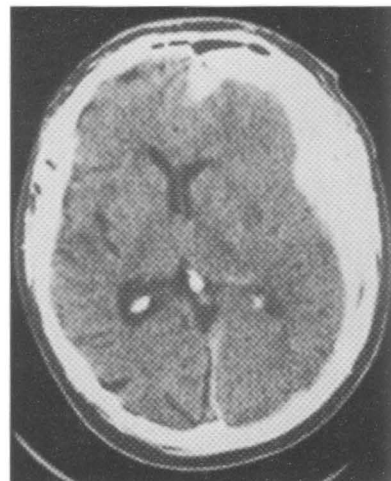
NS2. Epidural Hemorrhage
 Right high density biconvex mass, usually uniform density and sharp margins.



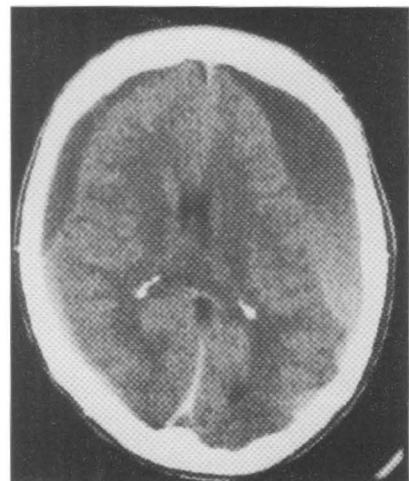
NS3. Subarachnoid Hemorrhage (SAH) CT without contrast showing blood in basal and suprasellar cisterns, interhemispheric and sylvian fissures.



NS4. Subarachnoid Hemorrhage



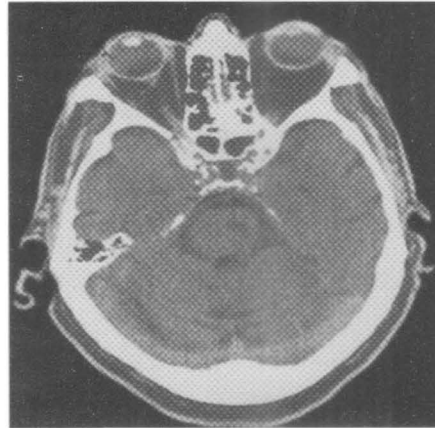
NS5. Acute Subdural Hemorrhage
 Left increased density, concave mass usually less uniform, less dense, and more diffuse than epidural hemorrhage. Note compression of ventricles and midline shift.



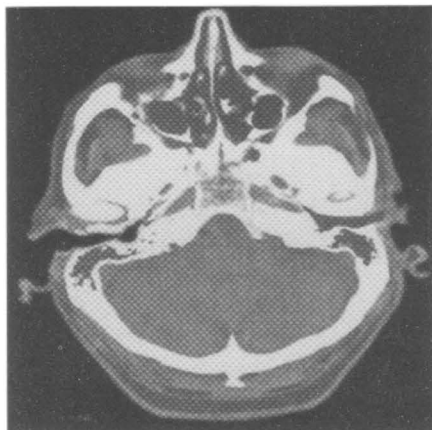
NS6. Chronic Subdural Hemorrhage
 Bilateral hypodense areas representing old blood, mass effect.



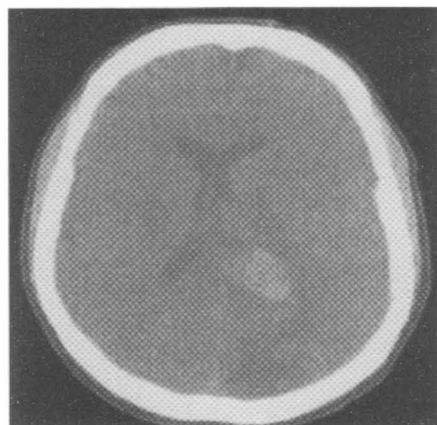
NS7. Chronic Subdural Hematoma (bilateral)
(Courtesy Dr. P. Porter)



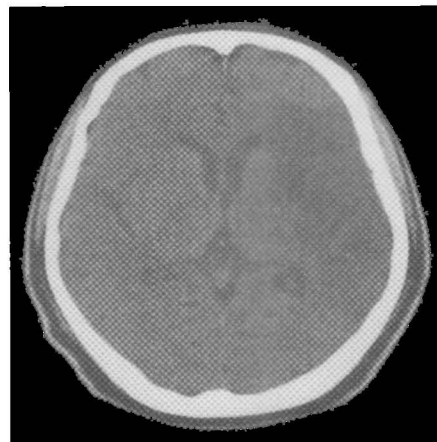
NS8. Left Pons Hypoattenuation



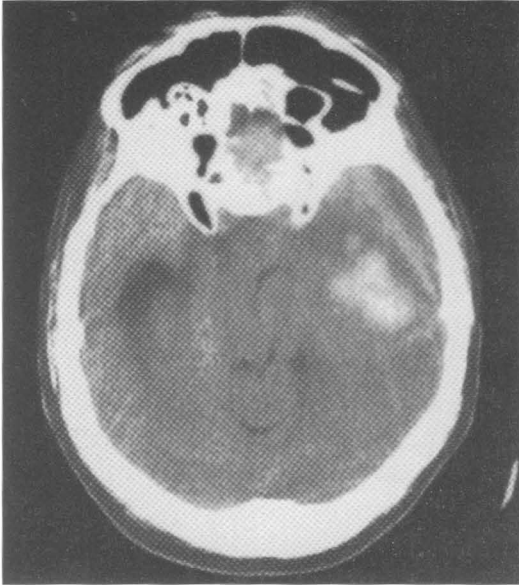
NS9. Right Posterior Fossa Lesion



NS10. Left PCA Infarct



NS11. An Old Large MCA Infarct

**NS12. Left Temporal Contusion**

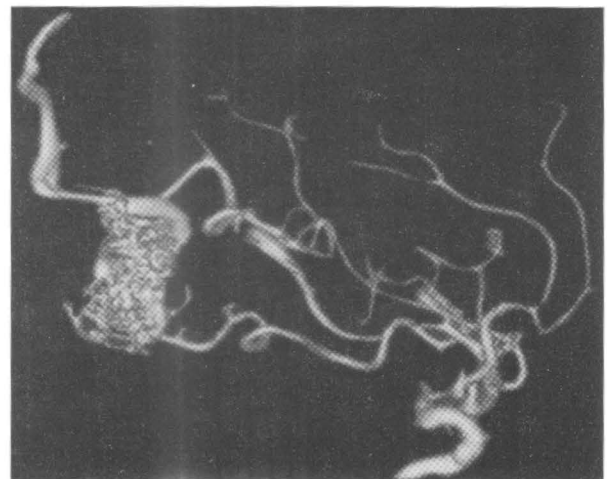
Left temporal contusion with left uncal herniation.
(Courtesy Dr. P. Porter)

**NS13. Right Frontoparietal Abscess**

(Courtesy Dr. P. Porter)

**NS14. Arteriovenous Malformation (AVM)**

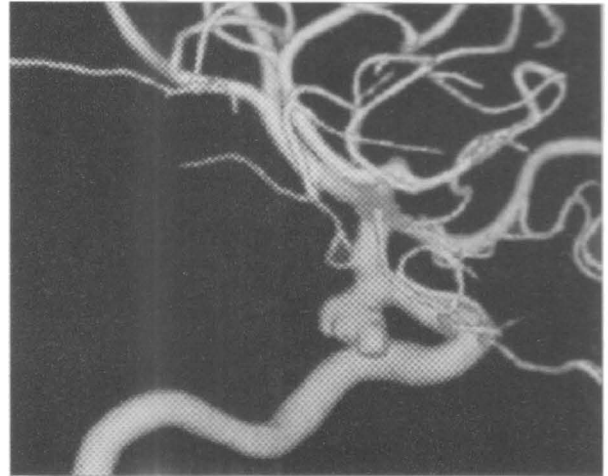
Retractor is indicating junction between arterial and venous blood.
(Courtesy Dr. P. Porter)

**NS15. 3-D Angiogram**

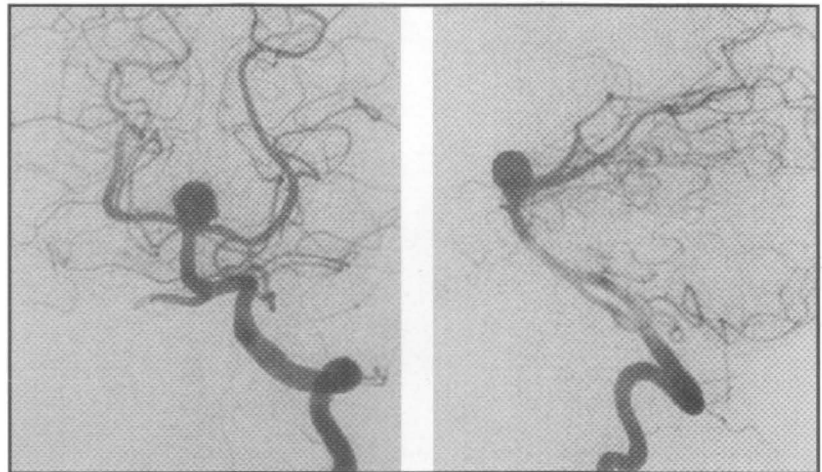
Arteriovenous malformation (AVM).
(Courtesy Dr. P. Porter)



