Digital Imaging in Pathology

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master thesis

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APPENDIX A: GROSS DESCRIPTIVE TERMS AND ACCOMPANYING PHOTOGRAPHS

Abrasión

Description:
Grossly appears as an irregular skin defect, or scraped area of the skin. It is an injury caused by superficial damage to the skin, no deeper than the epidermis. Scarring does not usually occur due to the superficial nature of the wound. In the above photograph, this skin lesion has an abrasion caused by trauma.

Tissues Commonly Affected
Skin

Common Diseases
Usually occurs due to traumatic injury
Abscess/ Purulent/ Suppurating

**Description:**
Grossly appears as a lesion or area of interest which forms pus. Formation of pus is associated with an infectious process and contains digested germs, digested tissue, white blood cells, and enzymes. In the above photograph, there is pus forming from this tissue due to an underlying infection.

**Tissues Commonly Affected**
Can occur in any part of the body.

**Common Diseases**
It is the result of the body's defensive reaction to foreign material.
**Adhesion**

**Description:**
Grossly appears to be an opaque light-tan or grey-tan fibrous bands of scar tissue that form between internal organs and tissues, joining them together abnormally. Adhesions are made up of connective tissue cells that form as a normal part of the body's healing process and help to limit the spread of infection. However, complex inflammatory disorders can arise when adhesions cause the wrong tissues to grow into each other. Adhesions are commonly seen in perforated specimens and as a result of previous surgery. Infection is usually present with this form of exudate. In the above photograph, this large bowel segment has looped around and become adherent onto itself as a result of a perforation.

**Tissues Commonly Affected**

Loops of the intestines, the intestines and other abdominal organs or the abdominal wall, abdominal organs such as the liver or bladder and the abdominal wall, tissues of the uterus.

**Common Diseases**

Ashermans’s syndrome, post-surgical complications
**Apple-core**

**Description:**
Grossly appears as a lesion that is a relatively short, sharply defined region of circumferential, annular, constricting colonic narrowing with overhanging margins. Most commonly, this lesion is an adenocarcinoma arising in the large intestine, but can present as a tumor in the esophagus. In the above photograph, this apple-core lesion is present in the mucosa of the large intestine.

**Tissues Commonly Affected**
Large intestine, small intestine, esophagus

**Common Diseases**
Adenocarcinoma
Annular/ Circinate

**Description:**

Grossly appears as any lesion or gross area of interest which is shaped like or forming a ring. An annular lesion is likely to be indicative of an inflammatory process or malignant process. In the above photograph, this raised annular lesion is present in the colonic mucosa.

**Tissues Commonly Affected**

Mucous membranes, skin

**Common Diseases**

Colonic adenocarcinoma, dermatophytosis, sarcoidosis, tinea
**Anthracotic pigment**

**Description:**

Grossly appears to be dark tan-to-black diffuse pigmentation on the surface of the specimen.

Anthracosis is an accumulation of carbon pigment from breathing dirty air. Smokers have the most pronounced anthracosis, but can be seen in the majority of urban dwellers. Anthracotic pigment is pronounced but it causes no major organ dysfunction. In the above photograph this lung has diffuse anthrocotic pigmentation.

**Tissues Commonly Affected**

Lungs, Mediastinal lymph nodes

**Common Diseases**

Resulting from smoking, living in urban areas with high pollution rates.
**Asymmetrical**

**Description:**
Grossly appears as any lesion organ or area of interest which has a lack or absence of symmetry.

Asymmetrical specimens exhibit a dissimilarity in corresponding parts or organs on opposite sides of the body that are normally alike. In the above picture, this thyroid lacks symmetry between the right and left lobes. The right lobe (left side of the picture), with the stitch, shows normal thyroid appearance whereas the left lobe is more lobulated and irregular. Therefore this thyroid gland is asymmetrical in appearance.

**Tissues Commonly Affected**
Any organ or tissue that is bilateral or has right/left hemispheres.

**Common Diseases**
Any disease process including tumours, inflammation and edema
Bilateral

Description:
This refers to any gross appearance involving both the left and right sides of the body. Commonly refers to paired organs which are on opposite sides of the body, such as kidneys, parotid glands, etc. However, this term can be used when necessary to describe conditions and procedures which affect both body sides. For example, a common procedure is the bilateral mastectomy. In the above photograph, the removal of both ovaries and fallopian tubes would be described as a bilateral salpingo-oophorectomy.

Tissues Commonly Affected
Any organ which exhibits bilateral symmetry such as the kidneys, adrenal glands, thyroid, ovaries and lungs.

Common Diseases
Pulmonary embolism, thyroiditis, polycystic kidney disease, arthritis, Addison disease
Bile-stained

**Description:**
Grossly appears to be a clear yellow, or green to dark green appearing fluid that is absorbed into the lining or mucosa of the specimen. It is a fluid that originates in the liver and is concentrated and stored in the gallbladder, and is spilled into the small intestine via the bile ducts when needed for digestion. The picture above shows a gallbladder with green bile staining on the mucosa.

**Tissues Commonly Affected**
Gall bladder, small intestine, peritoneal cavity, stomach

**Common Diseases**
Bile stained vomit in infants (bilious vomiting), gall bladder or liver disease if found in the peritoneal cavity
Bivalved

Description:
Bivalving refers to the cutting of the specimen into two equal halves. This procedure usually occurs after the intact specimen has arrived in the pathology lab for routine processing. The purpose is to examine the internal contents of the specimen. Additionally, specimens may be bivalved to help facilitate the formalin fixation process of pathologic specimens. In the above photograph, this soft tissue lesion has been bivalved to show the cut surface.

Tissues Commonly Affected
Any tissue removed from the body and sent to the pathology department.

Common Diseases
None – refers to a surgical or pathologic procedure done to the specimen.
Blister

**Description:**

Grossly appears to be a localized swelling of the skin that contains watery fluid. Blisters are a saccular skin vesicle filled with serous fluid, which separates the epidermis and/or dermis, and can be linked to shearing forces caused by trauma, burn, or a vesicatory agent. The above photograph shows a blister on the dorsum of the foot due to trauma.

**Tissues Commonly Affected**

Skin, mucosa

**Common Diseases**

Trauma, burning, infection, or irritation.
**Bosselated**

![Image of bosselated tissue](image)

**Description:**
Grossly appears as marked by numerous bosses or rounded protuberances. This is a term usually reserved for describing the surface of specimens. Underlying tumours are usually responsible for this appearance. In the above photograph, this skin surface appears bosselated due to the underlying tumour.

**Tissues Commonly Affected**
Skin, Serosal and Organ surfaces.

**Common Diseases**
Malignant or Benign Tumours, Leiomyomas, edema
Botryoid

Description:
Grossly appears as numerous rounded protuberances. They can be either fluid-filled cystic structures or solid, but are most commonly seen in a translucent or transparent state. Most commonly described as “a bunch of grapes” or as grape-like clusters. In the above photograph, this molar pregnancy has a diffuse botryoid appearance.

Tissues Commonly Affected
Soft tissue tumors, molar pregnancies, polyps

Common Diseases
Molar pregnancy, Odontogenic cyst, Sarcoma botryoides/ botryoid sarcoma/ botryoid rhabdomyosarcoma
Bulla

**Description:**

Grossly appears as a large vesicle or blister (>5mm in size). Similar to a in contents and appearance, the term is generally reserved for blisters of a larger size. Additionally, bulla is often used to describe thin walled balloon-like extensions or air sacs that are commonly found in lungs. In the above photograph, this fallopian tube has a large bulla.

**Tissues Commonly Affected**

Skin, lung

**Common Diseases**

Trauma in the skin. Emphysema/COPD and spontaneous pneumothorax in the lung.
**Calculi/ Calculus**

**Description:**
Grossly appears as a firm, stone-like objects that occupy lumens or vessels. Calculi are abnormal stones formed in body tissues by an accumulation of mineral salts. Calculi are usually found in biliary and urinary tracts. In the above photograph, this ovoid calculi was found in a gallbladder.

**Tissues Commonly Affected**
Gallbladder, kidneys

**Common Diseases**
Cholelithiasis, renal calculi
Caseous

**Description:**
Grossly appears to be a lesion or area of interest which is cottage cheese-like with necrotic material. Caseous lesions have the mixture of fat and protein that appears in some body tissues undergoing necrosis. Infection is often present in the gross appearance of these specimens. In the above photograph, this lesion exhibits a classic caseous and necrotic appearance.

