Hill's Atlas of Veterinary Clinical Anatomy

Contents

Respiratory System

Urogenital System

Special Senses

Parasite Life Cycles

Introduction

At one time or another, all of us in clinical practice have explained to clients such things as the pathology of a failing heart or a prolapsed intervertebral disk. Oftentimes, we've used radiographs or hand drawings to communicate important points. Irrespective of our artistic skills, such drawings and explanations transfer information to clients not only about specific diagnoses but also about the rationale behind therapeutic plans.

Hill's Pet Nutrition thinks client communication is vital to the success of veterinary practice. In accord with that philosophy, Hill's is proud to present the *Hill's Atlas of Veterinary Clinical Anatomy*™ - an in-exam room atlas to heighten client communications.

Each illustration in the *Atlas* has been drawn by professional medical illustrators. Generally, the left-hand page depicts normal anatomy, and the right-hand page a pathologic presentation. A brief outline of diagnostic, therapeutic, and dietary plans is included on the right-hand page. This arrangement will allow you to show clients normal anatomy and the pathology affecting their pets while you describe how your therapeutic plan will, if possible, return their pets to health and normal anatomy.

The *Atlas* contains eight sections. Refer to the contents pages for the page numbers and color assigned to each section. These blocks of color are placed around the page numbers at the top of each page. Each section has been assigned a different color for ease of use.

Every effort has been made to ensure the accuracy of the medical illustrations and the diagnostic, therapeutic, and nutritional plans in the *Atlas*. For example, each illustration has been reviewed by appropriate veterinary faculty at the College of Veterinary Medicine, Colorado State University. The *Atlas* is not intended to be an exhaustive review of anatomy, pathology, or medicine. For more information, consult the Bibliography, refer to prescribing information on specific drugs, or call Hill's Veterinary Consultation Service at 1-800-548-VETS (8387) or e-mail vet_consult@HillsPet.com.

The *Atlas* contains illustrations of the most common conditions seen in clinical practice. Therefore, its proper place is in the exam room, so you can use it daily to enhance client education.

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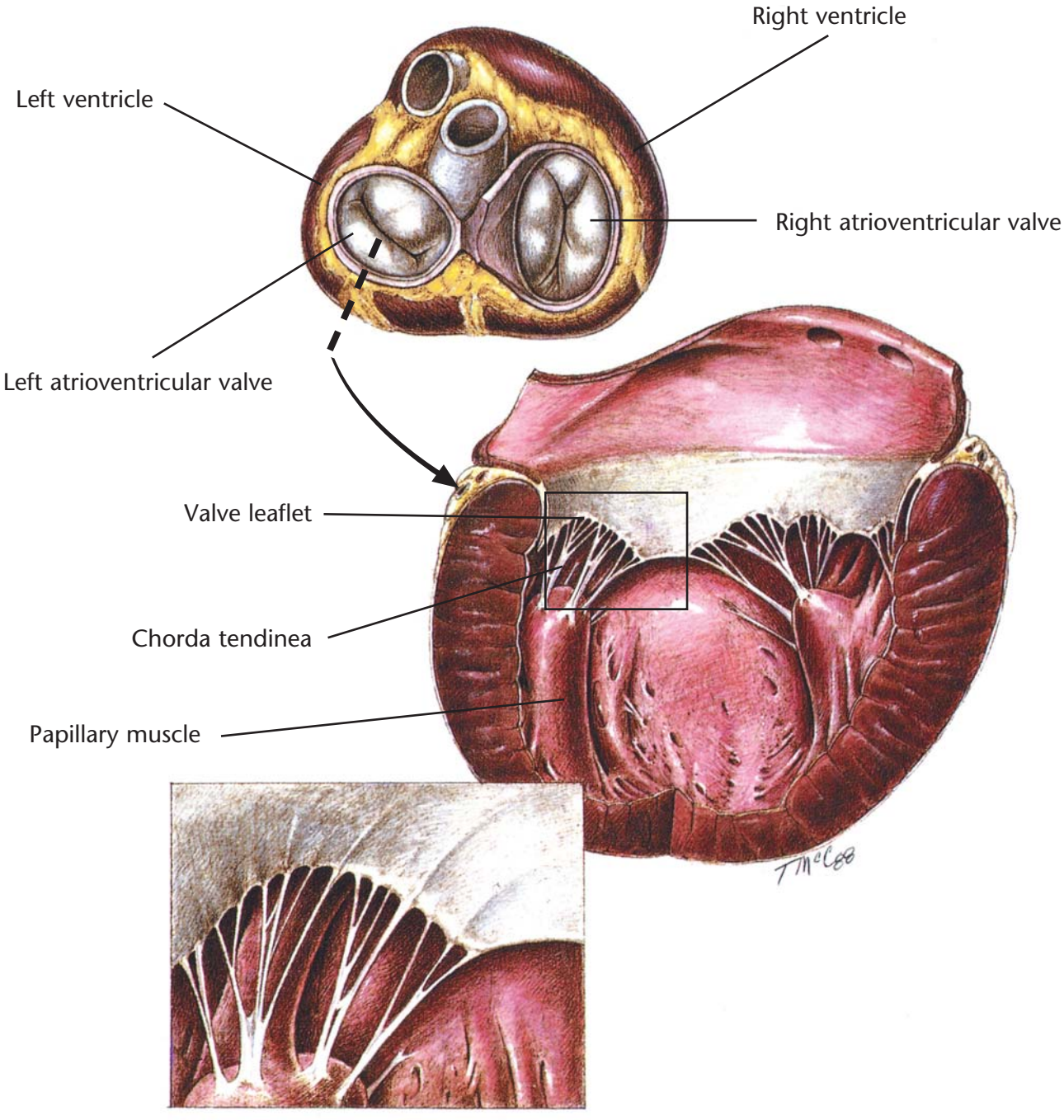
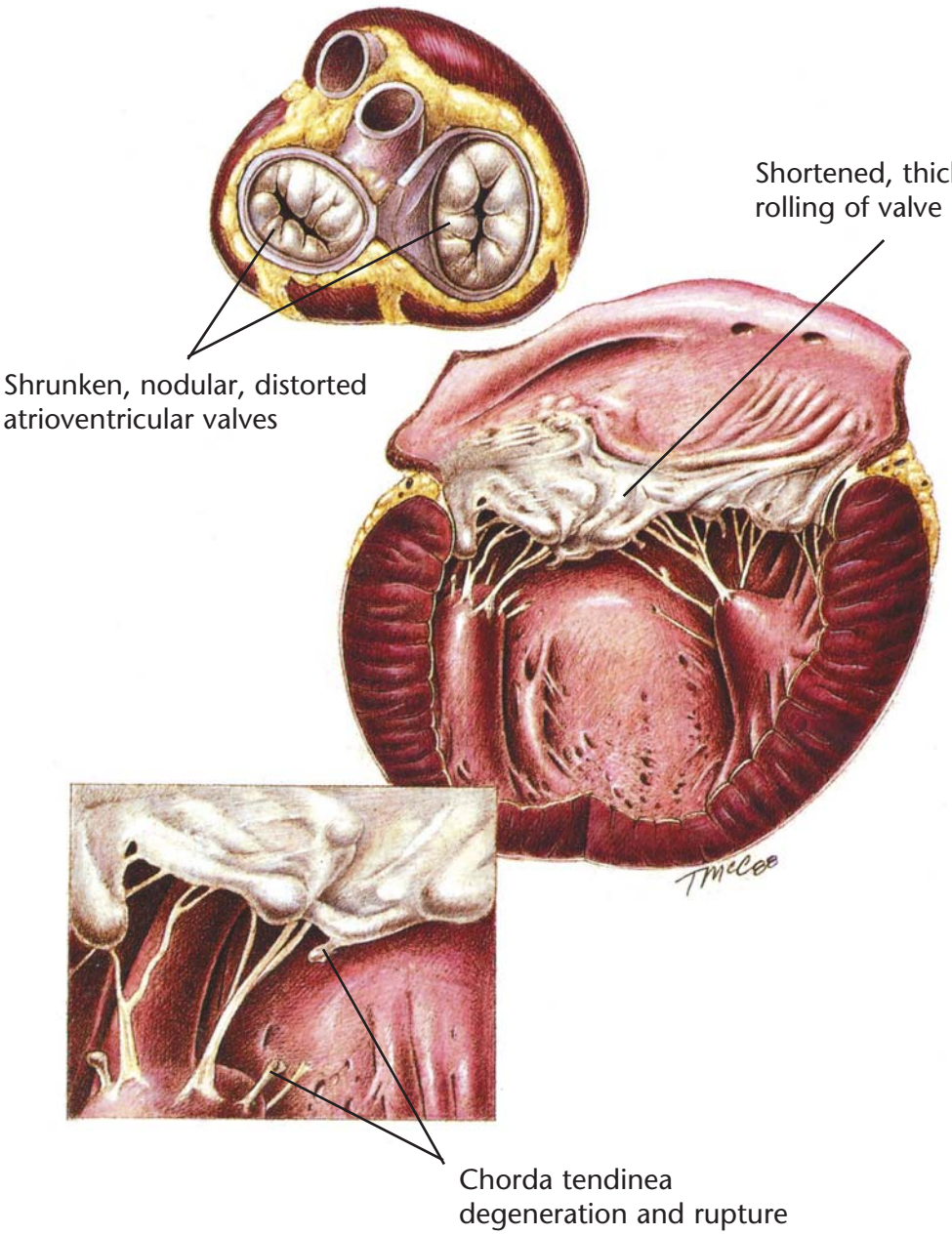
Normal Heart