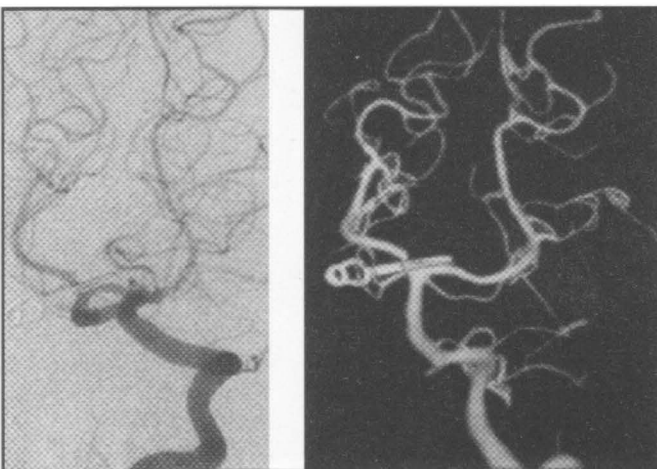
NS16. Intraoperative Arteriovenous Malformation (AVM)
(Courtesy Dr. P. Porter)



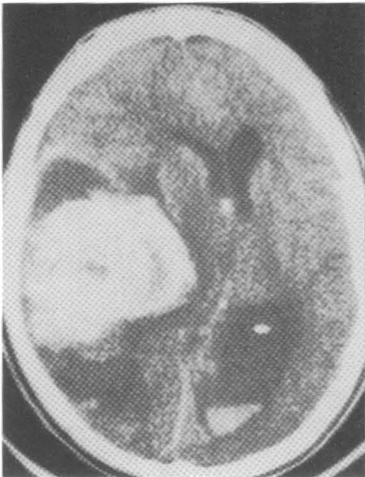
NS17. 3-D Angiogram
3-D angiogram of posterior communicating artery aneurysm.
(Courtesy Dr. P. Porter)



NS18. Angiogram of Basilar Artery Aneurysm
(Courtesy Dr. P. Porter)



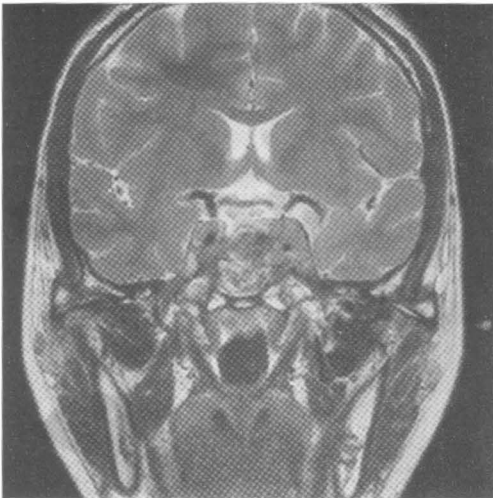
NS19. Angiograms of Basilar Artery Aneurysm Clipped
(Courtesy Dr. P. Porter)



NS20. Intracranial Mass

Large glioma with midline shift and compression of sulci.

(Courtesy Dr. G. Olscamp)



NS21a.



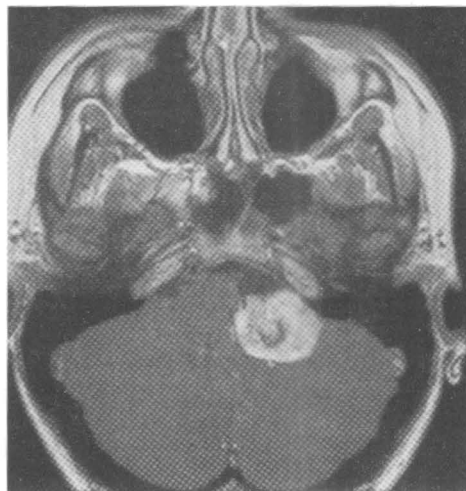
NS21. Pituitary Macroadenoma

(Courtesy Dr. W. Montanera)

NS21b.



NS22a.

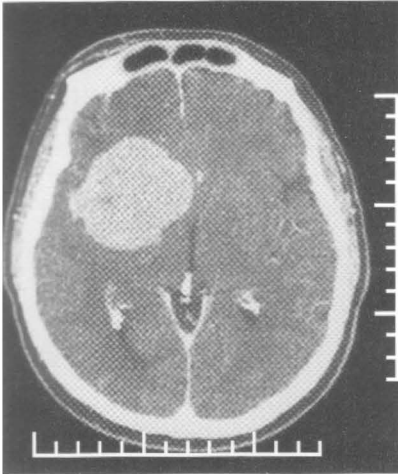


NS22. Vestibular Schwannoma

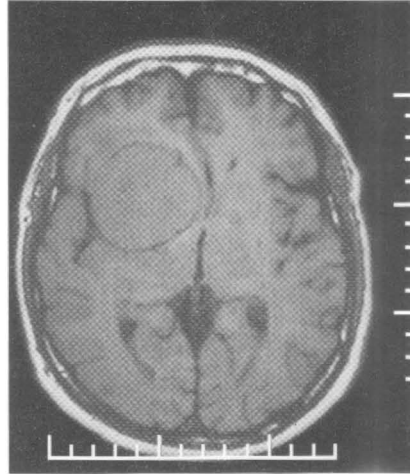
Tumour in cerebellopontine angle.

(Courtesy Dr. W. Montanera)

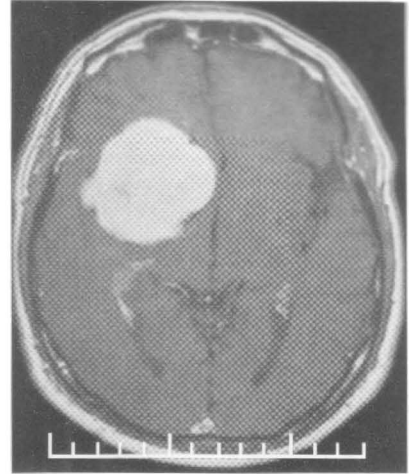
NS22b.



NS23a.



NS23b.



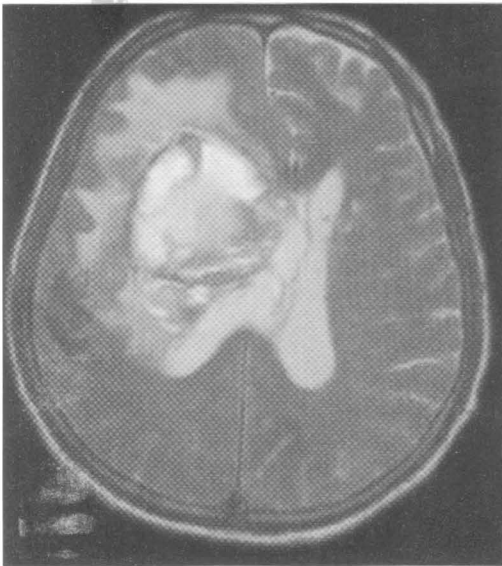
NS23c.

NS23. Meningioma

Well-demarcated, homogeneous, extra-axial lesion.

a) CT b) T1 weighted MRI (Note that the tumour is isointense to the gray matter) c) T1 weighted MRI post contrast.

(Courtesy Dr. W. Montanera)

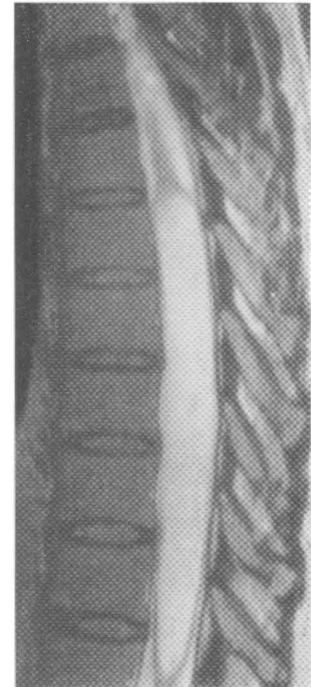
**NS24. Glioblastoma Multiforme**

Large inhomogeneous mass with irregular borders and associated hemorrhage.

(Courtesy Dr. W. Montanera)



NS25a.

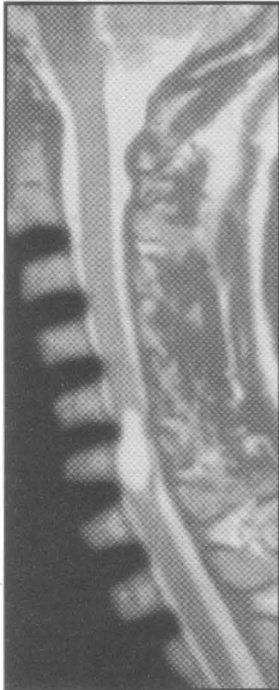


NS25b.