**Tissues Commonly Affected**
Lung,

**Common Diseases**
Infections such as tuberculosis, central necrosis in malignant tumours.
Centrally-located

Description:
This term refers to the appearance of a lesion or landmark which occupies the central space of the overall specimen. In the above photograph, the nipple on the skin surface appears in the middle of the skin ellipse, and thusly is referred to as “centrally located”.

Tissues Commonly Affected
Any

Common Diseases
N/A
Chalky

**Description:**
Grossly appears to be an opaque tan or white-tan soft material occupying spaces or surfaces of a specimen. It is usually indicative of defective calcification or fatty necrosis. This term is also often used to describe the unique gross features of a person inflicted with Gout (as above).

**Tissues Commonly Affected**
Toes, soft tissues, teeth.

**Common Diseases**
Gout, acute pancreatitis, Onychomycosis, enamel hypoplasia
Circular/ Donut

**Description:**

This term can be used to refer to the shape of the lesion, or of the specimen itself. In the above picture, this is a cross-section of the large bowel, exhibiting all of the mucosal and muscular layers.

**Tissues Commonly Affected**

Any

**Common Diseases**

N/A
Circumferential

Description:
Grossly appears as any lesion or area of interest which is encircling and/or pertains to a circumference or perimeter of the specimen. This term is often reserved for how a lesion or gross appearance is in relation to specimens with a lumen, such as the intestinal tract of a specimen. In the above specimen, there is a tumour mass which occupies the entire lumen, and is called entirely circumferential.

Tissues Commonly Affected
Luminal structures, such as the GI tract.

Common Diseases
Tumours, objects causing obstruction.
Circumscribed

**Description:**

Grossly appears to be within a well-defined area, or in one with definite boundaries or limits. This term is usually used to describe the appearance of the lesion within the specimen. Well-circumscribed lesions are most likely, but not defining, a benign lesion. In the above photograph this parotid tumour is well circumscribed.

**Tissues Commonly Affected**

Any

**Common Diseases**

Lipoma, adenomas, leiomyomas,
**Clot/Thrombus**

**Description:**
Grossly appears as a dark-red, soft, insoluble, jelly-like mass. Clots are soft, nonrigid, insoluble masses formed when blood or lymph coagulates. Clots can be healthy and lifesaving when they stop bleeding. However, abnormal blood clots can cause a heart attack, stroke, or other serious medical issues. In the above photograph, this kidney has a clot which is impairing the regular function of the organ.

**Tissues Commonly Affected**
Vessles, major organ systems.

**Common Diseases**
Deep vein thrombosis, stroke, myocardial infarction, Thrombosis
Coalescing

**Description:**
Grossly appears as any lesion with two or more areas adherent or attached to each other due to a pathologic process. Coalescing lesions have a joining or fusing of parts. In pathology, it is commonly observed as numerous raised nodules that often appear in groups on the skin surface of the knees, elbows, and lower extremities. The nodules coalesce to form a large patch that appears to be a single lesion. In the above photograph, these liver lesions have come together to form a coalescing appearance.

**Tissues Commonly Affected**
Any area affected by multifocal disease

**Common Diseases**
Any gross malignant tumour
Cobblestone

**Description:**

Grossly appears as a morphology or pattern characterised by multiple, similarly-sized rounded densities that project from a single linear surface that rises above a flattened plane. A characteristic cobblestoning refers to the uniform nodules, due to the submucosal edema, with crisscrossing of the ulcers through inflamed but intact intestinal mucosa. The above photograph is a typical gross representation of Crohn’s disease cobblestone pattern.

**Tissues Commonly Affected**

GI tract.

**Common Diseases**

Crohn’s disease, Ulcerative colitis
Congested

Description:
Grossly appears as a lesion or area of interest with dark blue-to-purple dense tissue. The tissue is characterized as having an excessive accumulation of a substance such as blood. Congestion may be the result of increased production of the substance and/or outflow of the substance. It also can result from a decreased ability of the heart to pump, leading to lung congestion. In the above photograph, this ovary has become deeply congested due to a torsion.

Tissues Commonly Affected
Any

Common Diseases
Infarct, torsion
Crystaline

**Description:**
Grossly refers to lesion or area of interest which has a clear, transparent mineral, glass or crystal-like appearance. The shape is formed with plane faces intersecting at definite angles. Most often identified with calculi, or crystal forming diseases. The above gallbladder calculus has a crystalline appearance.

**Tissues Commonly Affected**
Gallbladder, kidney

**Common Diseases**
Cholelithiasis, kidney stones
Description:
Grossly appears as an abnormal membranous sac containing a gaseous, liquid, or semisolid substance. Cystic structures are abnormal structures that can develop in any body structure. The above picture represents a cyst with both liquid and a semisolid appearance. The appearance of solid structures in cysts may be indicative of a malignant process.

Tissues Commonly Affected
Any, but are most common in ovaries and skin.

Common Diseases
Ovarian cysts, dermoid cysts, blood cysts, hydatid, pilar cysts, sebaceous cysts
Cylindrical

Description:
Grossly appears as any lesion or gross appearance that relates to, or has the shape of a cylinder, especially of a circular cylinder. In the body, there are many structures which have a lumen and are referred to as cylindrical in shape. In the above photo, this fallopian tube has a typical, cylindrical appearance. The section on the left exhibits a cross section, showing the lumen.

Tissues Commonly Affected
Appendix, fallopian tube, vas defrens

Common Diseases
N/A
**Defect**

![Image of a defect in a specimen]

**Description:**
Grossly appears as an imperfection in what is normally presented in the specimen. Defects are usually associated with trauma that has been incurred on the specimen whether as a reason or consequence of the surgery. In the above photograph, the serosal surface of the uterine fundus has been torn by the surgeon upon surgical removal of the specimen.

**Tissues Commonly Affected**
Any

**Common Diseases**
Trauma
Dense/ Solid

Description:
Grossly refers to the compactness of a substance. They appear as a dense body, figure, structure, or substance that has length, breadth, and thickness, is not a liquid or a gas, contains no significant cavity or hollowness, and has no breaks or openings on its surface. Often, tissues can present as dense or solid due to a desmoplastic response to chronic inflammation and/or tumours. This results in a firm, homogenous appearance. Both benign and malignant tumours can have a solid appearance. In the above photograph, this ovarian fibrothecoma has a dense, yellow appearance.

Tissues Commonly Affected
Any, but common in breast, and colon

Common Diseases
Chronic inflammation, tumours, desmoplastic response, Fibrothecoma, Fibroids, Fibroma, Fibromatosis
Degeneration

Description:
Grossly appears as necrosis, or areas of solid, uninvolved tissue with central or peripheral necrosis. Degeneration is the hallmark of tissues, cells or organs with gradual deterioration, impairment or loss of function, caused by injury, disease, or aging. This is often seen grossly in large tumour masses which have outgrown their blood supply. In the above photograph, this malignant tumour has central, cystic degeneration because it has outgrown its blood supply.

Tissues Commonly Affected
Any

Common Diseases
Malignant tumours, areas with decreased vascular supply.
Demarcated

Description:

Grossly appears as a lesion or area of interest with an abrupt end of one appearance of the specimen with sharp transition to another gross appearance. The term refers to a separate or distinguishing between areas with otherwise unclear boundaries. It may be indicative of a disease process with sharp transition to normal appearing area of that particular organ. In the above picture, there is sharp demarcation of hemorrhagic colon mucosa to normal appearing bowel mucosa.

Tissues Commonly Affected

Any, but most commonly seen in the GI tract

Common Diseases

Ischemia, Inflammatory bowel disease
Diffuse

**Description:**
This term can refer to a disease process that is spread out, or distributed across the specimen. The pattern of distribution may or may not be even and is not concentrated in one place. A diffuse distribution of a lesion may be indicative of local metastasis in malignant lesions. The above picture shows a diffuse pattern of petechial-type lesions on a skin surface.

**Tissues Commonly Affected**
Any

**Common Diseases**
Melanoma, Infectious diseases (TB)
Dilated

**Description:**
Grossly appears as a widening or expansion of a particular area in the specimen. Dilation is usually reserved for luminal structures of the body including vessels and areas of the GI tract. In the above photograph, the dilated areas are air sacs and vessels in the lung. Dilation can be attributed to increased vascular flow in vessels or obstructions in luminal structures.