Chronic Valvular Disease



Chronic Valvular Disease

Diagnostic Plan

History
Physical examination
Chest auscultation
Chest palpation
Blood work
Urinalysis
Chest x-rays
Electrocardiography
Heartworm check
Echocardiography
Angiocardiography

Therapeutic Plan

Drugs to strengthen the heart
Diuretics
Drugs that dilate
blood vessels
Drugs that correct
abnormal heart rhythms
Exercise restriction

Dietary Plan

A mildly restricted sodium diet
or a moderately restricted
sodium diet
If necessary, change to a
severely restricted sodium diet

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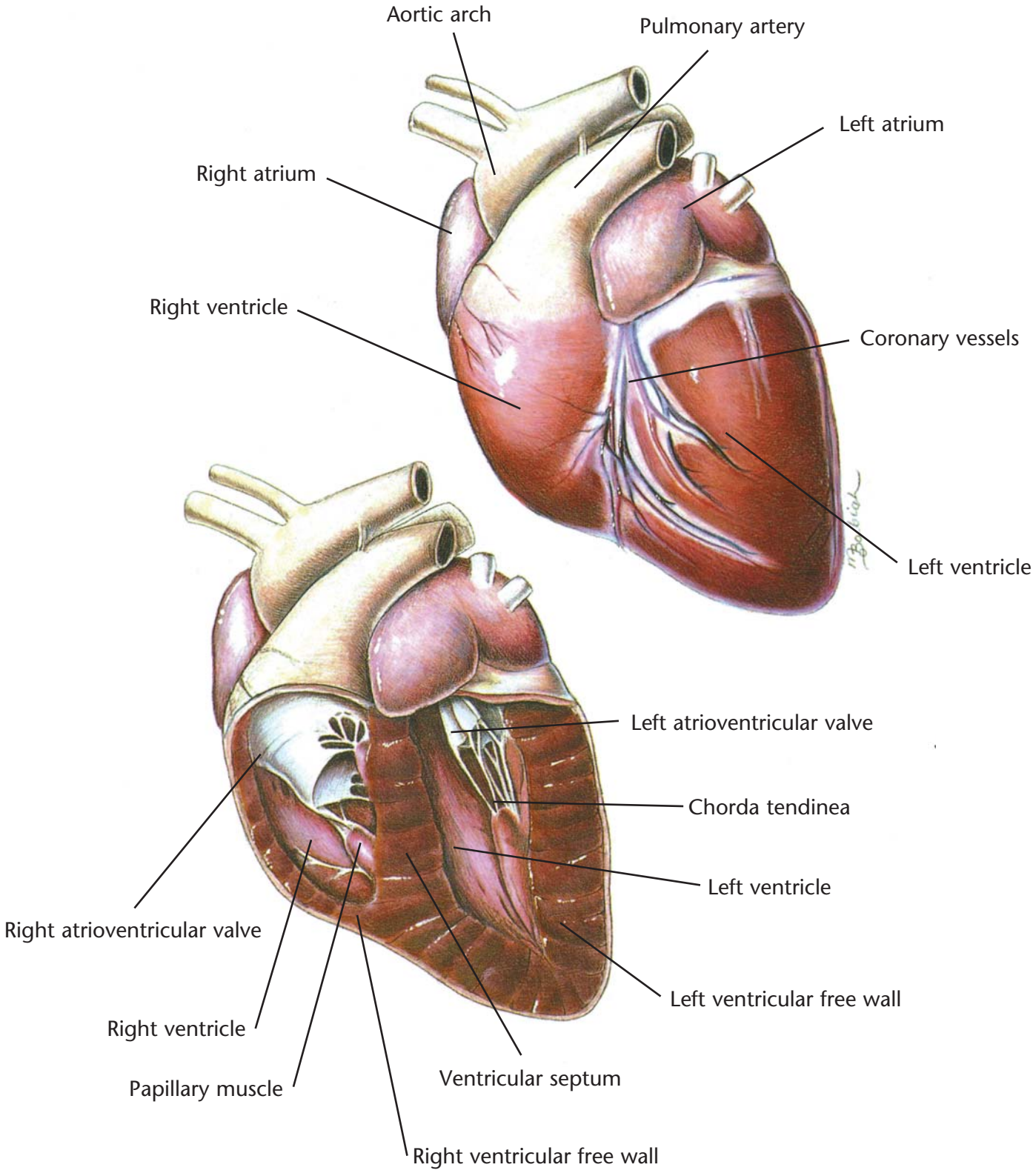
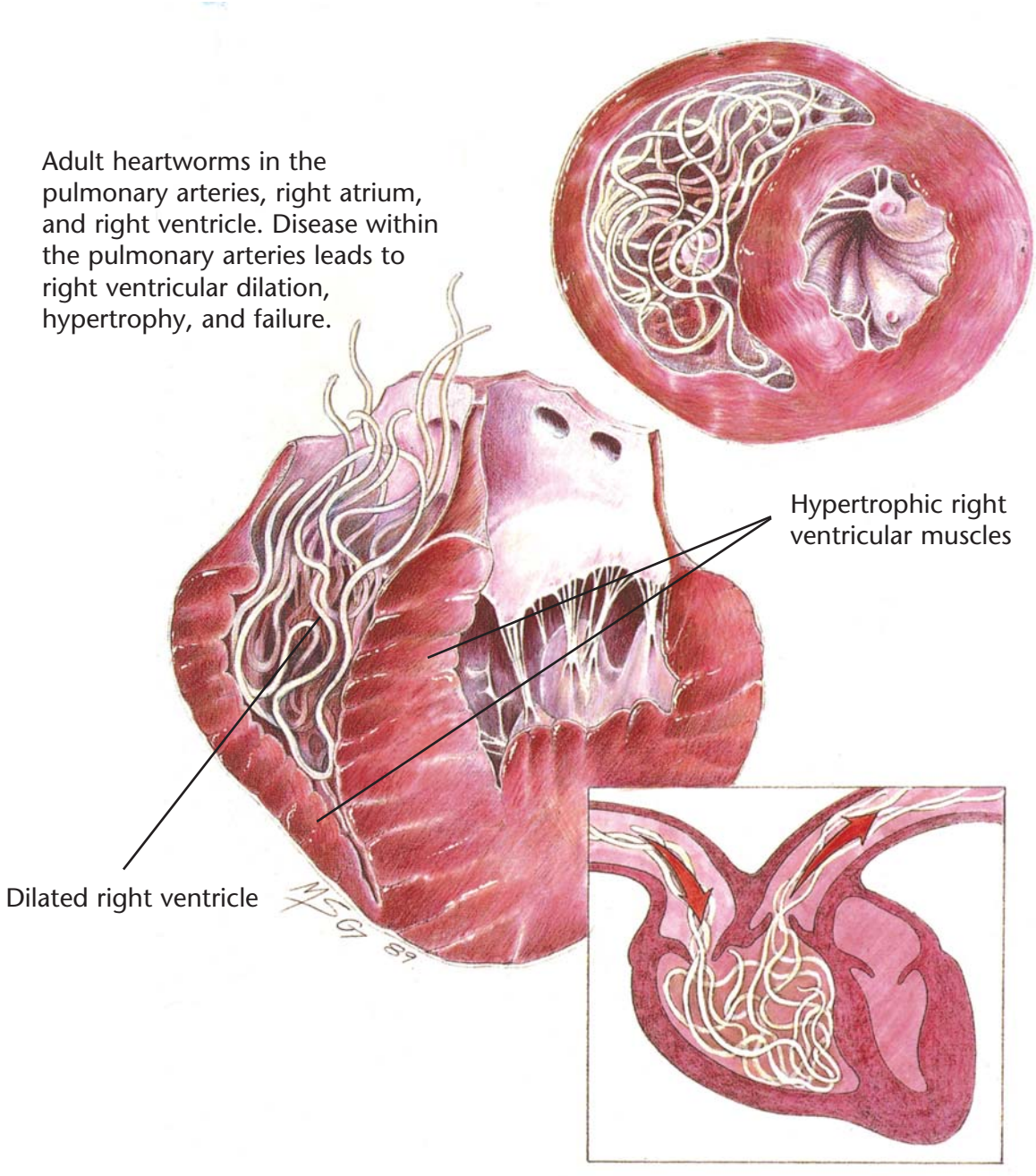
Normal Canine Heart