NS25. Astrocytoma

a) T1 and b) T2 weighted MRI of an intramedullary tumour.

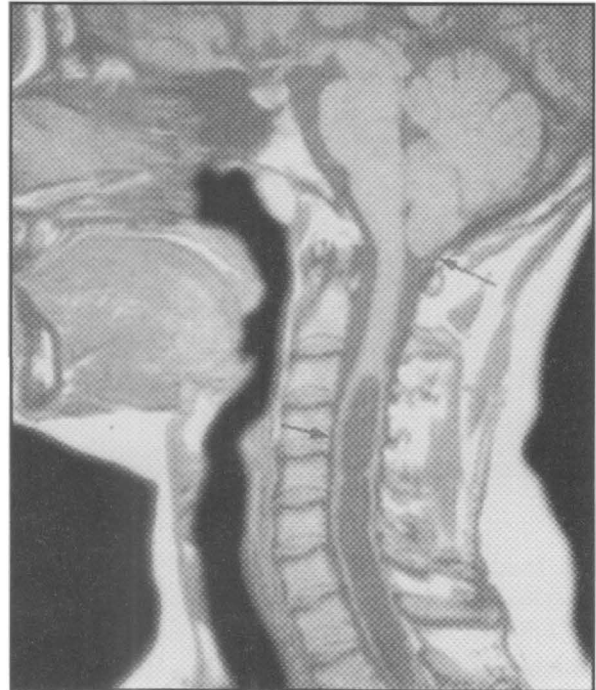
(Courtesy Dr. W. Montanera)



NS26a.



NS26b.



NS26c.

NS26. Syringomyelia

a) T2 weighted MRI b) T1 weighted MRI c) T1 weighted MRI of another case.

(Courtesy Dr. W. Montanera)



NS27a.



NS27b.

NS27. Cervical Disc Herniation

a) T1 and b) T2 weighted MRI of degenerative cervical disc herniation.

(Courtesy Dr. W. Montanera)



NS28a.



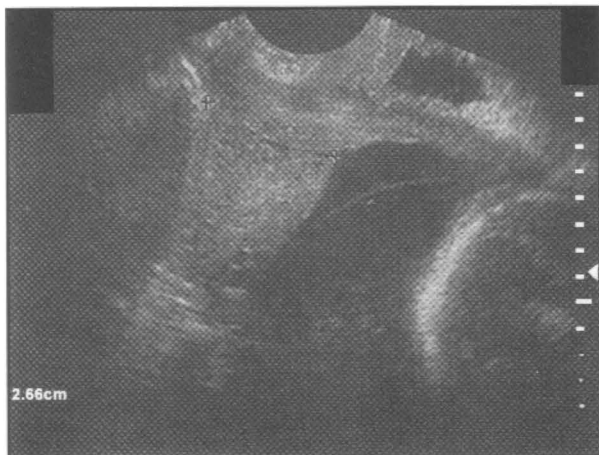
NS28b.

NS28. Disc Herniation

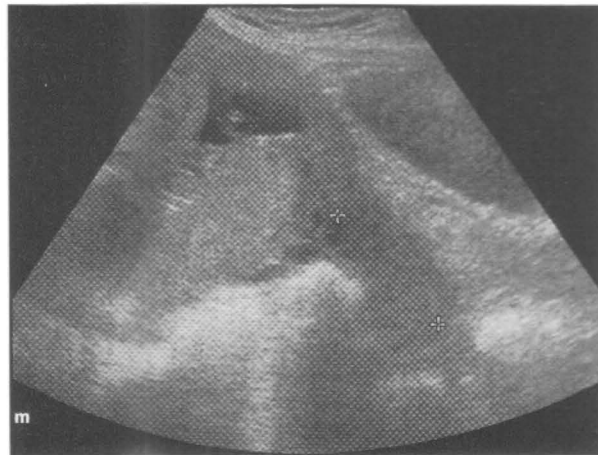
a) Intermediate and b) T2 weighted MRI demonstrating large disc herniation with spinal cord compression.

(Courtesy Dr. W. Montanera)

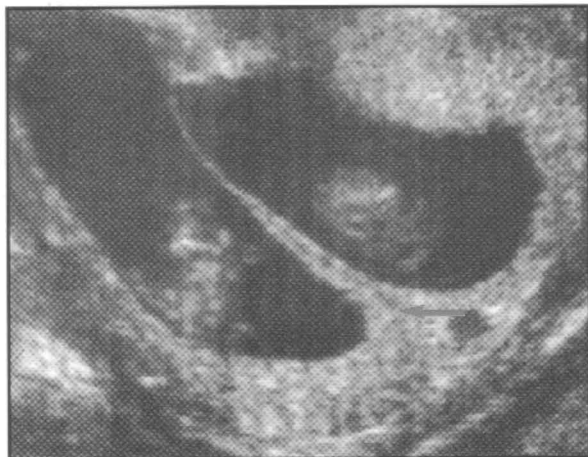
Obstetrics



OB1. Cervix
 (Courtesy of Dr. Seaward and Dr. Ryan, Fetal Medicine Unit, Mt Sinai Hospital)



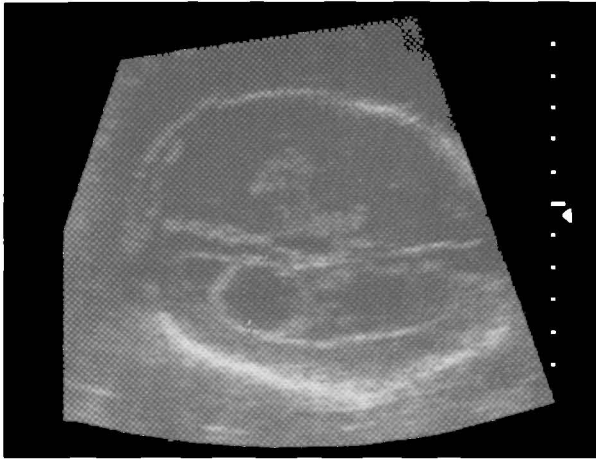
OB2. Placenta Previa
 (Courtesy of Dr. Seaward and Dr. Ryan, Fetal Medicine Unit, Mt Sinai Hospital)



OB3. Dichorionic, Diamniotic Twins
Lambda Sign
 (Courtesy of Dr. Seaward and Dr. Ryan, Fetal Medicine Unit, Mt Sinai Hospital)

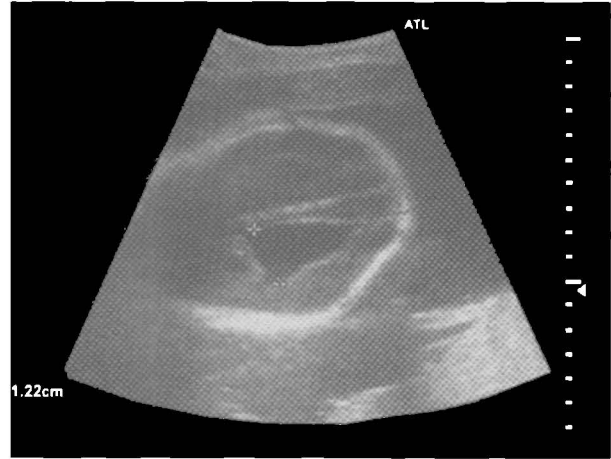


OB4. Monochorionic, Diamniotic Twins
T Sign
 (Courtesy of Dr. Seaward and Dr. Ryan, Fetal Medicine Unit, Mt Sinai Hospital)



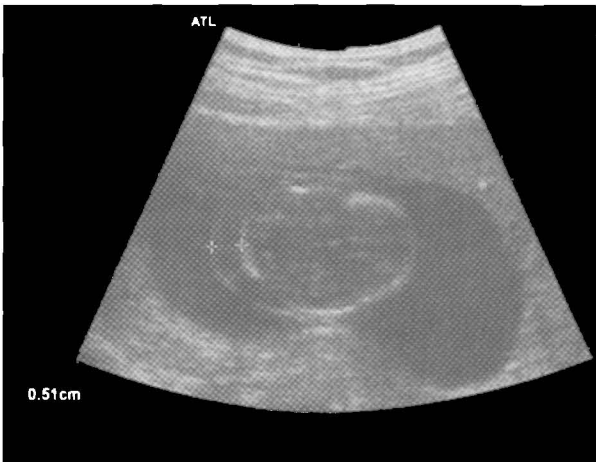
OB5. Choroid Plexus Cyst

(Courtesy of Dr. Seaward and Dr. Ryan, Fetal Medicine Unit, Mt Sinai Hospital)



OB6. Ventriculomegaly

(Courtesy of Dr. Seaward and Dr. Ryan, Fetal Medicine Unit, Mt Sinai Hospital)