**Tissues Commonly Affected**
GI tract, vessels, fallopian tubes

**Common Diseases**
Emphysema, obstructions due to clots, inflammation, tumours, etc.
**Discoloration**

**Description:**
Grossly appears as an alteration in color from the normal appearance of the specimen.

Discoloration can be attributed to a variety of disease processes. In the above photograph, the kidney surface has a focal area of hemorrhagic discoloration which can be indicative of an underlying disease process such as an infarct of the vasculature or tumour involving the parenchyma of the specimen.

**Tissues Commonly Affected**
Any

**Common Diseases**
Ischemia, Infarct
Distended

**Description:**
Specimens which are distended appear as stretched or swollen caused by internal pressure. In the above photograph, this large bowel specimen is distended due to trapped gas in the lumen, causing expansion of the luminal space and stretching of the bowel wall.

**Tissues Commonly Affected**
GI tract

**Common Diseases**
Irritable Bowel syndrome, Bowel obstruction, Lactose Intolerance
Diverticuli/ Diverticulum

Description:
Grossly appears as an outpouching of a hollow (or a fluid-filled) structure in the body.

Diverticuli can affect many or all of the layers of the structure involved. Severe diverticular disease can cause a perforation causing abscesses and bleeding, especially in the colon. In the above photograph, this appendix exhibits severe diverticulitis in the distal aspect.

Tissues Commonly Affected
GI tract, urethra, bladder, gallbladder, appendix

Common Diseases
Diverticulitis
Eccentrally located

**Description:**
This term refers to anything that is off-centre. In gross pathology, this term is often used to describe the appearance of a lesion in relation to the rest of the specimen. In the above photograph, the underlying subcapsular lesion is located eccentrically, or off-centre.

**Tissues Commonly Affected**
Any organ

**Common Diseases**
Tumour masses and other lesions
Edematous

**Description:**

Grossly appears as a swelling of otherwise normal appearing tissue. It is an abnormal accumulation of fluid in the interstitium, which is located beneath the skin or in one or more cavities of the body. In the above photograph, the bowel mucosa has retained fluid and appears swollen.

**Tissues Commonly Affected**

Any, cutaneous tissues, GI tract,

**Common Diseases**

Cutaneous edema, pulmonary edema, pleural effusions, ascites and peripheral edema
**Ellipse**

![Image of a segmental mastectomy specimen with a skin ellipse]

**Description:**

The term ellipse is reserved in pathology for describing the general shape of the specimen. The strict definition of an ellipse is a plane curve such that the sums of the distances of each point in its periphery from two fixed points, the foci, are equal. It is a common shape in skin excision specimens such as wide excisions for skin cancer cases and in breast mastectomy specimens.

The above photograph shows a segmental mastectomy specimen with a skin ellipse.

**Tissues Commonly Affected**

Skin

**Common Diseases**

Skin cancers and underlying disease processes where skin excision is needed, mastectomy specimens.
Elongated

**Description:**
Grossly appears to as a long, narrowing or stretching out of a specimen. The term is reserved for gross appearance of a specimen in relation to how it would normally appear. However, an elongated appearance may not necessarily refer to an underlying disease process. In the above photograph, this fallopian tube appears stretched out, or elongated.

**Tissues Commonly Affected**
Any

**Common Diseases**
N/A
**Encapsulated**

![Encapsulated specimen](image)

**Description:**
Grossly appears as a space enclosed by a protective coating or membrane. Encapsulated specimens appear confined to a specific area. In general, encapsulation refers to a tumor confined to a specific area, surrounded by a thin layer of fibrous tissue. In the above photograph, this thyroid lesion has formed a protective capsule. Lesions with protective capsules are generally benign.

**Tissues Commonly Affected**
Any, but most likely seen in Thyroid, Breast, Ovaries, Lipoma

**Common Diseases**
Follicular lesions of the thyroid, ovarian tumours.
Eroded/ Erosion

Description:
Grossly appears as a wearing away by or as if by abrasion. Erosion is mostly likely due to trauma or scratching. Erosions appear as slightly depressed areas of skin in which part or all of the epidermis has been lost. In the above photograph, the superficial epidermal layer is disrupted by traumatic means.

Tissues Commonly Affected
Skin

Common Diseases
Trauma
Exophytic

**Description:**
Grossly appears as an outgrowth, often lobulated or irregular in appearance. Exophytic lesions and neoplasms grow outward from a surface and can be seen almost anywhere in the body. In the above photograph, this exophytic lesion arises from the breast tissue with underlying cancer which has infiltrated through the skin surface.

**Tissues Commonly Affected**
Skin, Liver, kidney, oral mucosa

**Common Diseases**
Tumours
Exudate

Description:
Grossly appears to be an opaque light-tan or grey-tan soft material that is adherent to the surface of the specimen. Exudate is a fluid with a high content of protein and cellular debris which has escaped from blood vessels and has been deposited in tissues or on tissue surfaces and is usually as a result of inflammation. Infection is usually present with this form of exudate. In the above photograph, this appendix has adherent purulent exudates at the distal tip.

Tissues Commonly Affected
Appendix, bowel, peritoneal surfaces, other abdominal organs.

Common Diseases
Appendicitis, bowel perforation, peritonitis
Everted

Description:

This term is used to describe areas or lesions on specimens which have an outward appearance compared to the rest of the specimen. In the above photograph the skin ellipse has centrally-located nipple which is everted, or protruding outward from the skin surface.

Tissues Commonly Affected

Skin

Common Diseases

N/A
**Description:**

Grossly refers to a lesion that is an abnormal outgrowth or a projection related to a disease or pathologic condition. The presence of excrescences in a specimen may be indicative of a pre-malignant or malignant condition. In the above photograph, there are papillary excrescences that are emanating from the inner ovarian lining.

**Tissues Commonly Affected**

Ovaries

**Common Diseases**

Borderline ovarian tumours
Fat Necrosis

Description:
Grossly appears small (1-4 mm), dull, chalky, gray or white foci. Classified as the death of adipose tissue, fat necrosis is characterized by the formation of minute quantities of calcium soaps formed in the affected tissue when fat is hydrolyzed into glycerol and fatty acids. In the above photograph, there is fat necrosis identified in the surrounding peri-nephric fat.

Tissues Commonly Affected
Pancreas, Breast, subcutaneous tissue

Common Diseases
hemorrhagic pancreatitis, trauma, collagen vascular disease, myoproliferative disorders
Fenestrated

Description:
Grossly appears as any lesion or gross area of interest which has windows or window-like openings. Fenestrated specimens have openings that can occur naturally or are created surgically, as through a biological membrane. In the above photograph, this leg has surgically created fenestrated openings which expose the subcutaneous tissues, muscle and bone.

Tissues Commonly Affected
Trachea, arteries, oral cavity

Common Diseases
Surgical perforation of the mucoperiosteum, fenestrated tracheal defect, trauma
Fibrofatty

Description:
Grossly appears as yellow, lobulated tissue with grey-white tissue bands throughout. The term fibrofatty specifically refers to tissue that contains both fibrous and fatty components. Fibrofatty tissue is usually normal appearing in subcutaneous tissues, and mostly in breast as seen in the above photograph.

Tissues Commonly Affected
Breast, subcutaneous tissue

Common Diseases
N/A
Description:
Grossly appears to be a dense white-to-grey homogenous or striated tissue. Fibrous tissue consists of common connective tissue of the body, composed of yellow or white parallel elastic and collagen fibers. In the above photograph, this soft tissue tumour is almost entirely composed of dense fibrous tissue with striated appearance.

Tissues Commonly Affected
Breast and other soft tissues

Common Diseases
Fibromatosis, fibrous dysplasia
**Firm**

![Image of tissue sample](image)

**Description:**
This gross descriptive term is used when areas of the tissue or the entire tissue itself exhibits a solid, almost unyielding surface or structure. Most tissue specimens received in the pathology lab are soft in consistency, so variations from this norm are described as being “firm” or having “firmness” in comparison to other tissues. In the above photograph, there is a focal area of firm, calcification contained within this soft tissue tumour.

**Tissues Commonly Affected**
Bone, calcified areas

**Common Diseases**
Calciphylaxis
Fistula

Description:
Grossly appears as an abnormal connection between two organs in the body or between an organ and the exterior of the body. Fistulas can arise in any part of the body, but they are most common in the digestive tract. They can also develop between blood vessels and in the urinary, reproductive, and lymphatic systems. There a number of pathologic processes which can lead to the formation of a fistula. In addition, there are congenital conditions which can cause a fistula.