Heartworm Disease



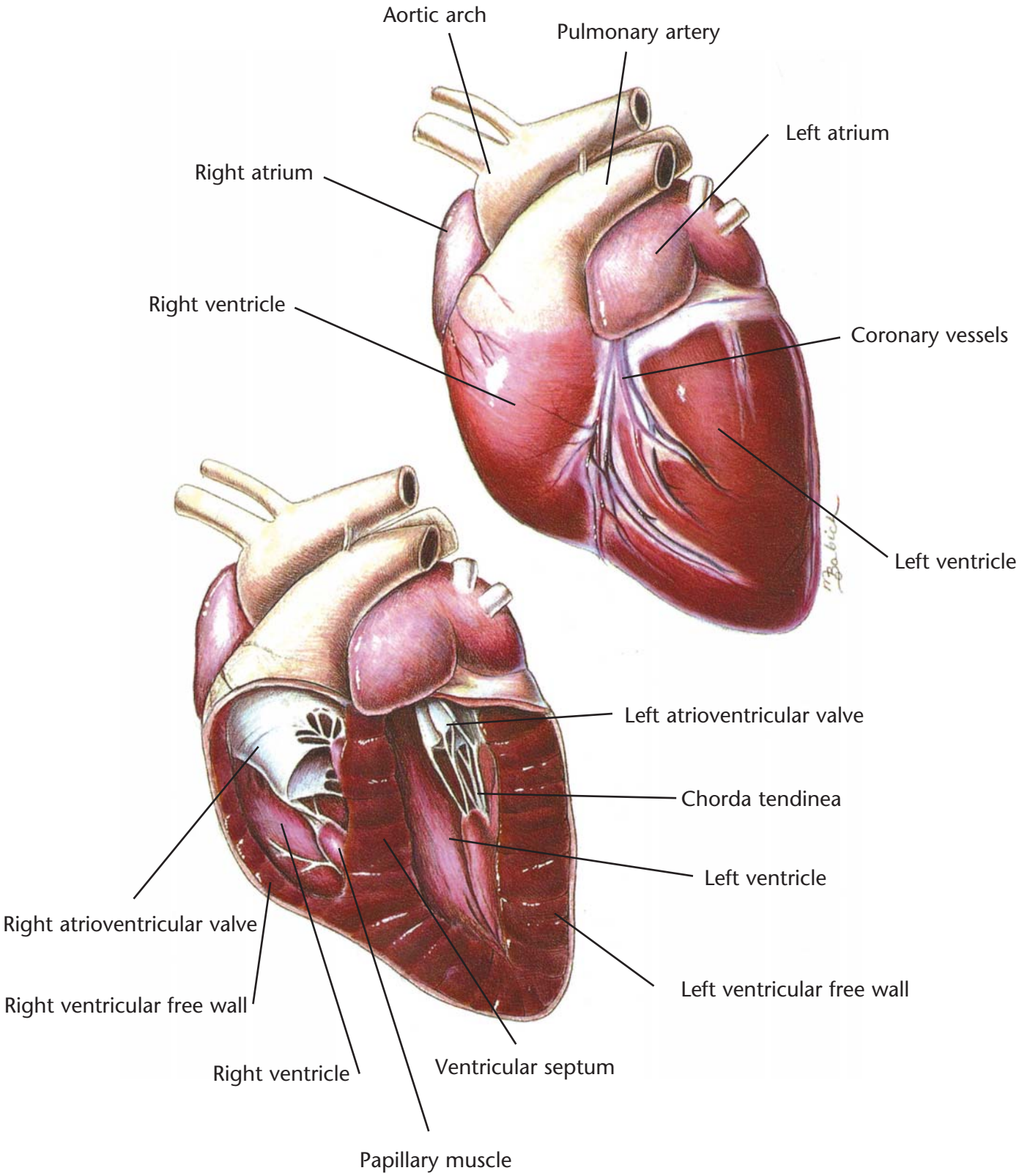
Heartworm Disease

Diagnostic Plan
History
Physical examination
Heartworm check
Blood work
Urinalysis
Chest x-rays
Electrocardiography
Echocardiography

Therapeutic Plan
Drugs to kill adult worms
Restricted exercise
Aspirin
Corticosteroids
Drugs to kill larvae in the bloodstream
Prevention
Surgery

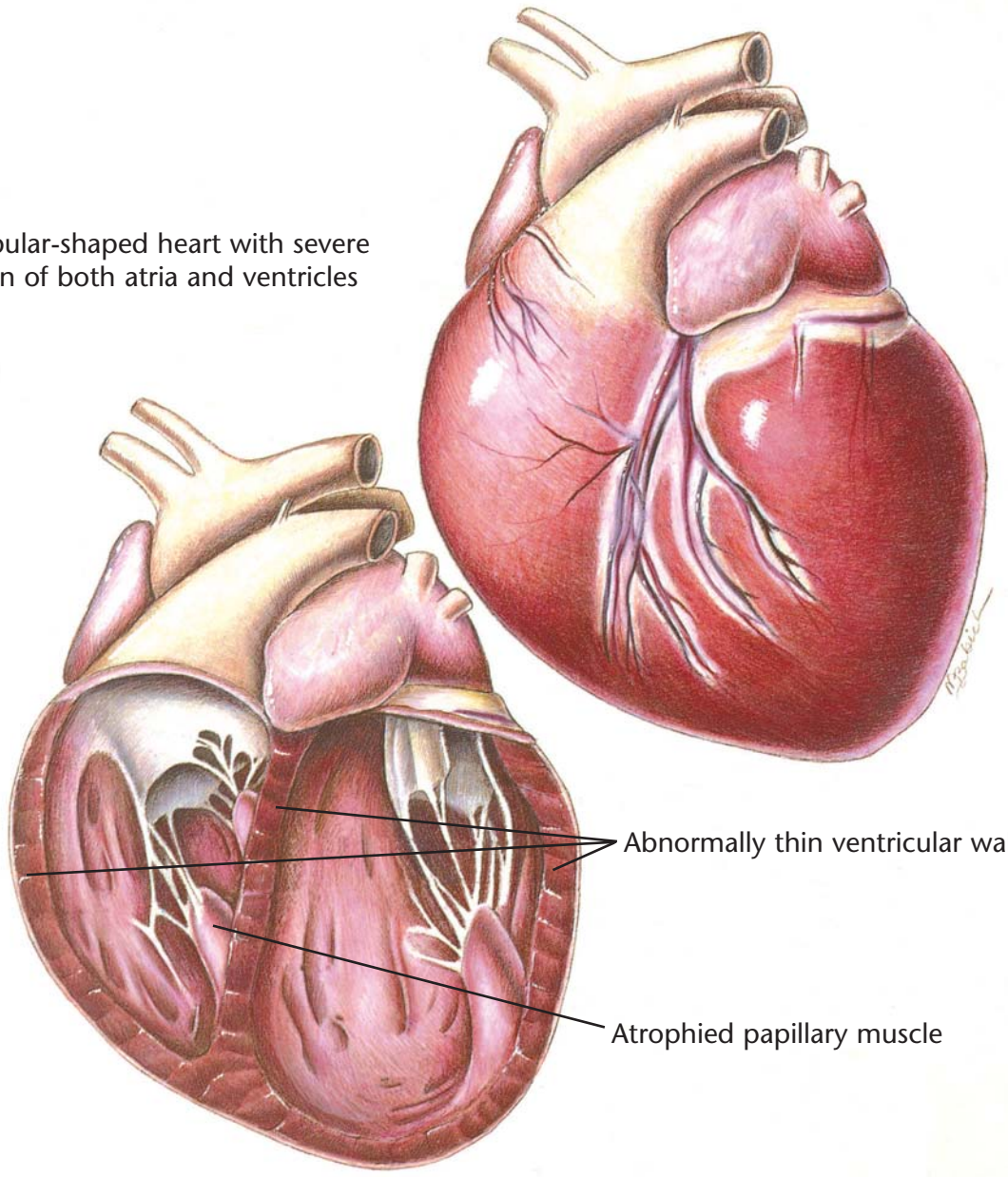
Dietary Plan
A diet with controlled levels of protein, phosphorus and sodium
Consider body condition

Normal Canine Heart



Canine Dilated Cardiomyopathy

A globular-shaped heart with severe dilation of both atria and ventricles



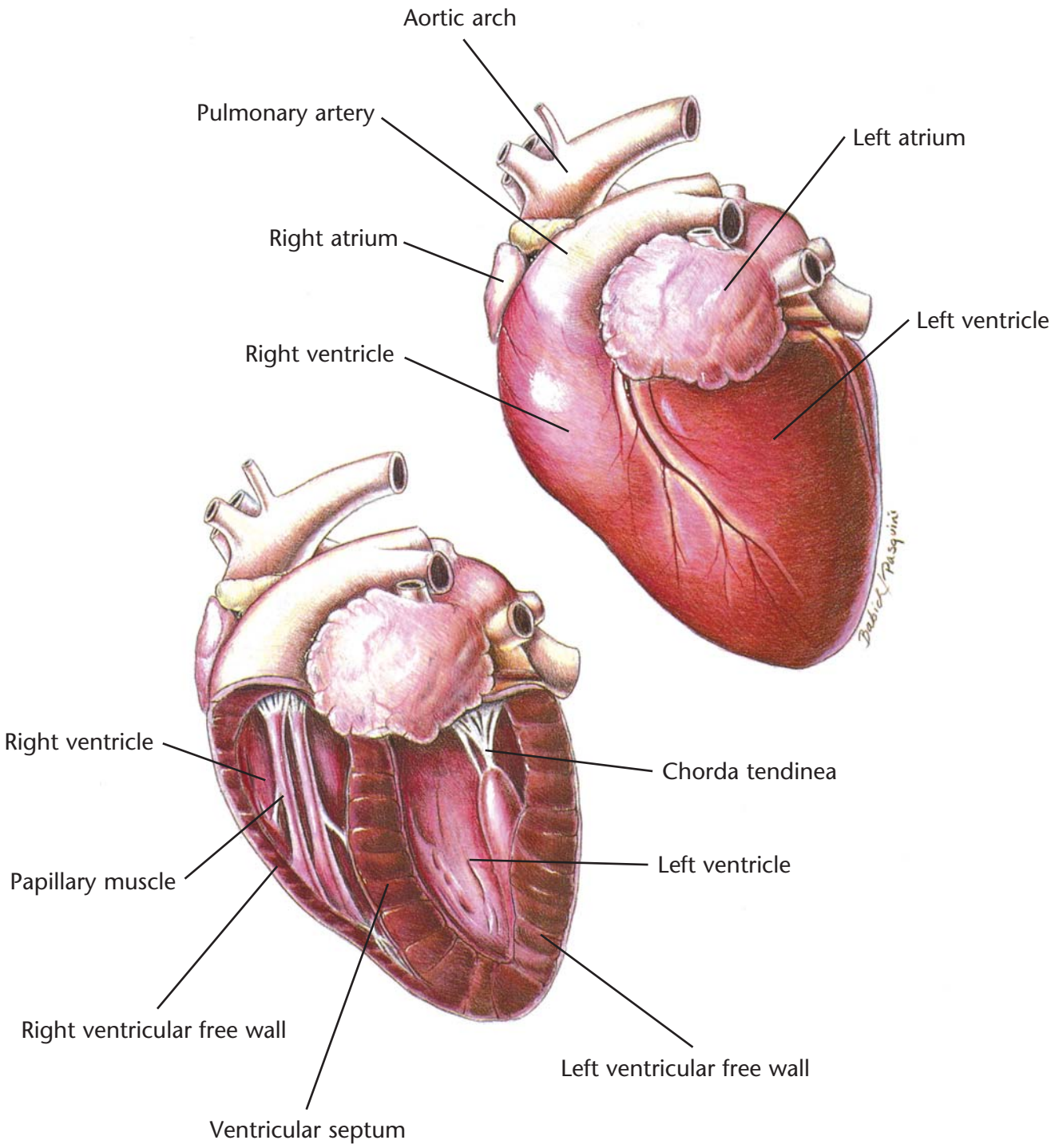
Canine Dilated Cardiomyopathy

Diagnostic Plan
History
Physical examination
Urinalysis
Blood work
Chest x-rays
Electrocardiography
Echocardiography
X-rays of the heart after dye injection