OB7. Nuchal Translucency

(Courtesy of Dr. Seaward and Dr. Ryan, Fetal Medicine Unit, Mt Sinai Hospital)



OB8. Nuchal Translucency

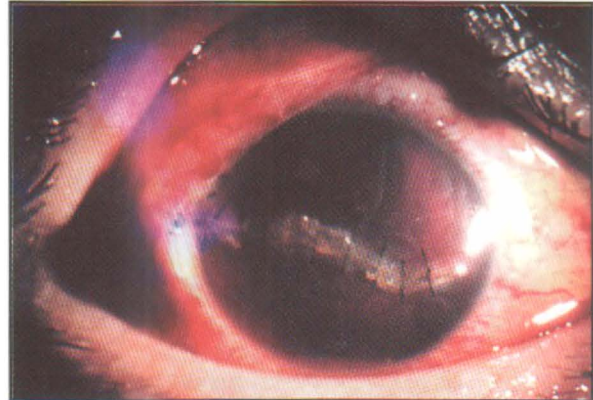
(Courtesy of Dr. Seaward and Dr. Ryan, Fetal Medicine Unit, Mt Sinai Hospital)

Ophthalmology

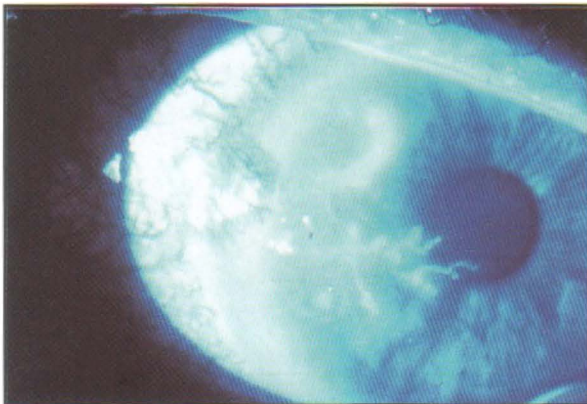


OP1. Dacryocystitis

Erythematous inflammation of the lacrimal sac.

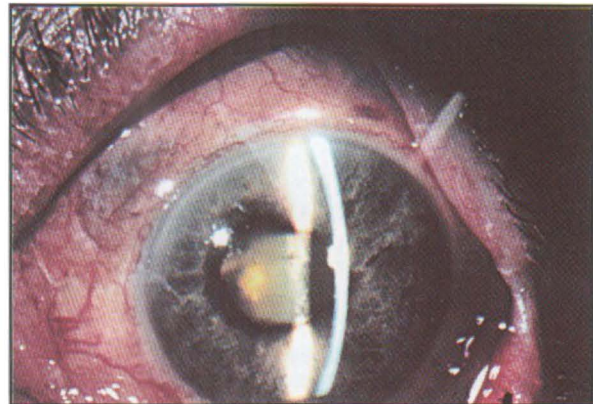


OP2. Corneal Laceration



OP3. Herpes Simplex

Irregular dendritic (branch-like) lesion of corneal epithelium stained with fluorescein.



OP4. Iritis

Ciliary flush and constricted pupil.



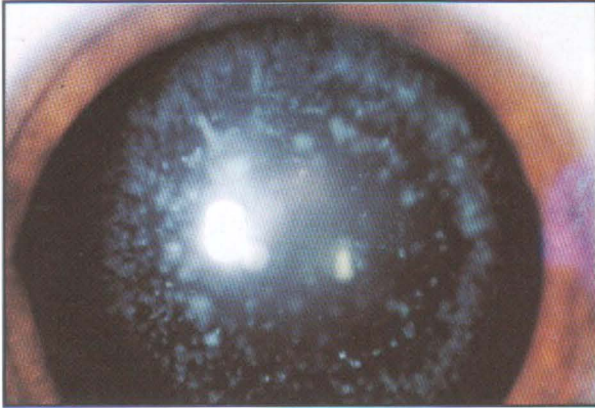
OP5. Foreign Body

Presence of rust ring on cornea after removal of metallic foreign body.

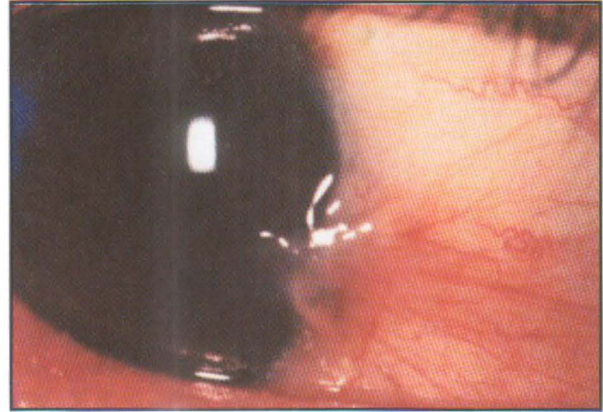


OP6. Endophthalmitis with Hypopyon

Prominent layer of purulent material in inferior aspect of anterior chamber. Note corneal edema and conjunctival injection.

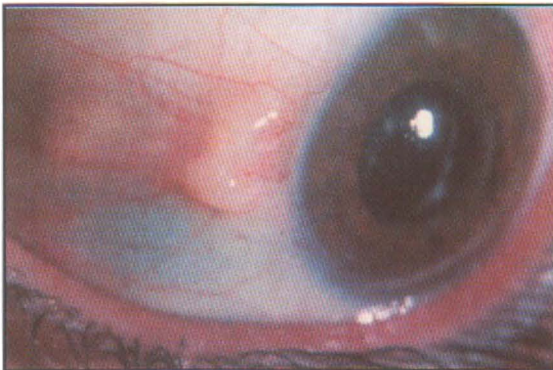
**OP7. Cataract**

Nuclear sclerosis with opacified lens.

**OP8. Pterygium**

Pterygium extends onto the cornea

(Courtesy of Department of Ophthalmology, University of Toronto)

**OP9. Pingueculum**

Pingueculum is degenerative collagen within the interpalpebral fissure.

(Courtesy of Department of Ophthalmology, University of Toronto)

**OP10. Dacryoadenitis**

(Courtesy of Department of Ophthalmology, University of Toronto)

**OP11. Blepharitis**

Blepharitis is characterized by erythema of the lid margins and scales on the lashes.

(Courtesy of Department of Ophthalmology, University of Toronto)

**OP12. Subconjunctival Hemorrhage**

Subconjunctival hemorrhage is evidenced by a bright red colour.

(Courtesy of Department of Ophthalmology, University of Toronto)

**OP13. Viral Conjunctivitis**

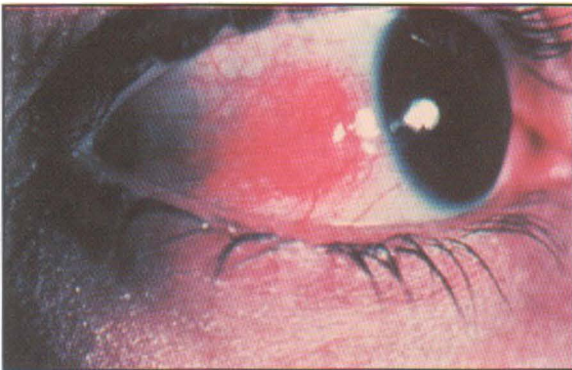
Adenoviral conjunctivitis with lid swelling, conjunctival injection and tearing.

(Courtesy of Department of Ophthalmology, University of Toronto)

**OP14. Viral Conjunctivitis**

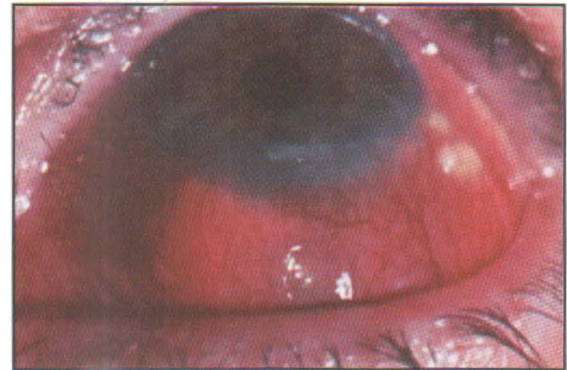
Adenoviral conjunctivitis with lid swelling, conjunctival injection and tearing.

(Courtesy of Department of Ophthalmology, University of Toronto)

**OP15. Episcleritis**

Episcleritis with sectorial injection of the conjunctiva and episcleral tissue.

(Courtesy of Department of Ophthalmology, University of Toronto)

**OP16. Scleritis**

Scleritis with diffuse involvement on the deep episcleral vessels.

(Courtesy of Department of Ophthalmology, University of Toronto)

**OP17. Herpes Zoster Keratitis**

Herpes zoster ephththalmicus with trigeminal nerve distribution.