Tissues Commonly Affected
GI tract, Urinary tract, reproductive tract

Common Diseases
Inflammatory bowel disease, diabetes, AIDS, cancer
Flat

**Description:**

In a gross description, the term flat is used to describe the shape of the specimen, areas within a specimen or describe the lesion itself. Flat is defined as smooth and even; without marked lumps or indentations. In the above photograph, this skin is a relatively flat excision specimen.

**Tissues Commonly Affected**

Any

**Common Diseases**

Skin lesions, such as melanoma.
**Flecked**

**Description:**
Grossly appears as a small marking, streak or speckle usually appearing on serosal or mucosal surfaces of specimens. The appearances of flecks on these surfaces could be indicative of an underlying disease process. In the above photograph, the mucosa of this gallbladder has the yellow-flecked appearance which is characteristic of cholesterolosis.

**Tissues Commonly Affected**
Gallbladder

**Common Diseases**
Cholesterolosis
Fleshy

**Description:**
Grossly appears as a homogenous, often tan or light tan cut surface consisting of, or resembling flesh. Often, this cut surface is identified with lymph nodes or soft tissues that are associated with lymphoma and are likely encapsulated. The above photograph is a lymph node which has been bisected to exhibit a fleshy cut surface.

**Tissues Commonly Affected**
Lymph nodes, Any soft tissue.

**Common Diseases**
Lymphoma, Sarcoma, carcinoid, GIST
Fluid (fluid-filled)

Description:
This gross description pertains to any structure which is occupied by any fluid substance. For instance, cysts and cavities often contain various types of fluid and thus referred to as “fluid-filled”. This term is usually followed by another descriptive term such as “cyst” or “cavity” to explain the full meaning of the term. In the above photograph, this cyst has been opened to reveal that it is a fluid-filled cyst.

Tissues Commonly Affected
Cysts, cavities, lungs

Common Diseases
Serous or Mucinous Cystadenoma, Blisters, Pulmonary edema
**Focal**

**Description:**
Grossly refers to a localized area of interest. In gross pathology, there are often specific areas of interest that are located within normal or unremarkable areas. In the above photograph, there is a focal area of fat necrosis in the upper quadrant of the specimen.

**Tissues Commonly Affected**
Any

**Common Diseases**
N/A
**Fractured**

![Fractured specimen image]

**Description:**
The gross appearance of a fractured specimen is of having been broken or ruptured. In pathology, we are mostly referring to bone or boney specimens, but can reserved for other, firm portions of tissue such as gallstones. Fractured specimen appearances can be the result of trauma or underlying pathologic processes, such as bone tumors or metastatic tumours to bone. In the above photograph, the bones of this foot have been fractured as a result of trauma.

**Tissues Commonly Affected**
Bones, cartilage

**Common Diseases**
Trauma or bone tumours
**Friable**

**Description:**
Grossly appears as tissue that is easily broken into small fragments or reduced to powder. In general, friable tissue in the pathology laboratory can be attributed to tissue necrosis, or drying out of the tissue. In the above photograph, these hemorrhagic tissue fragments easily fall apart as they are being handled.

**Tissues Commonly Affected**
Any

**Common Diseases**
Tissue necrosis, drying out of tissue
Fungating

Description:
Grossly appears as a well defined, ulcerating and necrotic lesion. A fungating lesion is typically seen in advanced stage disease and is often accompanied with a foul odour. The lesion seen in the above photograph is fungating, ulcerated advanced stage skin cancer.

Tissues Commonly Affected

Skin

Common Diseases

Breast cancer, skin cancers including melanoma and squamous cell carcinoma.
Gangrenous

Description:
Grossly appears as darkened and/or mummified tissue. Gangrenous tissue is essentially the death and decay of body tissue, often occurring in a limb, caused by insufficient blood supply and usually following injury or disease. The skin surface can be partially or entirely sloughened off. Diseased areas are often sharply demarcated from the normal appearing areas. In the above photograph, this patient has diabetes, the effects of which occluded the vascular supply to his right foot, causing gangrene.

Tissues Commonly Affected
Extremiites

Common Diseases
Diabetes, Infection, injury
Granulated

**Description:**
Grossly appears as a surface or lining of a specimen which has small grains or granules. This is a common and grossly unremarkable appearance for many specimens. It gross pathology it is important to note the appearance even if it is unremarkable, or clinically insignificant. In the above photograph the mucosal surface of this colon is granular in appearance, absent of normal mucosal folds.

**Tissues Commonly Affected**
Appendix, bowel, peritoneal surfaces, other abdominal organs.

**Common Diseases**
Appendicitis, bowel perforation, peritonitis
**Gritty**

**Description:**
Grossly appears as being composed of or covered with particles resembling grit in texture or consistency. When cutting into these specimens, there can be some difficulty inserting the scalpel as there may be some calcification present. In the above photograph, this soft tissue has been bisected to reveal a gritty appearance in the upper pole.

**Tissues Commonly Affected**
Soft tissues, cartilage

**Common Diseases**
Calciphylaxis
**Description:**

The term “hairy” or “hair-like” can be applied to any specimen that contains hair, or similar appearing material. All skin specimens should contain various amounts of hair and can be referred to as “hair-bearing”. In the above photograph, this dermoid cyst has been opened and is shown to contain a large amount of hair, which is common in this pathologic abnormality.

**Tissues Commonly Affected**

Skin, ovaries, spine, peri-orbital region

**Common Diseases**

Dermoid cysts (cystic teratoma)
Hemorrhagic

**Description:**
Grossly appears as excessive aggregates of blood as a result from profuse bleeding. In gross pathology, blood can accumulate anywhere such as in between tissue layers, on surfaces or in lumens. The excessive accumulation of blood is usually indicative of an underlying pathologic process. In the above photograph, there is a mass of hemorrhage that has accumulated in the lumen of this bowel which is the result of bleeding from trauma.

**Tissues Commonly Affected**
Any

**Common Diseases**
Trauma, ulcerated lesions, varices
Heterogenous

Description:
Grossly appears as anything that consists of dissimilar elements or parts. It is the exact opposite of homogeneous in appearance. In the above photograph, the cut surface has many different elements including hemorrhage, necrosis and lobules, making it heterogenous in gross appearance.

Tissues Commonly Affected
Any

Common Diseases
Malignant tumours
Homogenous

**Description:**
Grossly appears as being similar or uniform in appearance. In gross pathology a particular lesion or overall specimen appearance can be described as homogenous. In the above photograph, the cut surface of the lesion is homogenous in color and consistency.

**Tissues Commonly Affected**
Any

**Common Diseases**
Lipoma, Sarcoma, Lymphoma
Ill-defined

**Description:**

Grossly appears as a lesion or area of interest that does not have a defined border. Malignant lesions can present as ill-defined as they metastasize locally and infiltrate the surrounding tissue.

In the above photograph, an invasive breast tumour is seen infiltrating into the surrounding parenchyma.

**Tissues Commonly Affected**

Any

**Common Diseases**

Invasive ductal carcinoma, pulmonary nodules, Ill-defined Hypoechoic Nodule
Incised

Description:
Grossly appears as a specimen which exhibits a clean cut, as with a surgical knife. Many of the specimens received in the pathology lab have been surgically removed because of trauma incisions that have compromised the function of the organ, such as stab wounds. However, surgeons often incise the specimens after removal to view the lesion or organ prior to sending up to the pathology lab. In the above photograph, this leg was received in the pathology lab with a previous incision through the staple line.

Tissues Commonly Affected
Any

Common Diseases
Trauma, iatrogenic defect
**Indrawn**

**Description:**
Grossly appears as an area of interest that has been pulled inward in comparison to other surrounding tissue. In these indrawn specimens, the appearance is usually due to a pathologic process in the underlying tissue. In the above photograph, the mucosa of this large bowel has a large linear ulceration which has caused it to become indrawn for most of its length.

**Tissues Commonly Affected**
Skin, GI tract

**Common Diseases**
Inflammatory bowel disease
Infarct

Description:

Grossly appears as a dark tan-to-black area of necrosis which can be localized to specific areas or affecting an entire organ. An infarct is tissue that undergoes necrosis as a result of obstruction of local blood supply, as by a thrombus or embolus. In the above photograph, an infarct has occurred in the blood supply to this liver tumour, causing areas of necrosis.