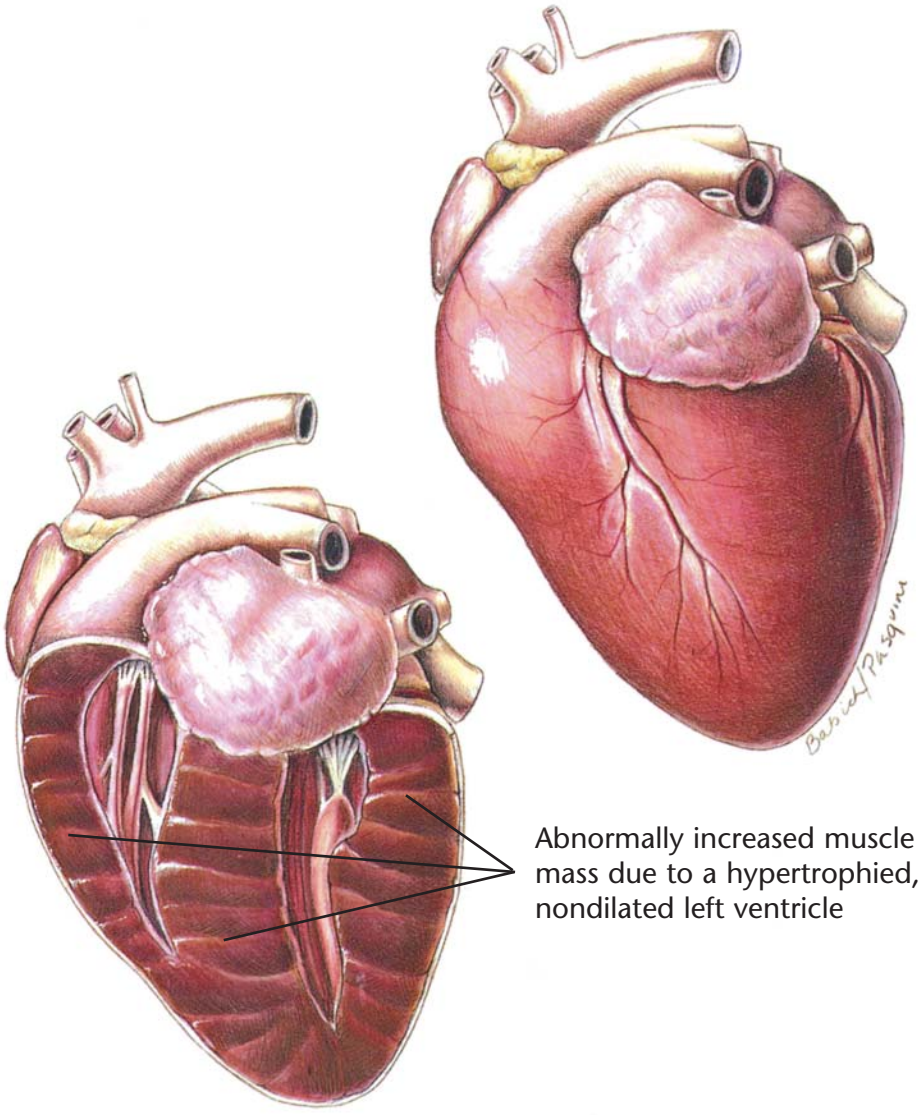
Therapeutic Plan
Enforced rest
Removal of fluid from the chest and abdomen
Diuretics
Drugs that strengthen the heart
Drugs that dilate blood vessels
Bronchodilators
Oxygen therapy

Dietary Plan
A diet that avoids excess levels of sodium

Normal Feline Heart



Feline Hypertrophic Cardiomyopathy



Feline Hypertrophic Cardiomyopathy

Diagnostic Plan

History
Physical examination
Chest auscultation
Palpation of femoral pulses and hindlimb musculature
Blood work
Urinalysis
Electrocardiography
Chest x-rays
Echocardiography
X-rays of the heart and abdominal blood vessels after dye injection

Therapeutic Plan

Enforced rest
Bronchodilators
Oxygen therapy
Removal of fluid from the chest and abdomen
Drugs that dilate blood vessels
Aspirin
Beta blockers
Heparin
Surgery

Dietary Plan

A diet that avoids excess levels of sodium

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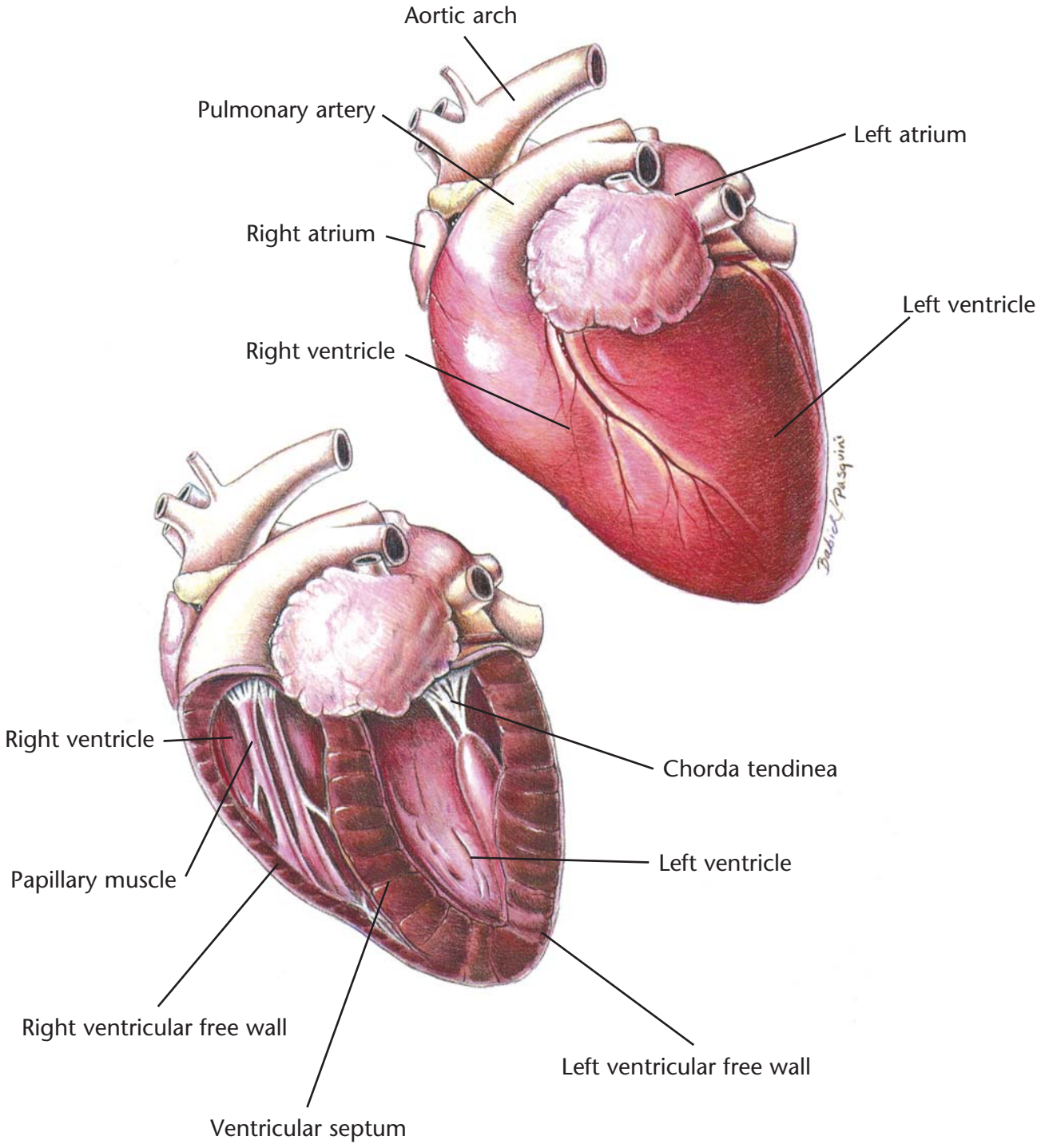
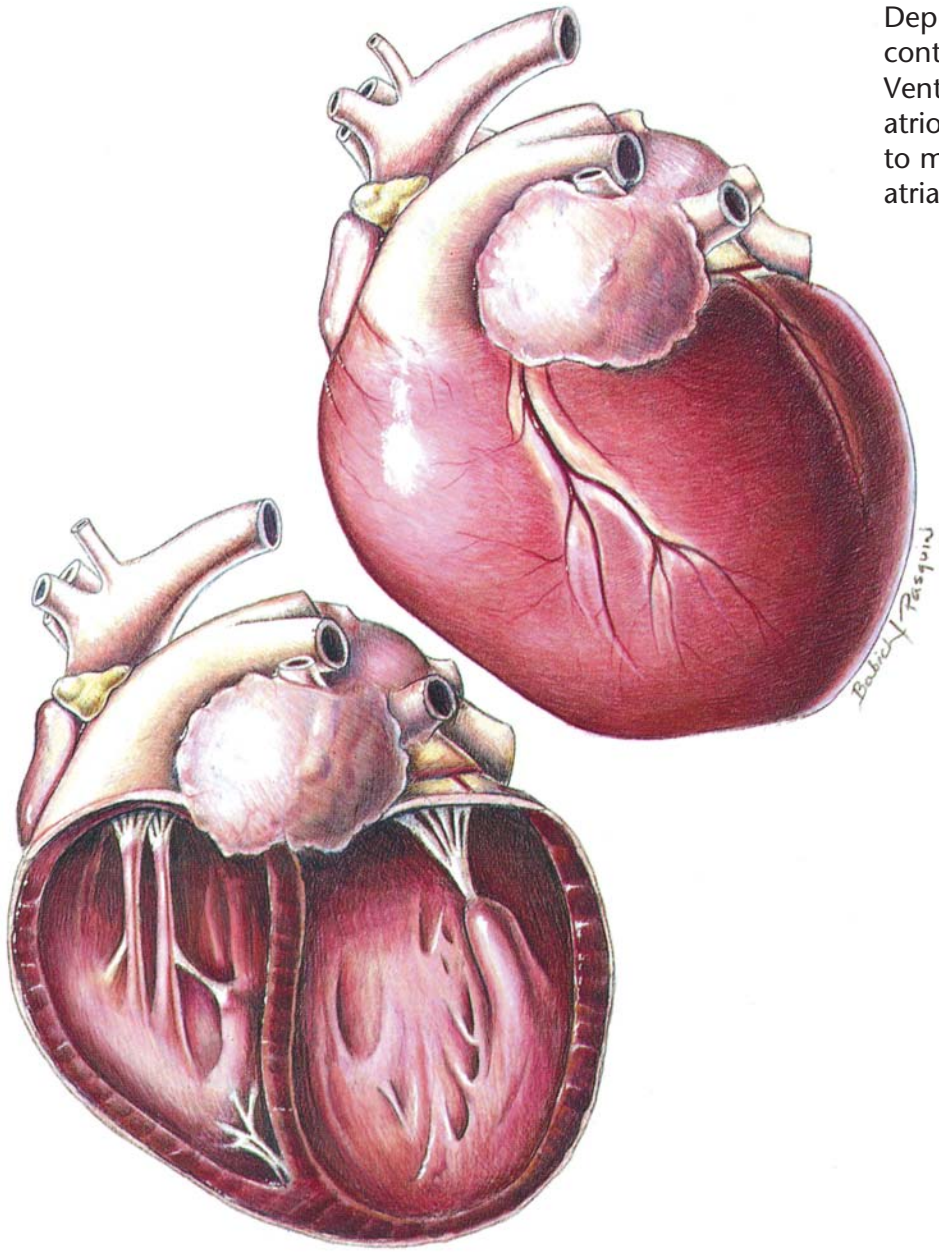
Normal Feline Heart