(Courtesy of Department of Ophthalmology, University of Toronto)

**OP18. Hyphema**

(Courtesy of Dr. Andrew Doan and www.eyerounds.org)

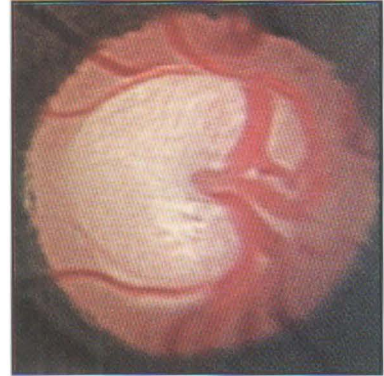
Glaucoma



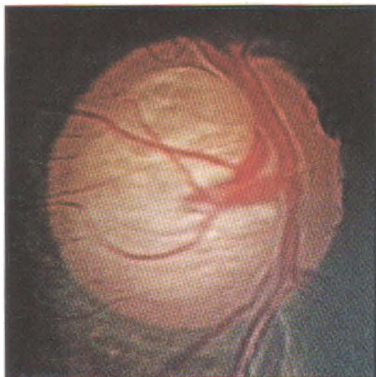
OP19. Optic Disc Enlargement, thinning (or notching) of neuroretinal rim usually beginning inferiorly (as in these discs), deepening of optic cup. Notching thinning of neuroretinal rim tends to occur, inferiorly, then superiorly, then temporally, and nasal is the last one to be affected.
© 2003 Dr. Yan



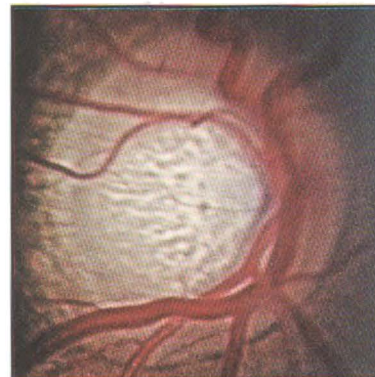
OP20.



OP21. Concentric Enlargement of Optic Disc
Deepening of optic cup.
© 2003 Dr. Yan



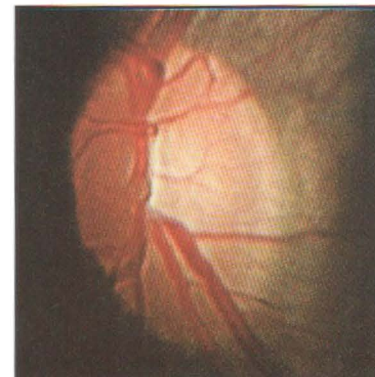
OP22. Concentric Enlargement of Optic Disc
Some inferior and temporal neuroretinal thinning.
© 2003 Dr. Yan



OP23. Optic Disc Enlargement
Slight thinning of neuroretinal rim inferiorly and temporally, deepening of cup, **development of pallor** (late finding of glaucoma).



OP24a.

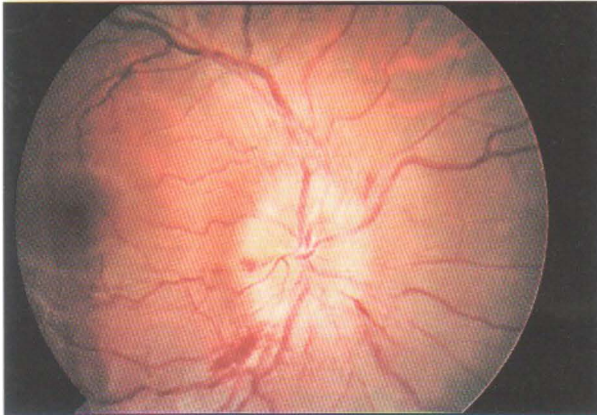


OP24b.

OP24. Tilted Discs

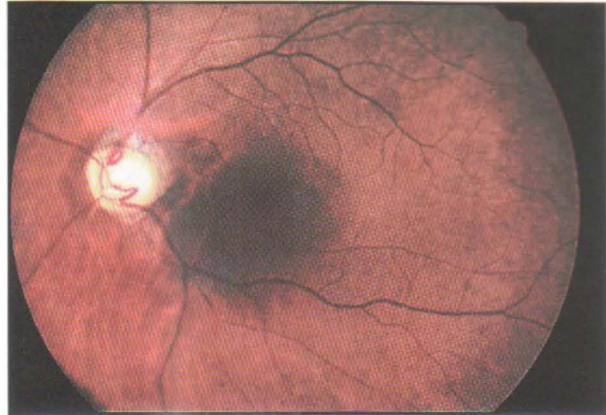
Tilted discs are associated with high myopia or moderate oblique myopic astigmatism. Although tilted discs have no systemic or neurologic association, the visual fields may show bitemporal field defects usually confined to the superior quadrant. Patients with severe myopia should be evaluated by a retina specialist at least once yearly with scleral depression and indirect ophthalmoscopy due to risk of retinal tear and subsequent detachment.

Fundoscopy



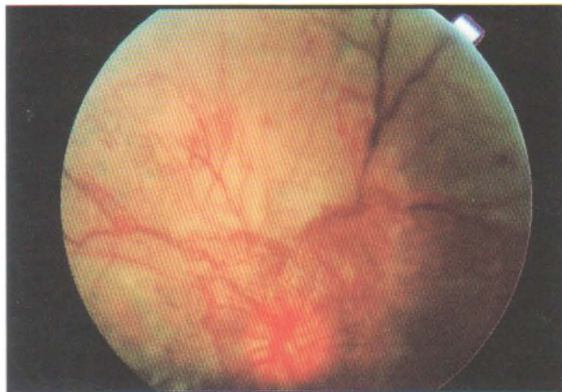
OP25. Papilledema

Elevated congested disc with indistinct margins, flame-shaped hemorrhages, and dilated tortuous vessels.



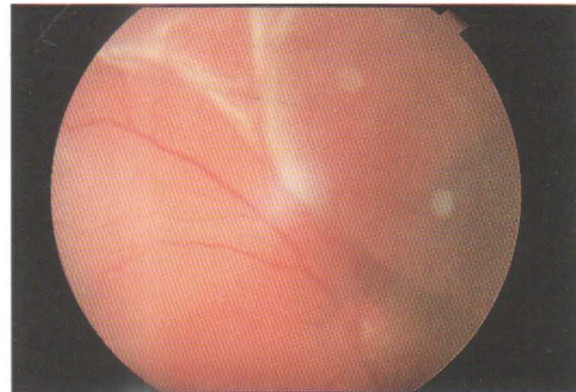
OP26. Optic Atrophy

Pallor of optic disc with sharp margins; attenuated vessels.



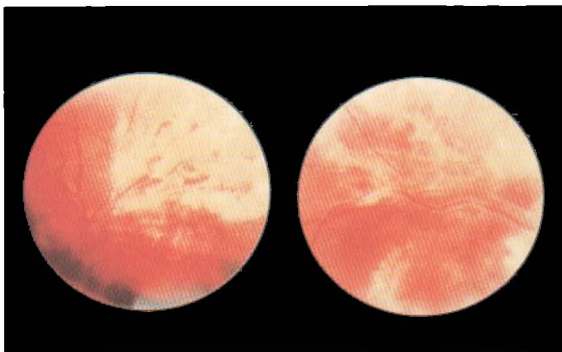
OP27. Proliferative Diabetic Retinopathy

Fan-shaped network of new blood vessels branching onto optic disc (neovascularization). Also note dot hemorrhages and microaneurysms.



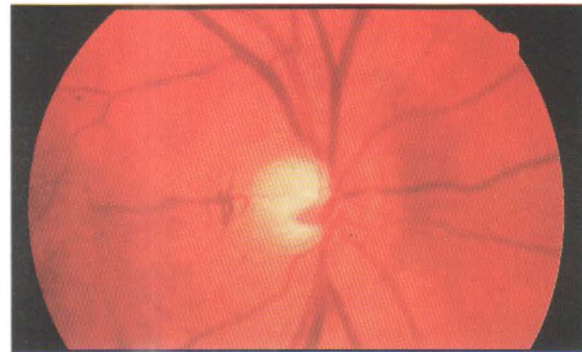
OP28. Retinal Detachment

Bullous retinal detachment with retinal folds on temporal aspect.



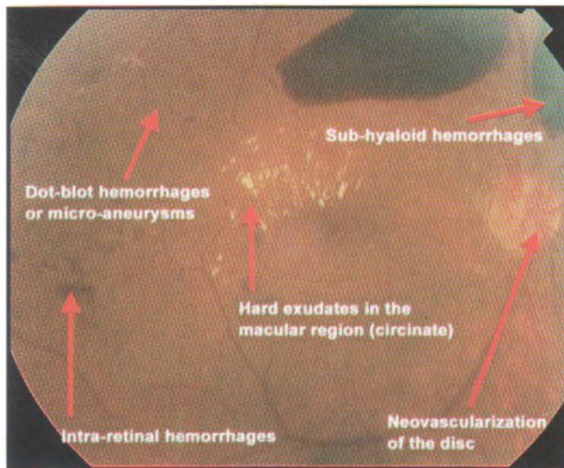
OP29. Cytomegalovirus Retinitis

White exudate surrounding hemorrhages and areas of necrosis. Distinct border between diseased and normal retina.