Tissues Commonly Affected

Any

Common Diseases

Myocardial infarction
**Infiltrated**

**Description:**
Grossly appears as a permeation of a suspected malignant process or substance into adjacent and surrounding tissues. This term is most likely used to describe the extent of a malignant neoplasm and its gross invasion through tissue layers. The above photograph shows a malignant breast carcinoma which has originated in the ducts of the breast and infiltrated its way grossly into the surrounding breast parenchyma.

**Tissues Commonly Affected**
Any

**Common Diseases**
Malignant tumours
**Description:**

Grossly refers to the appearance of the specimen as it arrives into the pathology lab. When a specimen arrives intact, the surfaces or membranes have not been compromised. Non-intact specimens have a compromised appearance as a result of a pathological process or as a result of the surgery itself. The above photograph is a gallbladder that is intact in appearance because the serosal surface is not compromised.

**Tissues Commonly Affected**

All

**Common Diseases**

N/A
Intracavitary

Description:
Grossly refers to a lesion or gross area of interest that is located within an organ or body cavity. Intracavitary can also refer to the centre of a lesion that is necrotic due to infection (i.e., an abscess) or cancer (tumour necrosis). In the above photograph, this fibroid is located within the endometrial cavity of the uterus.

Tissues Commonly Affected
Any

Common Diseases
Infections, tumours
Intralumen/ Intraluminal

**Description:**

Grossly appears any lesion or process that occurs within the lumen of a specimen. Pathologic processes can develop on luminal walls in the specimen which cause an outgrowth into the luminal space. In the above photograph a malignant tumour originated on the bowel mucosa which has now grown into a large mass into the lumen of the GI tract.

**Tissues Commonly Affected**

Any luminal structure including GI tract, fallopian tubes, vessels

**Common Diseases**

Tumours, ectopic pregnancy
Invasive

**Description:**

This term is used to describe the gross extent of the pathologic process involved. More specifically, it relates to a disease or condition that has a tendency to spread, especially a malignant cancer that spreads into healthy tissue. In the above photograph, the malignant neoplasm originates as a mucosal lesion which invades through the mucosa, muscular layers, wall and into the surrounding peri-colic fat.

**Tissues Commonly Affected**

Any

**Common Diseases**

Malignant tumours
Inverted

Description:
Grossly appears as a lesion or specific gross appearance that has been reversed in position, direction or order. In the above photograph, the nipple of the breast has been inverted probably as a result of the underlying malignant tumour.

Tissues Commonly Affected
Breast

Common Diseases
Malignant tumour
**Irregular**

*Description:*
Irregular gross appearances are described for specimens and lesions that do not have a definitive, classical appearance. In the above photograph, this portion of bowel mucosa has an overall, irregular shape.

**Tissues Commonly Affected**
Any

**Common Diseases**
N/A
Ischemic

Description:
Grossly appears as a lesion or area of interest which is dark tan, deeply congested and/or necrotic. Ischemia is inadequate blood supply to a part of the body, caused by partial or total blockage of an artery. The above photograph shows a segment of ischemic small bowel, which has become non-functional due to a reduced blood supply.

Tissues Commonly Affected
GI tract, legs, kidneys, feet, heart

Common Diseases
Coronary artery disease, stroke, angina, transient ischemic attack (TIA)
Laceration

Description:
Grossly appears as a defect that has been cut or wounded in a jagged manner. In gross pathology, it usually is present in cases involving trauma. In the above photograph, this leg has a laceration which is a result of a motor vehicle accident.

Tissues Commonly Affected

Any

Common Diseases

Trauma
Linear

**Description:**
Grossly appears of any appearance consisting of, or resembling a line. In pathology, a linear appearance is most commonly associated with evidence of scarring from a previous surgery or underlying disease process. In the above photograph, the skin has a centrally located linear scar that is left over from a previous surgery.

**Tissues Commonly Affected**
Skin, GI tract

**Common Diseases**
Scarring from previous surgery, Inflammatory bowel disease
Lobulated

Description:
Grossly appears as multiple, rounded, often homogenous appearing lobules. The term lobulated is most often used to refer to fatty tissue specimens. Can be used to describe normal appearing tissue, but can be used to refer to lipomatous tumours. In the above photograph, this lipoma has a classic yellow, lobulated appearance.

Tissues Commonly Affected
Subcutaneous tissue, breast

Common Diseases
Lipoma, liposarcoma
Loculated

**Description:**
Grossly appears as multiple small cavities contained within a larger structure. Loculated lesions are indicative of an underlying disease process and be seen in most parts of the body, but are most common in the lungs and ovary. In the above photograph, this ovary has been opened to reveal a loculated cut surface.

**Tissues Commonly Affected**
Lungs, ovaries

**Common Diseases**
Loculated empyema, loculated pleural effusion, ovarian cysts
Macule

Description:
Grossly appears as a small, flat, coloured spot, usually understood to mean on a mucosal surface or on the skin. In the above photograph, this dark-tan, centrally located macule is a benign melanocytic lesion

Tissues Commonly Affected
Skin, mucosal surfaces

Common Diseases
Freckles, rash
**Mottled**

**Description:**
Grossly appears as having spots or blotches of different shades or colours. Mottling is a result of cutaneous ischemia or changes in the vascular supply. In the above photograph this kidney has a mottled, hemorrhagic appearance.

**Tissues Commonly Affected**
Skin

**Common Diseases**
Livedo reticularis, herpes zoster infections
**Mucinous**

*Description:*

Grossly appears as aggregates of mucous. In some portions of the body, such as the stomach, the production of mucous is normal. However, there are some pathological processes which can exhibit an overproduction of mucous material. In the above photograph, this ovary is cystic and is filled with mucinous material.

**Tissues Commonly Affected**

Breast, appendix, ovaries

**Common Diseases**

Pseudomyxoma peritonei, Mucinous cyst adenoma, Mucinous cyst adenocarcinoma, mucinous breast lesions
Mucocele

**Description:**
Grossly appears as a dilated cavity that is filled with mucous. A mucocele is a benign condition that is a result of overproduction of mucous, but can be an indicative of other, malignant processes. In the above photograph, the distal tip of the appendix contains a benign mucocele.

**Tissues Commonly Affected**
- lacrimal sac, paranasal sinuses, appendix, or gallbladder

**Common Diseases**
- Mucocele cyst,
Multicystic

**Description:**

Grossly appears as multiple sac-like structures or cysts. This gross appearance is also referred to as polycystic and is indicative of an underlying disease process. In the above photograph, this kidney has been bisected to reveal a multicystic cut surface which is characteristic of polycystic kidney disease.

**Tissues Commonly Affected**

Ovaries, kidneys

**Common Diseases**

Polycystic kidney disease, polycystic ovary
Mulifaceted

**Description:**
Grossly appears as having many facets or aspects. In the above photograph, these gallbladder calculi are solid and have a multifaceted external appearance.

**Tissues Commonly Affected**
Gallbladder

**Common Diseases**
Cholelithiasis
Multifocal

**Description:**
Grossly appears as any lesion, abnormality or area of interest that has multiple points of origin. Multifocal is especially useful to describe multiple lesions, without having to describe each one, individually. In the above photograph, there are numerous multifocal tumours located within this bowel mucosa.

**Tissues Commonly Affected**
Colon, breast, thyroid

**Common Diseases**
Multifocal breast cancer
Multilobular

**Description:**

Grossly appears as a lesion, or area of interest which contains many lobules. This term is often used to describe the appearance of soft tissue tumours and bone tumours. The above photograph shows the cut surface from a multilobulated soft tissue sarcoma.

**Tissues Commonly Affected**

Bone, soft tissues

**Common Diseases**

multilobular osteomas and chondromas, sarcomas
Multiparous

**Description:**

Grossly appears as a slit-like opening in the cervical os. A multiparous opening is usually evidence that the woman has previously given birth. In the above photograph, the cervix has a slit-like, multiparous appearance.

**Tissues Commonly Affected**

Cervix

**Common Diseases**

N/A
Mummified

Description:

Grossly appears to as dark-tan to black, necrotic firm tissue. Tissues that have a mummified appearance often have a compromised blood supply which causes the affected tissue to shrivel and dry up. In the above photograph, this patient has diabetes which has caused blockage of the vascular supply in the distal portion of the right foot, causing tissue necrosis and mummification.