Feline Dilated Cardiomyopathy



A globular heart with severe dilation of the four chambers. Depressed ventricular contractile performance occurs. Ventricular dilation distorts the atrioventricular valves leading to mitral regurgitation and atrial enlargement.

Feline Dilated Cardiomyopathy

Diagnostic Plan

History
Physical examination
Chest auscultation
Palpation of femoral pulses and hindlimb musculature
Blood work
Urinalysis
Electrocardiography
Chest x-rays
Echocardiography
X-rays of the heart and abdominal blood vessels after dye injection
Plasma taurine analysis

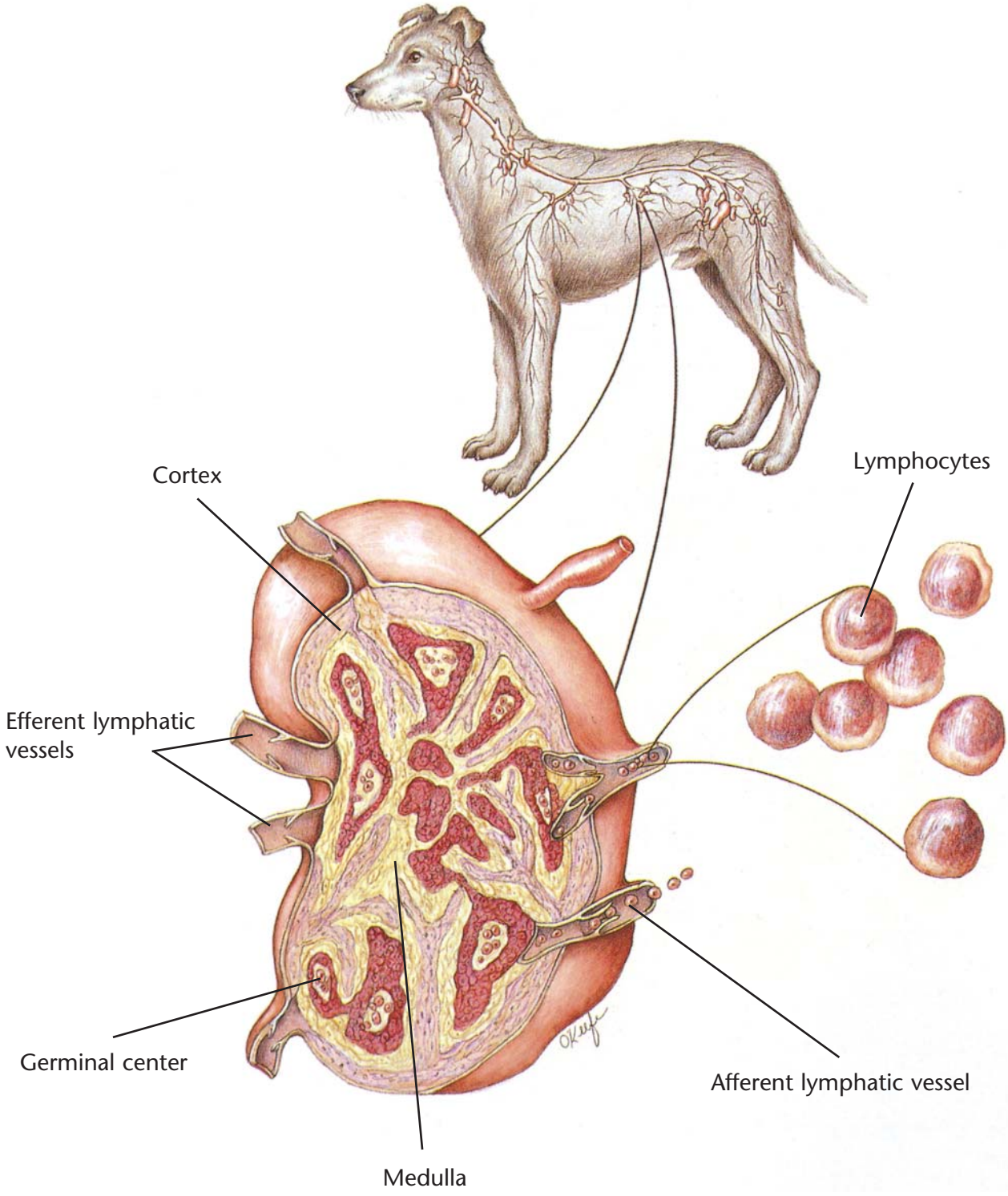
Therapeutic Plan

Enforced rest
Diuretics
Bronchodilators
Oxygen therapy
Removal of fluid from the chest and abdomen
Drugs that dilate blood vessels
Drugs that strengthen the heart
Heparin
Surgery

Dietary Plan

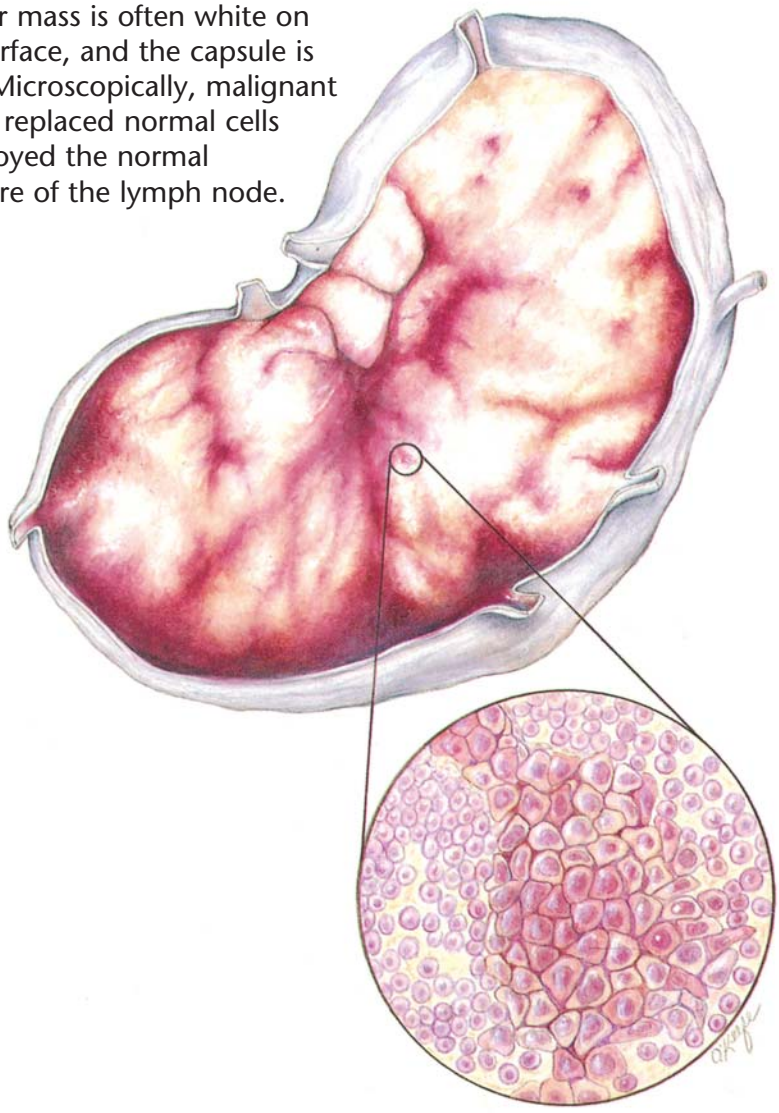
A diet that contains adequate levels of taurine and avoids excess levels of sodium