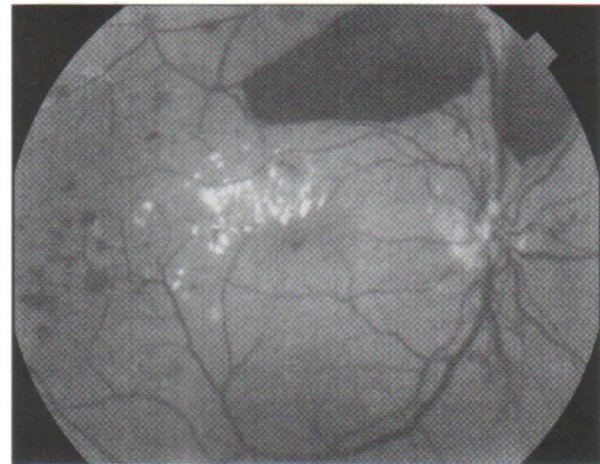


OP30. Glaucoma

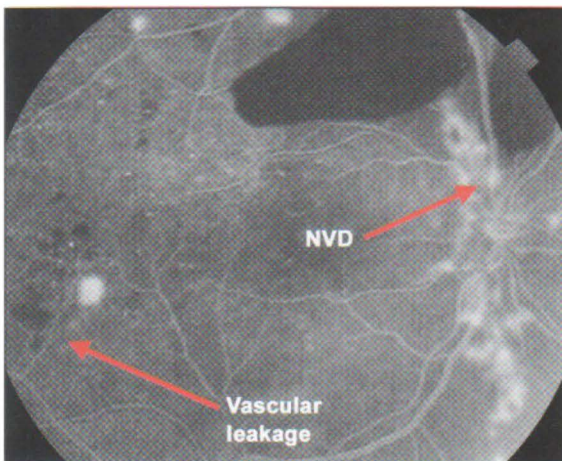
Asymmetrical increase of cup:disc ratio (0.8). Cupping seen where vessels disappear over the edge of the attenuated rim.



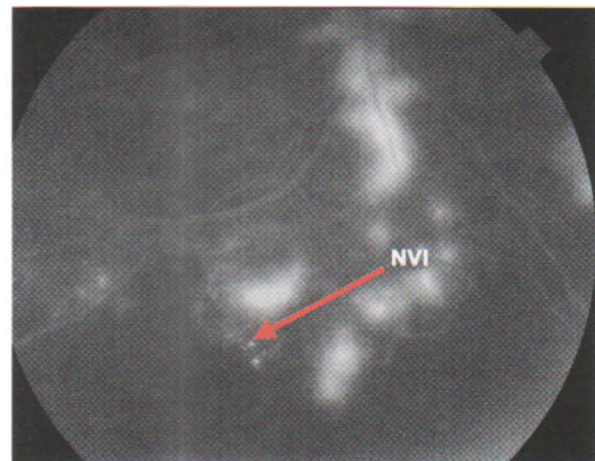
OP31. Photograph of the right eye with advanced proliferative diabetic retinopathy.



OP32. Red-free image of the right fundus of a patient with proliferative diabetic retinopathy as was illustrated previously in the color picture.

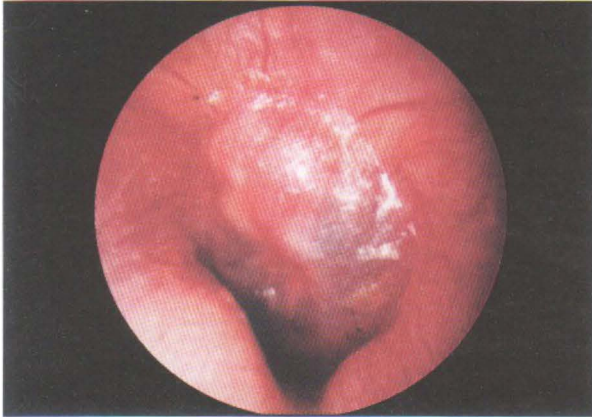


OP33. Early fluorescein angiography picture of the above eye showing areas of vascular leakage near the disc (NVD) and elsewhere (intra-retinal haemorrhages).



OP34. Fluorescein angiography picture of the above eye showing areas of vascular leakage elsewhere (NVE)

Otolaryngology



OT1. Acute Otitis Media (AOM)
Bulging, hyperemic tympanic membrane with indistinct landmarks.



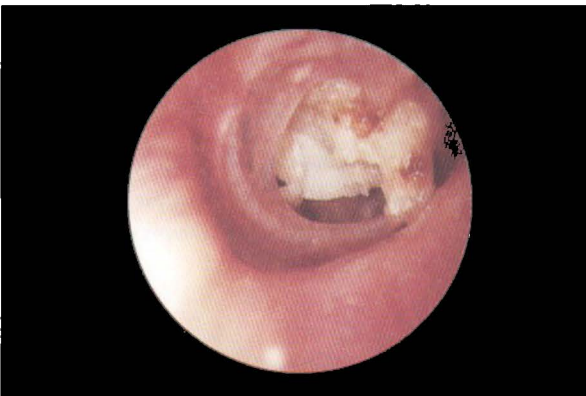
OT2. Serous Otitis Media
Air bubbles and serous fluid behind retracted amber tympanic membrane.
(Courtesy Dr. M. Hawke)



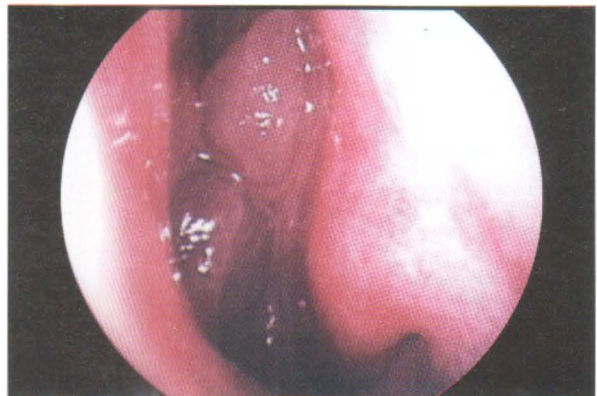
OT3. Tympanostomy Tube
Plastic tube placed in inferior portion of tympanic membrane.
(Courtesy Dr. M. Hawke)



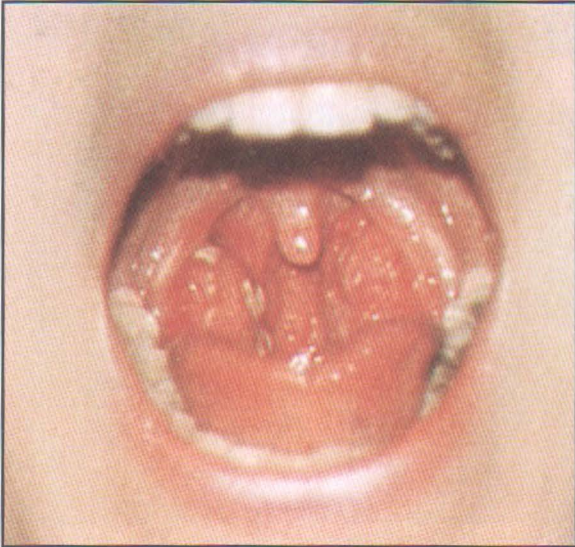
OT4. Perforated Tympanic Membrane
(Courtesy Dr. M. Hawke)



OT5. Cholesteatoma
Cyst-like mass lined with keratinized squamous epithelium and filled with desquamating debris in the middle ear. Progressive enlargement may lead to bony/soft tissue destruction.
(Courtesy Dr. M. Hawke)



OT6. Nasal Polyps
Grape-like swellings hanging down from the sinuses into the nose. They are thought to result from an inflammatory response within the sinus mucosa.
(Courtesy Dr. M. Carr)

**OT7. Exudative Tonsillitis**

Enlarged and inflamed tonsils with purulent exudate in a patient with mononucleosis.

(Courtesy Dr. A. Waitzman)

**OT8. Carcinoma of Tongue**

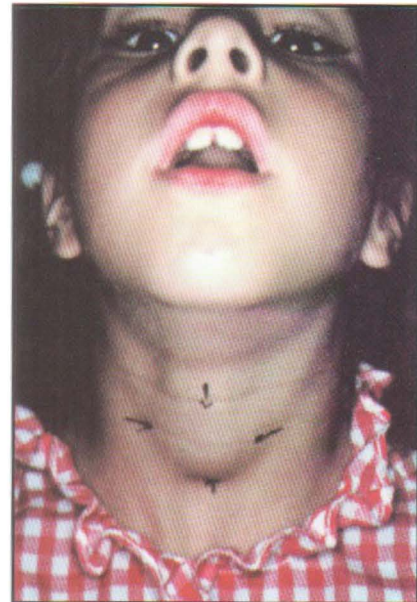
These are almost always squamous cell carcinomas (SCC) and occur as a result of exposure to tobacco, alcohol, and betel nut root.