Tissues Commonly Affected

Extremities

Common Diseases

Peripheral vascular disease, diabetes
Necrotic

**Description:**
Grossly appears to as tan or dark tan tissue that easily breaks apart, or is friable. Necrosis refers to a death or dying of cells or tissues by way of injury or disease, especially in a localized area of the body. In the above photograph, this soft tissue exhibits extensive tissue necrosis.

**Tissues Commonly Affected**
Any

**Common Diseases**
Ischemia, Trauma
Nodular

**Description:**
Grossly appears as a specimen or area of interest having or resembling nodules. In the above photograph, these gallbladder calculi have a nodular external surface.

**Tissues Commonly Affected**
Any

**Common Diseases**
nodular dermatofibrosis, nodular hyperplasia, nodular thyroid hyperplasia
**Nodule**

![Image of a nodule](image)

**Description:**

Grossly appears as a small (>5mm) bump, node, swelling, or protuberance. Nodules are characterized by being elevated and greater than 5mm in size. In the above photograph, there is a nodule identified on the serosal surface of the uterine fundus.

**Tissues Commonly Affected**

Any

**Common Diseases**

Cutaneous nodule, Renal nodule, Rheumatoid nodule, Satellite nodule, Sister Mary Joseph nodule, Solitary thyroid nodule
Non-intact

Description:
Grossly appears as a defect in the specimen that alters its natural appearance. Specimens can be altered by a pathologic process or as a result of the surgical procedure. The above photograph shows a non-intact breast implant which was received in the pathology lab with a tearing defect in the capsule.

Tissues Commonly Affected
Any

Common Diseases
Trauma, perforations
Nulliparous

Description:
Grossly appears as a pin-hole opening of the cervical os. Usually, women who have not given birth previously present with a nulliparous os. In the above photograph, the cervical os is pin-hole or nulliparous in appearance.

Tissues Commonly Affected
Cervix

Common Diseases
N/A
Obstructed

Description:
Grossly appears as a luminal structure in the body that has been blocked or filled with obstacles or an obstacle. Obstructions can prevent the normal flow or transit occurring in the luminal structure causing impairment and inability of the organ system to operate. In vessels, obstructions can cause ischemia, acute tissue damage, and possibly death if occurring in the heart or brain. In the above photo a duct in the liver is obstructed by gallstones.

Tissues Commonly Affected
Luminal structures such as vessels, GI tract, fallopian tube, biliary tree..

Common Diseases
Myocardial Infarction, bowel obstruction, cholecystitis, ectopic pregnancy
Oval

**Description:**
Grossly refers to the overall shape of the specimen or lesion in question. An oval shape refers to a two-dimensional appearance. In the above photo, the skin surface of the specimen appears oval in shape.

**Tissues Commonly Affected**
Any

**Common Diseases**
N/A
**Ovoid**

**Description:**

Refers to the overall shape of the specimen or lesion in question, but differs from an oval description in that it would have a three dimensional aspect. Ovoid specimens are “egg-shaped” specimens, and the shape is not defined to any one area or disease process of the body. The above specimen in the photograph is an ovarian cyst exhibiting and ovoid shape.

**Tissues Commonly Affected**

Ovaries, Cysts

**Common Diseases**

Conditions affecting the ovaries, carcinoma, cyst adenomas
Papillated

**Description:**

Grossly appears to as marked by papillae or nipplelike prominences. Papillae are most commonly seen on the tongue surface, but can be observed in other areas, most often mucosal surfaces. In the above photograph a normal appearing tongue showing a papillated surface is observed.

**Tissues Commonly Affected**

Tongue, other mucosal surfaces, skin

**Common Diseases**

Papillary hyperplasia
**Papillary**

![Image of a cross section of thyroid with a cystic lesion containing a papillary lesion and fluid.]

**Description:**
Grossly appears as a lesion or area of interest which is relating to or resembling papilla. The appearance of papillary features may be indicative of a malignant or pre-malignant process. In the above photograph, this cross section of thyroid has a cystic lesion which contains a papillary lesion and fluid.

**Tissues Commonly Affected**
Ovary, thyroid

**Common Diseases**
Papillary thyroid carcinoma, borderline ovarian tumours
Papule

**Description:**
Grossly appears as a small circumscribed, superficial, solid elevation lesion with a diameter less than 1 cm. Papules are most commonly identified with the skin, but can be observed on other specimens and are most likely benign. In the above specimen, there are two distinct papules on the mucosal surface of this bowel.

**Tissues Commonly Affected**
Skin, mucous membranes

**Common Diseases**
Pimples, syphilis, hyperplastic colon polyps
**Patent**

**Description:**

Grossly appears as an open or unobstructed luminal structure. These luminal structures include ducts, lumens or vessels. There are many diseases which can affect the patency of these structures including inflammation, tumours and obstructions. In the above photograph this bile duct is opened to reveal that it is patent and unremarkable.

**Tissues Commonly Affected**

Ducts, lumens and vessels

**Common Diseases**

N/A
Peau d’orange

Description:
Grossly appears as a swollen dimpled and pitted skin surface in a breast cancer mastectomy specimen. The skin shows this appearance when an underlying breast carcinoma in which there is both stromal infiltration and lymphatic obstruction with edema. The above photograph shows an extensive peau d’orange appearance.

Tissues Commonly Affected
Skin surface of breast mastectomy specimens

Common Diseases
Breast carcinoma
Pedunculated Polyp

**Description:**
Grossly appears as any growth or mass protruding from a mucous membrane with a thin stalk.

They are usually an overgrowth of normal tissue, but can sometimes be true tumours (masses of new tissue separate from the supporting membrane). In the above photograph, a pedunculated polyp is arising from the large intestine mucosa.

**Tissues Commonly Affected**
Mucous membranes, skin, nose, ears, mouth, lungs, heart, stomach, intestines, urinary bladder, uterus, and cervix.

**Common Diseases**
Familial adenomatous polyposis, colon polyps, nasal polyps
**Petechia**

![Image of Petechia](image.jpg)

**Description:**
Grossly appear as small (<3mm) purplish spot on a body surface, such as the skin or a mucous membrane. Petechia are caused by minor haemorrhages affecting capillaries. In the above photograph, these petechial haemorrhages are identified on the mucosal surface of the large intestine.

**Tissues Commonly Affected**
Skin, mucous membranes

**Common Diseases**
Trauma, meningococcemia, leukemia, and certain causes of thrombocytopenia
Perforated

**Description:**

Grossly appears as a hole or break in the containing walls or membranes of a structure or organ of the body. A perforation occurs when erosion, infection, or other factors create a weak area in the organ and internal pressure causes a rupture. It also may result from a deep penetrating wound caused by trauma. In the above photograph, this colon has been ruptured during a colonoscopy procedure.

**Tissues Commonly Affected**

Any

**Common Diseases**

Trauma, Inflammation, malignant tumours
**Pigmented**

**Description:**
Grossly appears as darkened lesions on light–coloured background tissue. Pigmented lesions are most often used to describe skin spots that are brown or black. They are usually moles and are colored as the result of a deposit of pigment. Pigmented lesions may change in size, color or border shape. In the above photograph, this skin lesion is darkly pigmented compared to the normal, surrounding skin.

**Tissues Commonly Affected**
Skin, mucosal membranes

**Common Diseases**
Melanoma, melanocytic nevus
**Plaque**

![Image of plaque](image)

**Description:**
Grossly appears as a flat, often raised patch on the skin or any other organ of the body. Plaque can be attributed to abnormal mucous buildup or an accumulation of fatty deposits. In the above photograph there are multiple, diffuse plaques on the mucosal surface of the colon, which is typical in pseudomembranous colitis.

**Tissues Commonly Affected**

Vessels, skin, oral cavity

**Common Diseases**

Atherosclerosis, pseudomembranous colitis, psoriasis
**Prominent**

![Image of Prominent Tissue](image)

**Description:**
Grossly appears as any tissue which projects outward or upward; protuberant. Prominent tissues are immediately noticeable and conspicuous as compared to the rest of the tissue, or what is considered normal appearing tissue. Prominent tissue appearance is not necessarily considered a pathology abnormality, but may be indicative of an underlying inflammatory or edematous process. In the above photograph, this colonic mucosa displays a focal area of prominent mucosal folding either due to underlying edema or an early lesion.