Normal Lymph Node Architecture



Lymphosarcoma

The tumor mass is often white on the cut surface, and the capsule is thinned. Microscopically, malignant cells have replaced normal cells and destroyed the normal architecture of the lymph node.



Lymphosarcoma

Diagnostic Plan
History
Physical examination
Blood work
FeLV test (for cats)
X-rays
Urinalysis
Biopsy of tissue
Cell studies
Endoscopy
Exploratory surgery
Examinations of chest and abdominal fluid
Bone marrow biopsy
Cerebral spine fluid examination

Therapeutic Plan
Supportive therapy
Chemotherapy
Surgical excision
Radiation

Dietary Plan
A diet based on individual patient evaluation including body condition and other organ system involvement or disease

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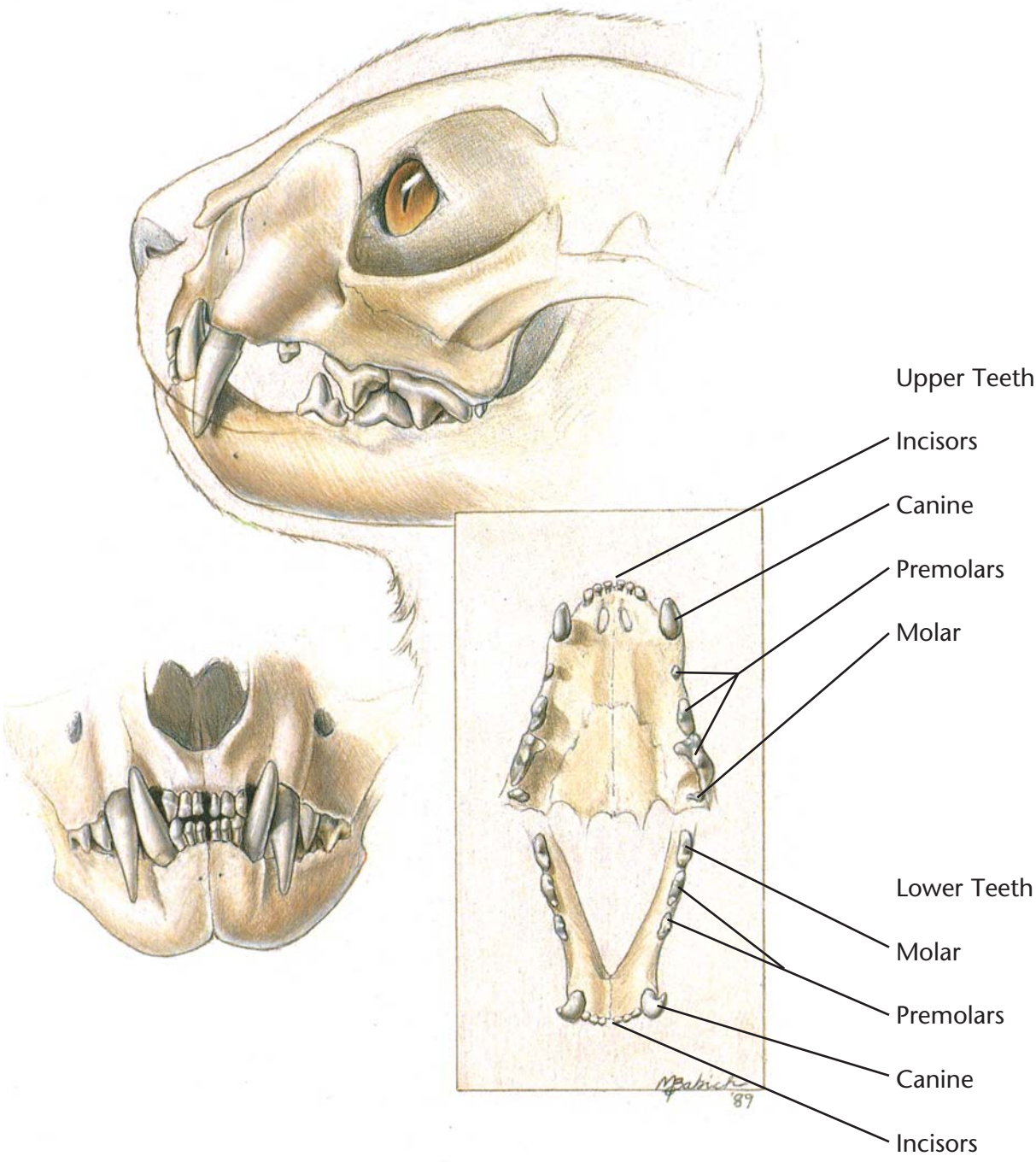
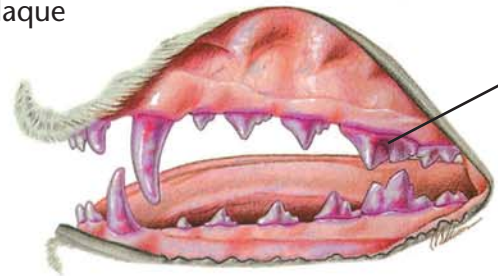
Normal Feline Dentition



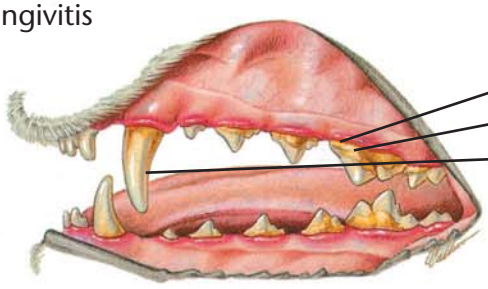
Periodontal Disease

Normal Dental Examination

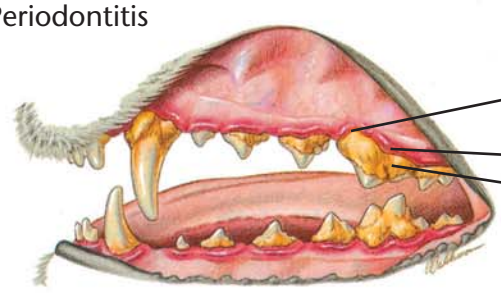
Plaque



Gingivitis



Periodontitis



Periodontal Disease

Diagnostic Plan
History
Physical examination
Oral examination
Dental x-rays

Therapeutic Plan
Tooth scaling above and below the gumline
Tooth polishing
Extraction
Surgery
Antibacterials
Tooth brushing

Dietary Plan
Postsurgery or extractions, a food with nutritional characteristics that support tissue repair.
A soft food may minimize postprocedural discomfort.
Long term, a food with formulation and texture that slows the accumulation of plaque and tartar.