(Courtesy Dr. D. Brown)

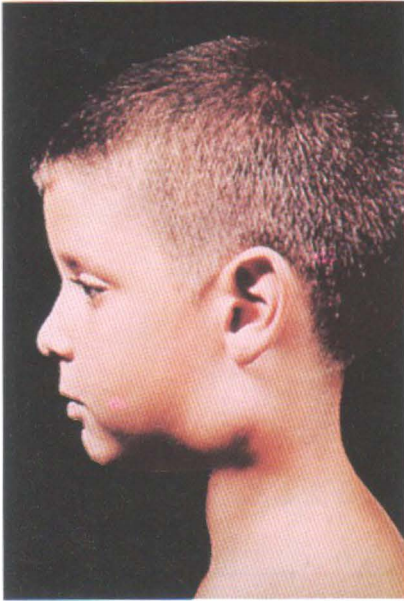
**OT9. Bell's Palsy**

Unilateral right facial nerve paralysis. Note patient smiling with mouth droop and loss of nasolabial fold.

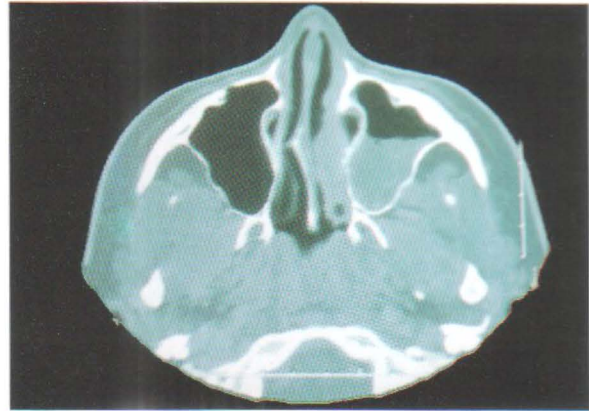
(Courtesy Dr. A. Waitzman)

**OT10. Thyroglossal Duct Cyst**

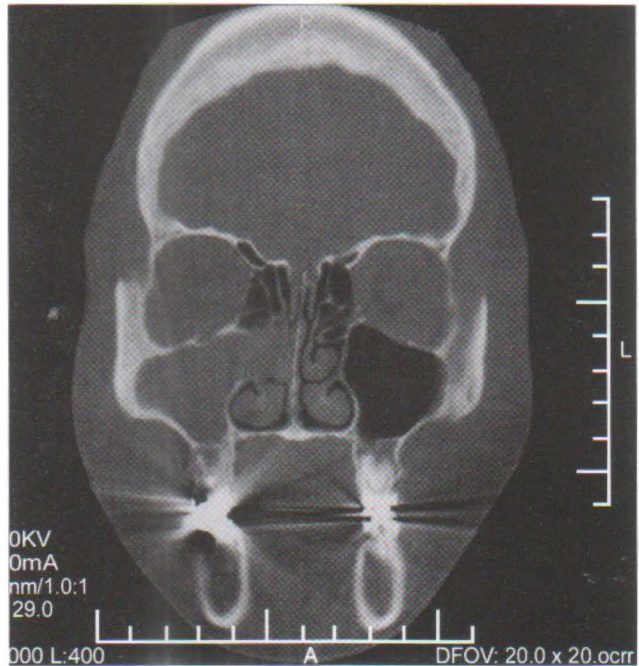
Firm midline mass that moves up and down with swallowing.



OT11. Branchial Cleft Cyst
Persistence of branchial cleft remnant as firm cystic mass in lateral neck.



OT12. Maxillary Sinusitis (Axial CT scan)
Air-fluid level in left maxillary sinus.
(Courtesy Dr. A. Waitzman)



OT13. Maxillary Sinusitis (Coronal CT scan)
Right sided maxillary sinusitis.
(Courtesy Dr. M. Carr)

Pediatrics



P1. Chicken Pox

Maculopapular rash on trunk progressing to vesicles and to crusts.

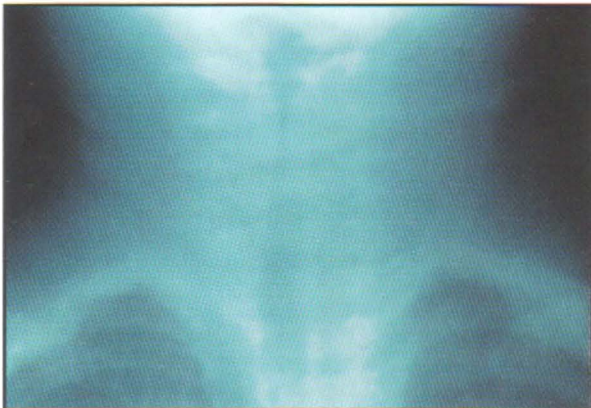
(Courtesy Dr. M. Mian)



P2. Roseola

Diffuse maculopapular rash.

(Courtesy The Hospital for Sick Children Slide Library, Toronto)



P3. Croup

"Steeple sign" showing inflammation of tissues in narrow subglottic space.

(Courtesy Dr. M. Mian)



P4. Epiglottitis

"Thumb sign" showing a swollen epiglottis seen just at level of hyoid bone.

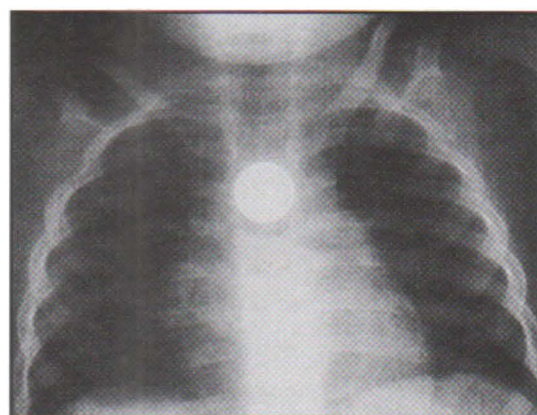
(Courtesy Dr. M. Mian)



P5. Scarlet Fever

Strawberry tongue.

(Courtesy Dr. M. Mian)

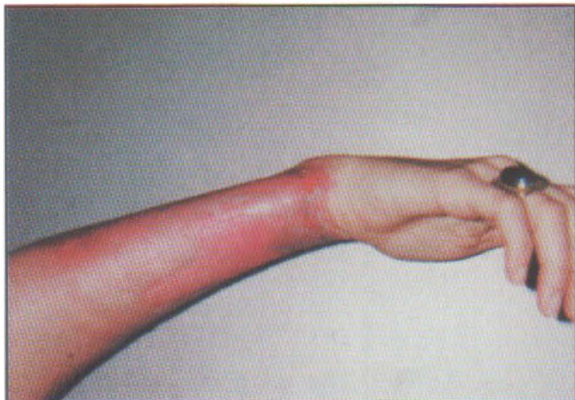


P6. Foreign Body

Coin lodged in esophagus.

(Courtesy Dr. A. Waitzman)

Plastic Surgery



PL1. 1st degree burn

(superficial partial thickness)

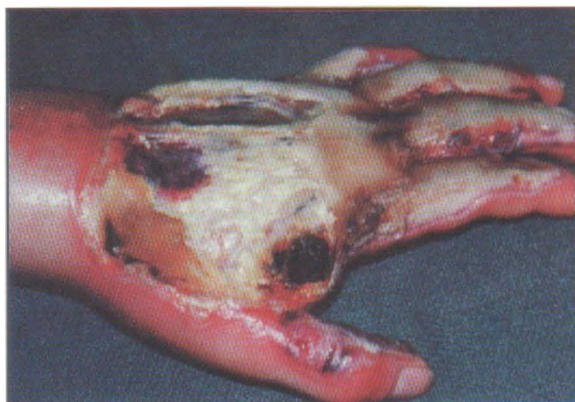
Superficial partial thickness burn to forearm. Note the presence of unroofed blisters.



PL2. 2nd degree burn

(deep partial thickness)

Deep partial thickness burn to palm. The wound has a wet, variable appearance, with both pale and red areas.



PL3. 3rd degree burn

(full thickness)

Full thickness burn to dorsum of hand. Thrombosed vessels and underlying adipose tissue are clearly visible.



PL4. Venous Stasis Ulcer

(Courtesy Dr. A. Freiberg)



PL5. Arterial Ischemic Ulcer

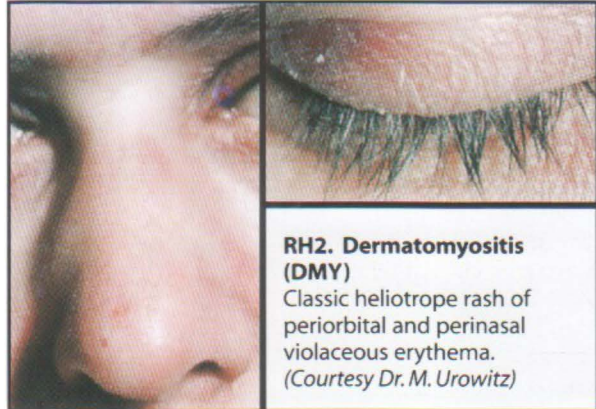
(Courtesy Dr. A. Freiberg)

Rheumatology



RH1. Systemic Lupus Erythematosus (SLE)

Prominent scaly fixed erythema, flat or raised over malar eminences, tending to spare nasolabial folds ("butterfly rash").