**Tissues Commonly Affected**
Any

**Common Diseases**
Inflammation, edema
Protruding

**Description:**
Grossly appears as a an appearance or abnormality which is pushed or thrust outward. In gross pathology, this is mostly used to describe contents within an organ or specimen which are pushed outward from a luminal opening or defect. In the above photograph, this endometrial cancer is protruding through the cervical os.

**Tissues Commonly Affected**
Any

**Common Diseases**
Endometrial cancer, rectal cancer
Pseudocyst

Description:
Grossly appears as an abnormal or dilated space or cavity resembling a cyst but not lined with epithelium. Pseudocysts may contain gas or liquid but without a lining membrane. Pseudocysts are usually associated with benign pancreatic cysts. In the above photograph, there is a pseudocyst present in the pancreas.

Tissues Commonly Affected
Pancreas

Common Diseases
Pseudocyst
Pseudopolyps

**Description:**
Grossly appears as a hypertrophied tab of mucous membrane resembling a polyp. An 'island' of preserved colonic mucosa, surrounded by an ulcerated 'sea' of hemorrhagic mucosa; pseudopolyps are typical of ulcerative colitis, but may be seen in other disease processes. In the above photograph, the mucosal surface of this colon exhibits diffuse pseudopolyps.

**Tissues Commonly Affected**
Gi tract

**Common Diseases**
IBD, bacterial dysentery, amebiasis due to *Entamoeba histolytica* and schistosomiasis.
**Puckered**

*Description:*

Grossly appears as a focal area that exhibits a wrinkle, crease, or irregular fold. Puckering often refers to a constriction or contraction of a surface due to an underlying disease process. In the above photograph, the gallbladder serosal surface is puckered due to an underlying malignant tumour.

**Tissues Commonly Affected**

Any

**Common Diseases**

Malignant lesions
Pultaceous/ Sebaceous Material

**Description:**
Grossly appears as soft, macerated and often nearly fluid. Pultaceous is often used to describe the consistency of cystic contents that are soft and cheese-like. In the above photograph, this cross-section of a cyst shows that it is filled with yellow, pultaceous material.

**Tissues Commonly Affected**
Subcutaneous tissue, ovaries

**Common Diseases**
Sebaceous cysts, dermoid cysts
Pus

Description:
Grossly appears as a generally viscous, yellowish-white fluid formed in infected tissue, Pus consists of white blood cells, cellular debris, and necrotic tissue usually as a product of inflammation. In the above photograph this soft tissue was implanted with an Intra-uterine device (IUD), which has caused an infection, producing pus.

Tissues Commonly Affected
Any

Common Diseases
Abscesses, Sores, Infection
Raised

Description:
Grossly appears as any lesion or gross appearance that is elevated above the normal, surrounding tissue. Raised lesions are most commonly associated with tumours, including localized swelling and edema. In the above photograph, this sarcoma lesion presents as ulcerated and raised above the normal appearing skin.

Tissues Commonly Affected
Any

Common Diseases
Tumours, edema, Inflammation
Reniform

**Description:**

Grossly appears as any specimen, lesion or area of interest that has the shape or profile of a kidney. In the above picture, this kidney specimen displays the classic reniform appearance.

**Tissues Commonly Affected**

Kidney

**Common Diseases**

N/A
Description:
Grossly appears to as a ragged, irregular non-uniform area displayed by the specimen.

Roughened surfaces on specimens may be indicative of tearing defects that occur as a result of the pathologic process, trauma or as result of the difficulty in removing the specimen during surgery. In the above photograph, the serosal surface of the uterus appears roughened due to the difficulty of the hysterectomy procedure.

Tissues Commonly Affected
Any

Common Diseases
Trauma
Ruptured

**Description:**
Grossly appears a tear or break in the continuity or configuration of an organ or body tissue.

Ruptured specimens often display a tearing or disruption of a membrane or flattened tissue that was subjected to pressure. In the above photograph, this spleen was received ruptured due to a traumatic motor vehicle accident.

**Tissues Commonly Affected**

Any

**Common Diseases**

Appendicitis, ectopic pregnancy, trauma
Scale

Description:
Grossly appears as a thin flake or compacted plate-like structure, as of cornified epithelial cells on the body surface. Scaling usually occurs due to a pathologic skin condition or as a result of dry skin. In the above photograph, this skin lesion has become slightly necrotic with scaling features.

Tissues Commonly Affected
Skin

Common Diseases
Eczema, contact dermatitis, dry skin, actinic keratosis, psoriasis
Segmental

Description:
Grossly refers a surgical procedure in which a part of an organ, gland, or other body part is excised. Segmental resections can be performed for a variety of reasons, including segmental bowel resections which leave the remainder of the bowel intact to continue on in the digestive process. In the above photograph, this is a segmental resection because it involves only the distal small bowel (at right) and part of the proximal large colon.

Tissues Commonly Affected
Bowel, breast, thyroid, lung, liver

Common Diseases
Malignant tumours, Inflammatory bowel disease
**Serpiginous**

**Description:**

Grossly appears as any lesion or area of interest that exhibits a wavy, or snake-like border.

Serpiginous lesions are often ulcers which exhibit healing over in one portion while continuing to advance in another. In the above photograph, the centrally-located lesion exhibits a circumferential, serpiginous border.

**Tissues Commonly Affected**

Skin

**Common Diseases**

Ulcerating lesions
Septate

**Description:**

Grossly appears as any lesion or gross area of interest which exhibits a separation or division by a septum or septa. This description can be used to describe cysts found in other parts of the body, but is mostly seen in liver cysts. In the above photograph, this ovarian cyst is opened to reveal multiple septated locules.

**Tissues Commonly Affected**

Uterus, Liver, Ovaries

**Common Diseases**

Liver cysts, Ovarian cysts
Serosal

**Description:**
Grossly refers to a serous membrane, especially one that lines the pericardial, pleural, and peritoneal cavities, enclosing their contents. The term serosal would be used to describe the specific surface that the grosser is referring to. In the above photograph, the serosal surface of the uterus appears smooth and unremarkable.

**Tissues Commonly Affected**
Pleura, pericardium, peritoneum, endocardium

**Common Diseases**
N/A
Serous

Description:
Grossly appears as clear, pale yellow liquid often identified in cystic structures. Serous fluid refers to the production of or containing serum, such as serous exudates. Serous fluid is generally of a benign nature that fills the inside of body cavities. A common trait of serous fluids is their role in assisting digestion, respiration and excretion. In the above photograph, this ovarian cyst contains clear, serous fluid.

Tissues Commonly Affected
Ovaries

Common Diseases
Serous carcinoma
Serrated

**Description:**
Grossly appears as having a notched or sawlike edge. This term is often describing the edges of lesions or resection margins. In the above photograph, this centrally located lesion has a serrated outer border.

**Tissues Commonly Affected**
Any

**Common Diseases**
N/A
Sessile

**Description:**
Grossly appears to be roughened raised areas that have a broad base. In gross pathology, the term is mostly used in describing polyps in the GI tract. In the above photo is a cross section showing a sessile polyp and its relationship with the other bowel layers.

**Tissues Commonly Affected**
GI tract

**Common Diseases**
Sessile polyps
Sloughed

**Description:**

Grossly appears as an outer layer or covering that is shed. Sloughed usually refers to a layer or mass of dead tissue separated from surrounding living tissue. Sloughed skin is a result of a wound, sore, or inflammation. In the above photograph, this specimen exhibits skin sloughing due to tissue necrosis occurring in the distal part of the limb.

**Tissues Commonly Affected**

Skin

**Common Diseases**

Diabetes, trauma, peripheral vascular disease
Smooth

**Description:**
Grossly appears to a lesion or area of interest that has a surface free from irregularities, roughness, or projections; even consistency. In gross specimens, having a smooth consistency is usually indicative of normal pathology. In the above photograph, this uterus has a smooth serosal surface which is free of any pathologic abnormality.

**Tissues Commonly Affected**
Any

**Common Diseases**
N/A
Solid-cystic

**Description:**
Grossly appears as a lesion or area of interest that contains both a solid and cystic component. If a cyst contains solid areas, it may be a sign that the lesion may be pre-cancerous or cancerous.

The above photograph shows a malignant ovarian lesion that has undergone necrosis, and central, cystic degeneration.