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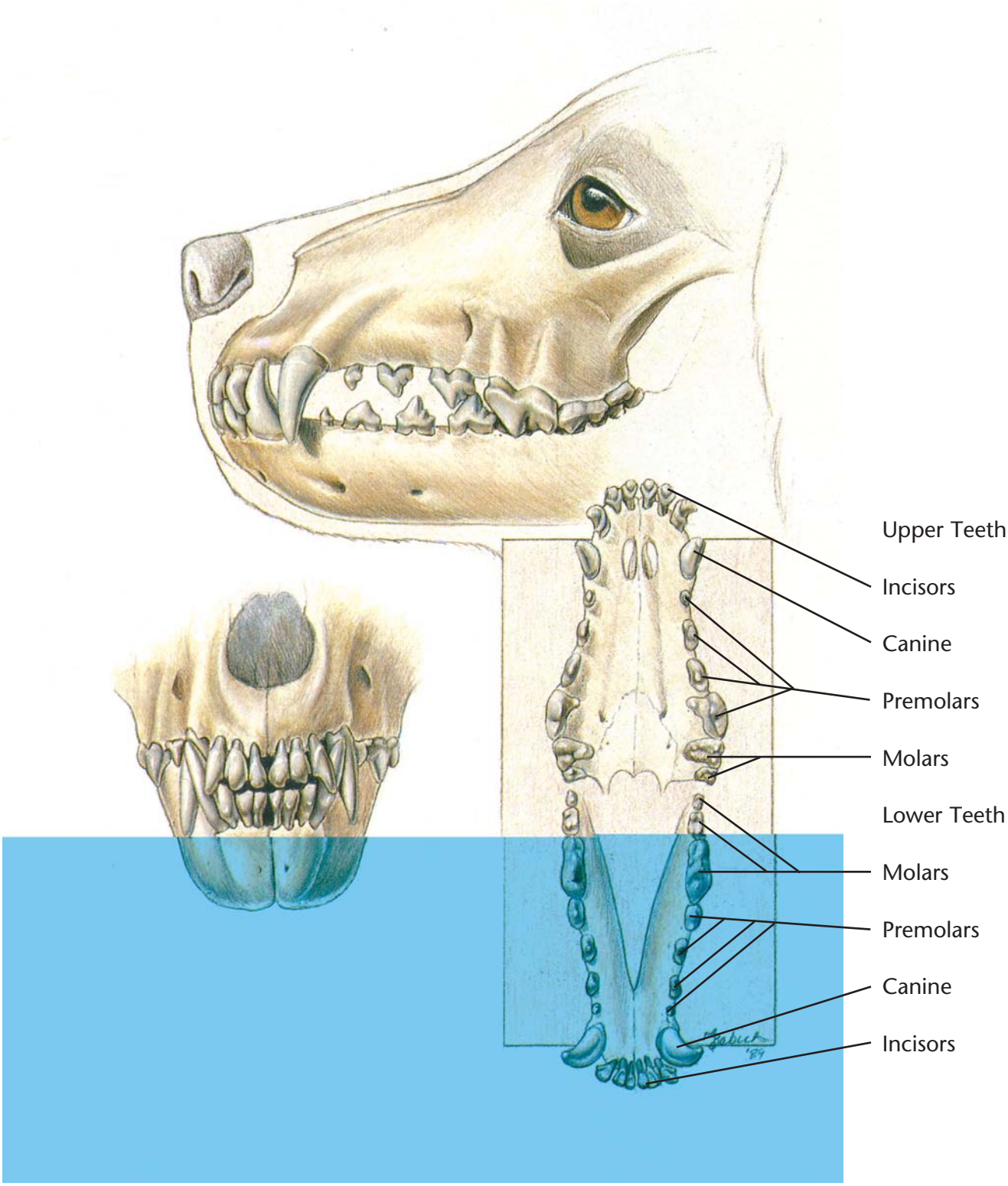
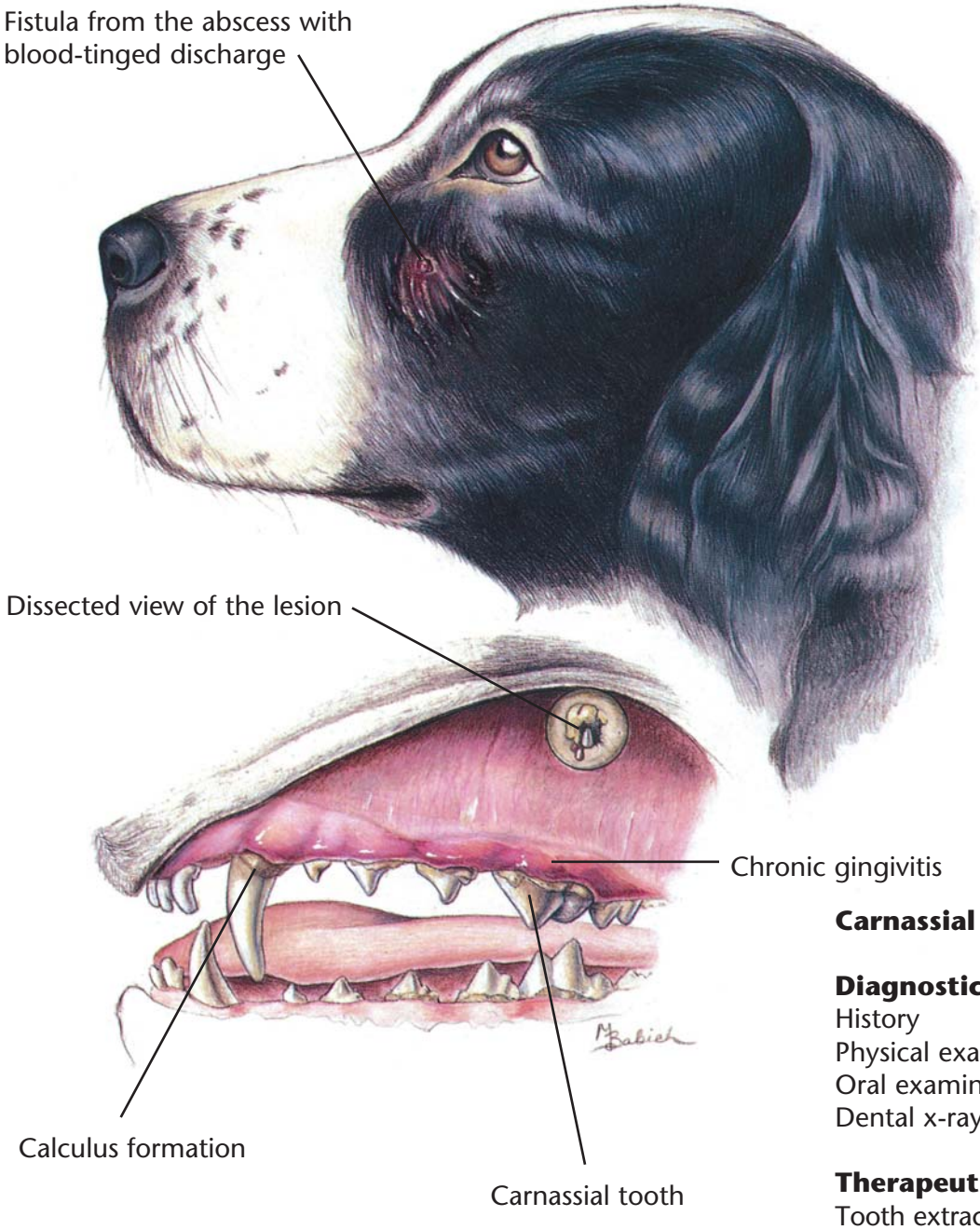
Normal Canine Dentition