RH2. Dermatomyositis (DMY)

Classic heliotrope rash of periorbital and perinasal violaceous erythema.
(Courtesy Dr. M. Urowitz)



RH3. Discoid Lupus Erythematosus

Violaceous, hyperpigmented, atrophic plaques; keratotic scale with follicular plugging and scarring.
(Courtesy Dr. L. From)



RH4. Dermatomyositis (DMY) (Hands)

Erythematous flat-topped scaling papules over the knuckles showing Gottron's papules and periungual telangiectasia.
(Courtesy The Hospital for Sick Children Slide Library, Toronto)

**RH5. Acute Gouty Arthritis**

Classic inflammation resembling cellulitis of the first metatarsophalangeal (MTP) joint, referred to as podagra. The first MTP is the most common site of initial involvement.

(Courtesy Dr. A. Fam)

**RH6. Acute Gout****Monosodium Urate Crystals**

Polarized light microscopy showing monosodium urate crystals. Note the negative birefringence (yellow) of needle-shaped crystals versus the rhomboid-shaped and positively birefringent (blue) crystals of crystal pyrophosphate disease (CPPD).

(Courtesy Dr. A. Fam)

**RH7. Vasculitis**

Note purpuric papules.

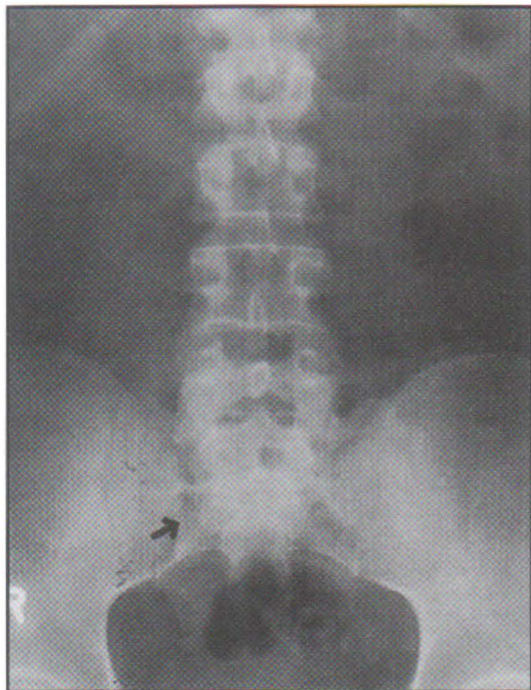
(Courtesy Dr. A. Fam)

**RH8. Scleroderma**

Sclerodactyly showing bilateral swelling, a shiny wax-like appearance, and tapering of the fingers. May also note digital ulcers, nailfold telangiectasia, and periarticular calcinosis. Flexion contractures present in advanced disease.

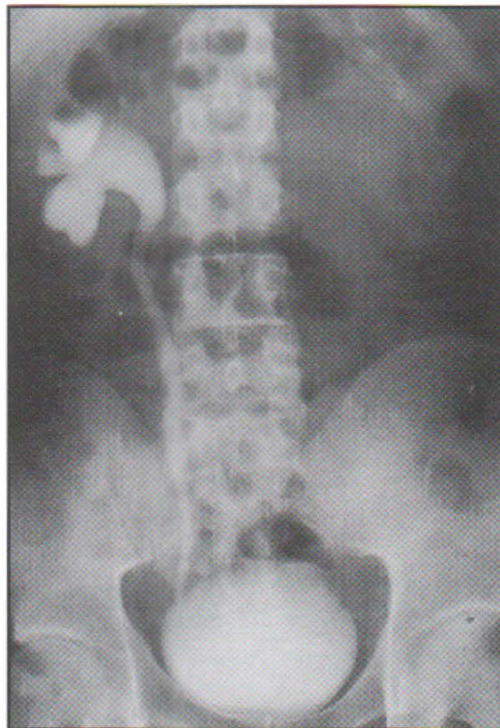
(Courtesy Dr. A. Fam)

Urology



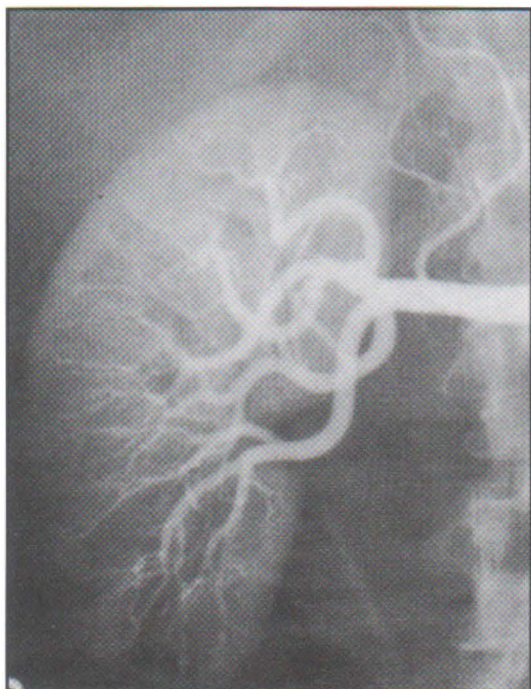
U1. Ureteric Calculus

Small stone seen at right pelvic brim:

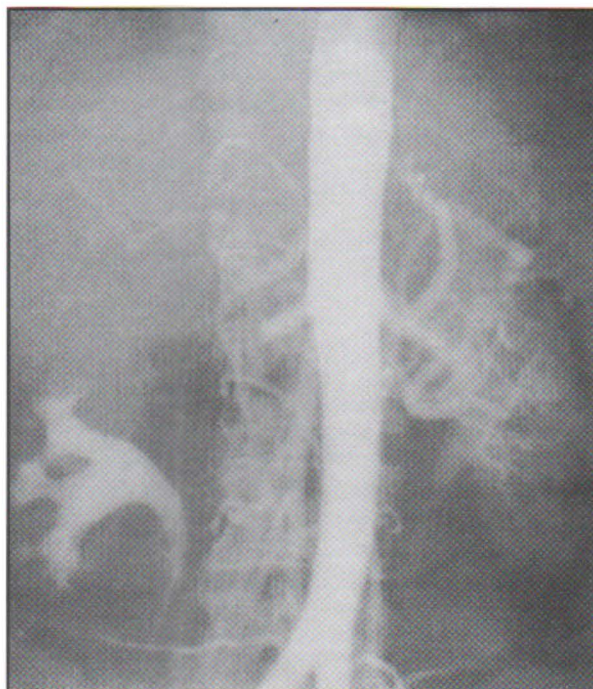


U2. Ureteric Obstruction

Intravenous pyelogram (IVP) (1 hour post-dye injection) showing right hydronephrosis, hydroureter, dilated renal pelvis and calyx.



U3. Normal Renal Arteriogram



U4. Renal Angiogram

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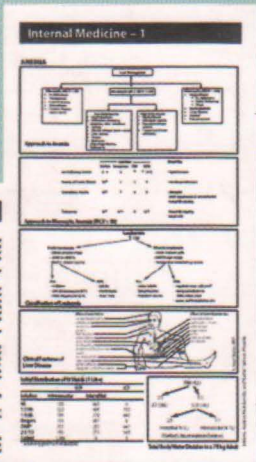
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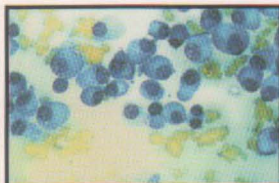
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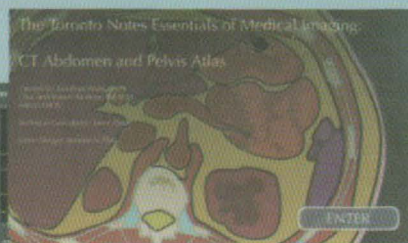
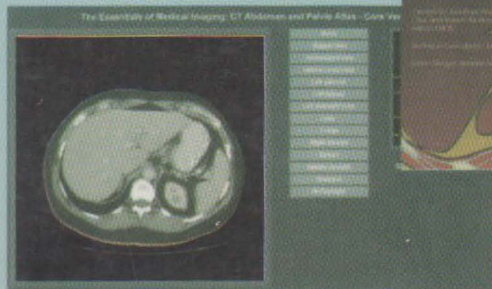
Hematologic Malignancies



M3. Multiple Myeloma (Bone Marrow)
Plasma cells in marrow. Note binucleate malignant plasma cell in center field.



M1B. Chronic Myelogenous Leukemia (CM3)
Increased numbers of granulocytes and their precursors. Note most WBCs are band forms or segmented granulocytes.



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