**Tissues Commonly Affected**
Any

**Common Diseases**
Malignant tumours,
**Stellate**

![Image of stellate lesion](image-url)

**Description:**
Grossly appears as any lesion or area of interest that is star-shaped. Stellate lesions exhibit multiple tapering points emanating from a central axis. Stellate lesions are often indicative of malignant lesions that are infiltrating into surrounding normal tissue. In the above photograph, this malignant breast tumour has a stellate appearance.

**Tissues Commonly Affected**
Breast

**Common Diseases**
Malignant tumours
**Description:**
Grossly appears as an abnormal narrowing or contraction of a body passage or opening. Stenosis can occur in many areas of the body and are mostly likely due to an underlying pathologic process. In the above photograph, this lumen in this colon appears stenotic because of crohn’s disease.

**Tissues Commonly Affected**
Gi tract, vessels, aorta

**Common Diseases**
Crohn’s disease, pyloric stenosis, aortic stenosis, pulmonary stenosis
**Description:**

Grossly appears as a line, stripe, smear, or band differentiated by color or texture from its immediate surroundings. In the above photograph, this pilomatrixoma cut surface has diffuse white streaking.

**Tissues Commonly Affected**

Gallbladder

**Common Diseases**

Cholesterolosis
**Description:**

Grossly appears as a thin line, band, stripe, or streak distinguished from the tissue in which it is found; a striation. Striations can occur naturally, like muscular bands or can be seen as part of a pathological process. In the above photograph, the stomach shows normal striated muscular bands.

**Tissues Commonly Affected**

GI tract, skin

**Common Diseases**

stri´ae gravida´rum, atrophic striae
**Submucosal**

**Description:**

Grossly appears as lesion or gross area of interest that lies beneath a mucous membrane. The mucous membrane is a layer of connective tissue beneath the tunica mucosa. In the above photograph, the submucosal hemorrhage is identified in this cross section of intestine.

**Tissues Commonly Affected**

Bronchi, esophagus, small and large intestines, pharynx, stomach, bladder, uterus

**Common Diseases**

Submucosa hemorrhage, submucosal lipoma
**Subserosal**

**Description:**
Grossly appears as any lesion or gross area of interest that lies beneath a serous membrane such as that of the peritoneum or pericardium. In the above photograph, the fibroid is located subserosally in the uterus.

**Tissues Commonly Affected**
bladder, esophagus, gallbladder, small and large intestine, liver, pleura, pericardium, peritoneum, stomach, testes, uterine tubes, and uterus.

**Common Diseases**
Fibroids
**Symmetrical**

![Image of a symmetrical thyroidectomy]

**Description:**
Grossly appears as an organ, lesion or gross abnormality which is equal on either side of a central dividing line. In the above photograph, this thyroidectomy has two equal lobes, and is therefore considered symmetrical.

**Tissues Commonly Affected**
Any

**Common Diseases**
N/A
Thickened

**Description:**
Grossly appears as any lesion or gross appearance pertaining to getting thick or thicker as compared to its’ normal appearance or compared to adjacent structures. In the above photograph, this gallbladder wall has a thickened wall compared to its’ normal appearance.

**Tissues Commonly Affected**
Any

**Common Diseases**
Inflammation, Tumours
**Trabeculated**

**Description:**
Grossly appears as a thick wall and hypertrophied muscle bundles. Trabeculated appearances are typically seen in instances of chronic obstruction. In the above photograph, this ovarian inner lining appears to have a trabecular pattern.

**Tissues Commonly Affected**
Gallbladder, bladder, ovaries

**Common Diseases**
Cholecystitis, Urinary tract obstruction
Translucent

**Description:**
Grossly appears to a lesion or area of interest in which a substance that transmits light but diffuses or scatters it on the way so that objects cannot be seen through it. In the above photograph, this cystic structure appears translucent because you cannot see right through it.

**Tissues Commonly Affected**
Cysts, Ovaries, gestational sacs, Lung

**Common Diseases**
Spontaneous abortion, Molar pregnancy
**Description:**

Grossly appears as a lesion or area of interest which pertains to a clear medium that allows for the transmission of light so that objects on the other side are distinguishable. In the above photograph, you are able to see the background through this transparent cyst.

**Tissues Commonly Affected**

Ovaries, cysts, gestational sacs, lung

**Common Diseases**

Spontaneous abortion, Molar pregnancy
Ulcerated

**Description:**

Grossly appears as specimen a circumscribed, craterlike lesion. In ulcers there is damage where the surface tissue is lost and/or necrotic. An ulceration is a local defect, or excavation of the surface, of an organ or tissue, produced by sloughing of necrotic inflammatory tissue. In the above photograph, this skin surface shows a deep ulceration exposing the underlying subcutaneous tissue.

**Tissues Commonly Affected**

Skin, mucous membranes.

**Common Diseases**

inflammatory, infectious, or malignant processes.
**Uniform**

![Image of a speckled lesion]

**Description:**
Grossly refers to the distribution pattern of the lesion or area of interest. A uniform distribution of a lesion can be indicative of a widespread, local metastatic process, or extent of the disease in question. In the above photograph, this speckled lesion is uniformly distributed throughout the entire specimen.

**Tissues Commonly Affected**
Any

**Common Diseases**
Malignant tumours, inflammatory processes
Unilateral

**Description:**

Grossly appears as a lesion or area of interest which is confined within/affecting one side only.

In the above photograph, this thyroid lesion is in the left lobe while the right lobe is not affected.

**Tissues Commonly Affected**

Any

**Common Diseases**

Ataxia
Variable-sized

**Description:**

Grossly refers to any lesion or area of interest that has changing values in size. In the above photograph, these cystic lesions contained in this cyst are varying in size.

**Tissues Commonly Affected**

Ovaries, gallbladder, kidneys

**Common Diseases**

Molar pregnancy, cholelithiasis
Velvety

Description:
Grossly appears to be a lesion or area of interest which is soft and carpet-like. A velvety gross appearance is due to the presence of vast numbers of papillae. Discolored velvety lesions, especially in the oral cavity, may be indicative of a pathologic process. In the above photograph, the gallbladder mucosa exhibits a velvety mucosal surface.

Tissues Commonly Affected
Mucosal membranes, tongue, oral cavity

Common Diseases
Erythroplastic lesions


**Vermiform**

**Description:**
Grossly refers to a worm-shape or resembling a worm in form. The classic vermiform appearance is exemplified especially in the appendix of the cecum. The above photograph shows a normal appearing vermiform appendix.

**Tissues Commonly Affected**
Appendix

**Common Diseases**
N/A
Verrucous

**Description:**
Grossly appears as a lesion or area of interest which resembles a wart or denoting wartlike elevations. Verrucous lesions are most likely indicative of HPV infection or inflammatory skin conditions. In the above photograph, this vulva exhibits a wart-like, verrucous lesion

**Tissues Commonly Affected**
Skin

**Common Diseases**
HPV, verrucose dermatitis, verrucose pododermatitis
Vesicle

**Description:**

Grossly appears as a small (<5mm) circumscribed elevated bladder or sac. Vesicles are known as small blisters. In the above photograph, there is a vesicle present on the uterine serosa.

**Tissues Commonly Affected**

Skin

**Common Diseases**

Dermatitis, allergic reactions, chicken pox, herpes, autoimmune disease
Well-healed

Description:
Grossly refers to a lesion or area of interest which has been restored to normal or almost normal appearance. In gross pathology, the term is often used to describe areas of previous surgery as compared to more recent reasons for surgical removal of the tissue. For instance, in the above photograph, this leg amputation exhibits signs of previous surgery by the well-healed linear scar that is on the skin surface.

Tissues Commonly Affected
Skin.

Common Diseases
Previous surgery
Wrinkled

Description:
Grossly appears as small furrows, ridges, or creases on a normally smooth surface, caused by crumpling, folding, or shrinking. In gross pathology, this is often observed as a result of post-surgical tissue contraction and after formalin fixation. In the above photograph, this outer surface of the ovary exhibits wrinkling due to overnight formalin fixation shrinkage effects.

Tissues Commonly Affected
Skin, hernia sacs, cysts

Common Diseases
Tissue contraction, Formalin fixation
**Whorled**

![Image of whorled tissues](image)

**Description:**

Grossly appears as a lesion or area of interest which forming one or more whorls. Whorls appear in tissue as curled or wound in concentric rings or spirals. In the above photograph, this leiomyoma (fibroid) has a typical whorled cut surface appearance.

**Tissues Commonly Affected**

Uterus

**Common Diseases**

Leiomyoma, leiomyosarcoma