Carnassial Tooth Abscess



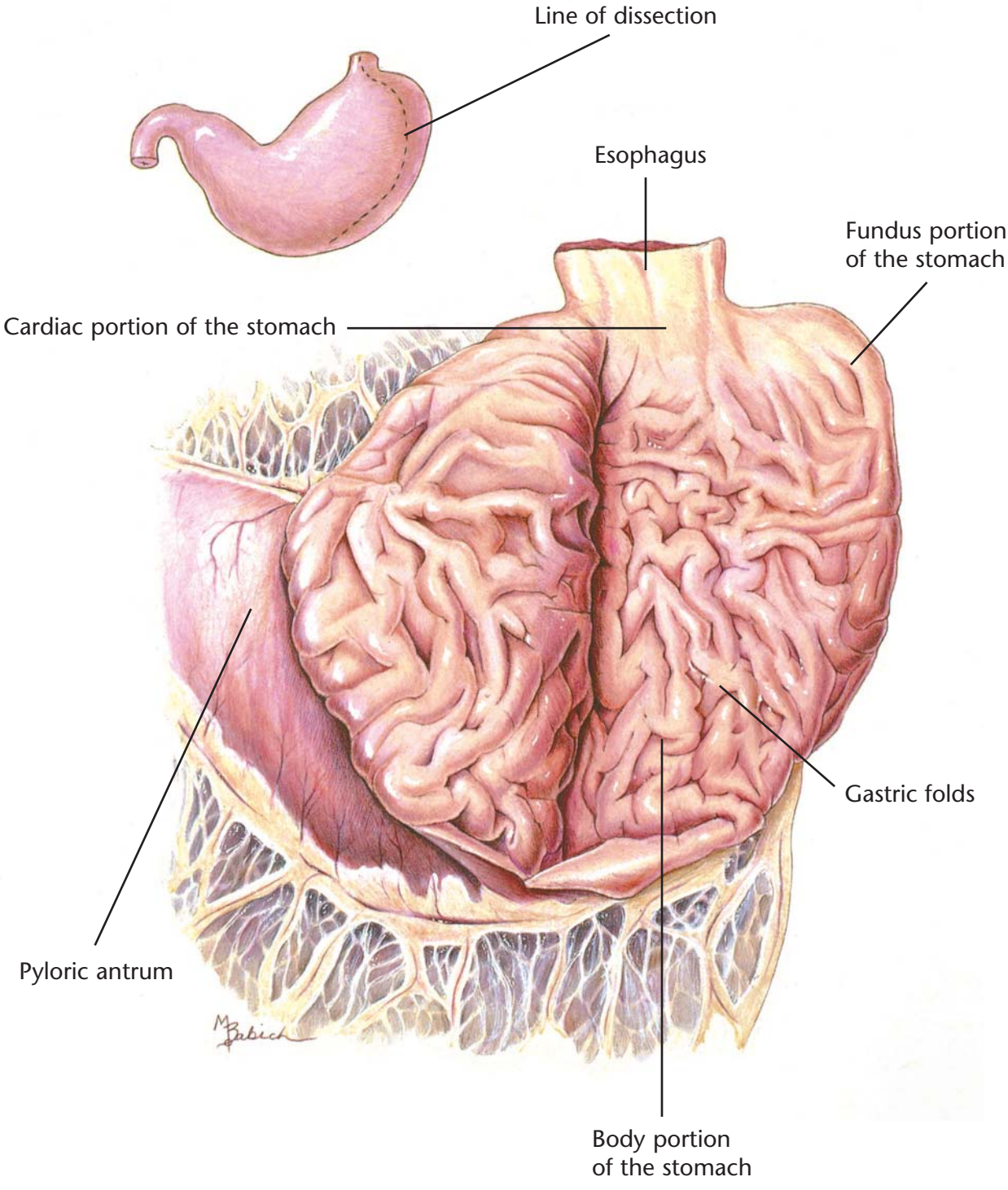
Carnassial Tooth Abscess

Diagnostic Plan
History
Physical examination
Oral examination
Dental x-rays

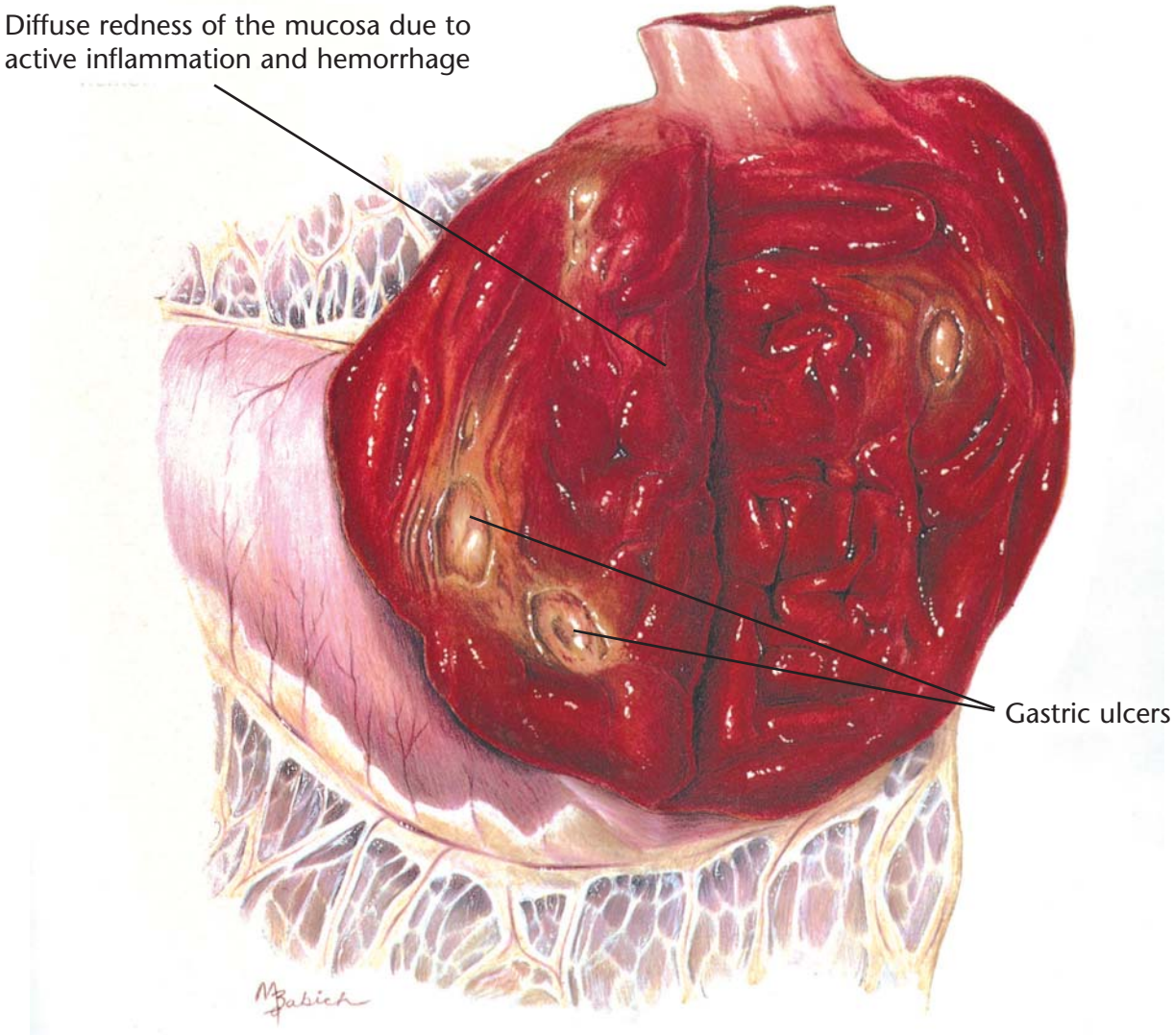
Therapeutic Plan
Tooth extraction
Root canals
Antibiotics

Dietary Plan
A diet based on overall patient evaluation including body condition and other organ system involvement
A soft diet may minimize postsurgical pain

Normal Stomach



Hemorrhagic Gastritis with Ulcers



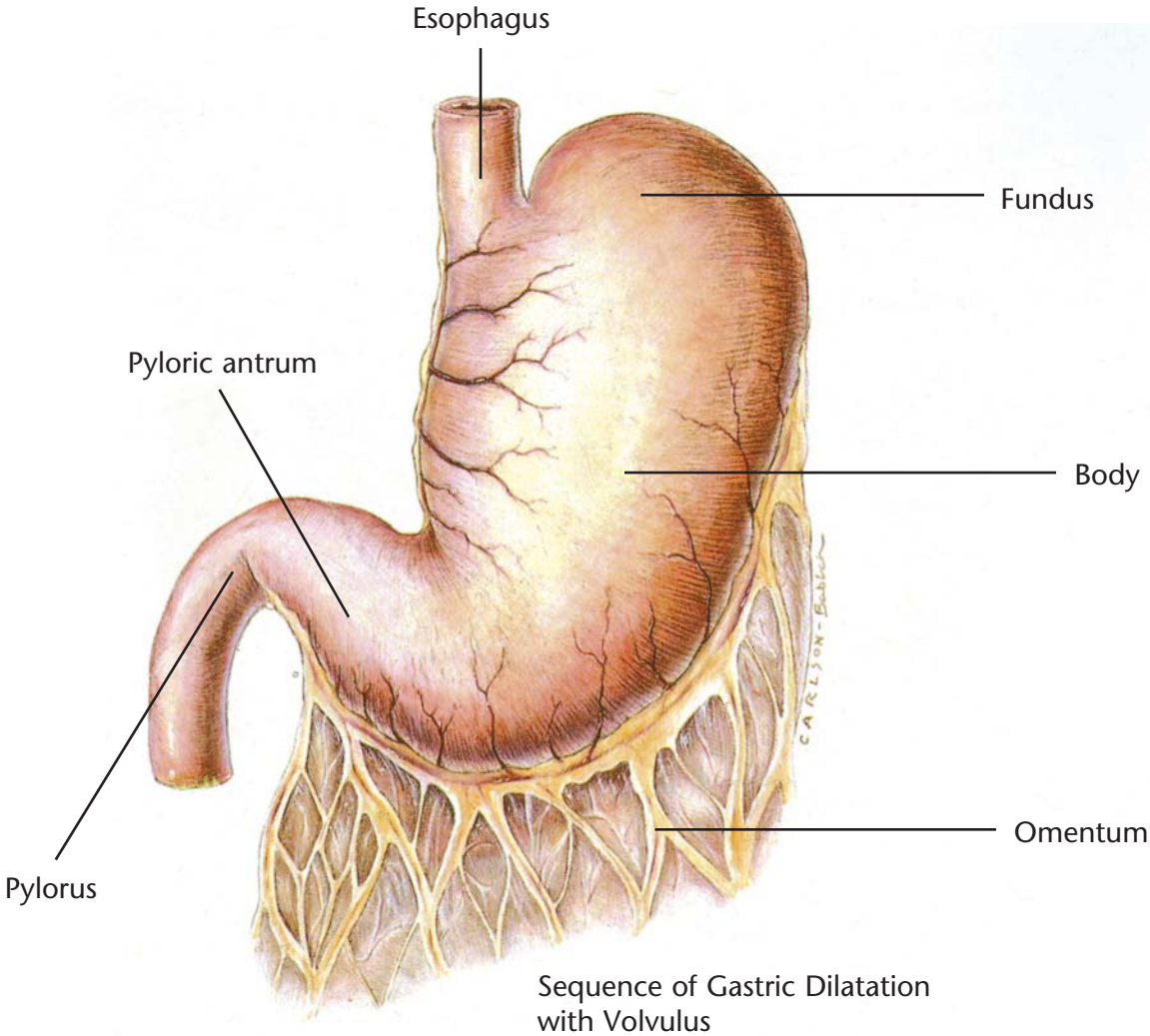
Hemorrhagic Gastritis with Ulcers

Diagnostic Plan
History
Physical examination
Blood work
Stool check for blood
Stool check for parasites
Urinalysis
X-rays of the stomach
Endoscopy
Gastric fluid analysis
Gastric biopsy

Therapeutic Plan
Nothing orally for 12 to 24 hours
Fluid therapy
Gastric lavage
Antiemetic drugs
Whole blood
Drugs to inhibit gastric acid secretion
Surgery

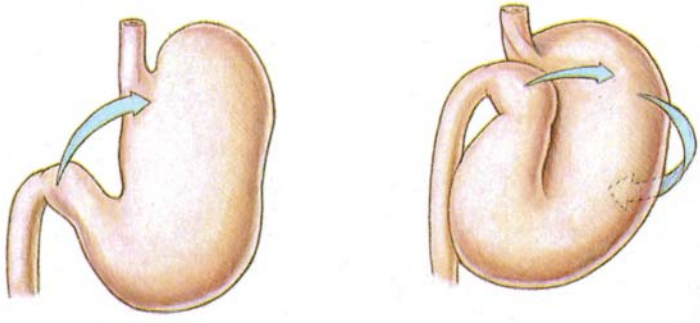
Dietary Plan
A diet based on overall patient evaluation including body condition and other organ systems
A diet with moderate protein and moderate to low levels of fat and fiber to minimize dietary-induced delays in gastric emptying
For pets with gastritis caused by food allergy, a hypoallergenic diet

Canine Normal Stomach



Sequence of Gastric Dilatation with Volvulus

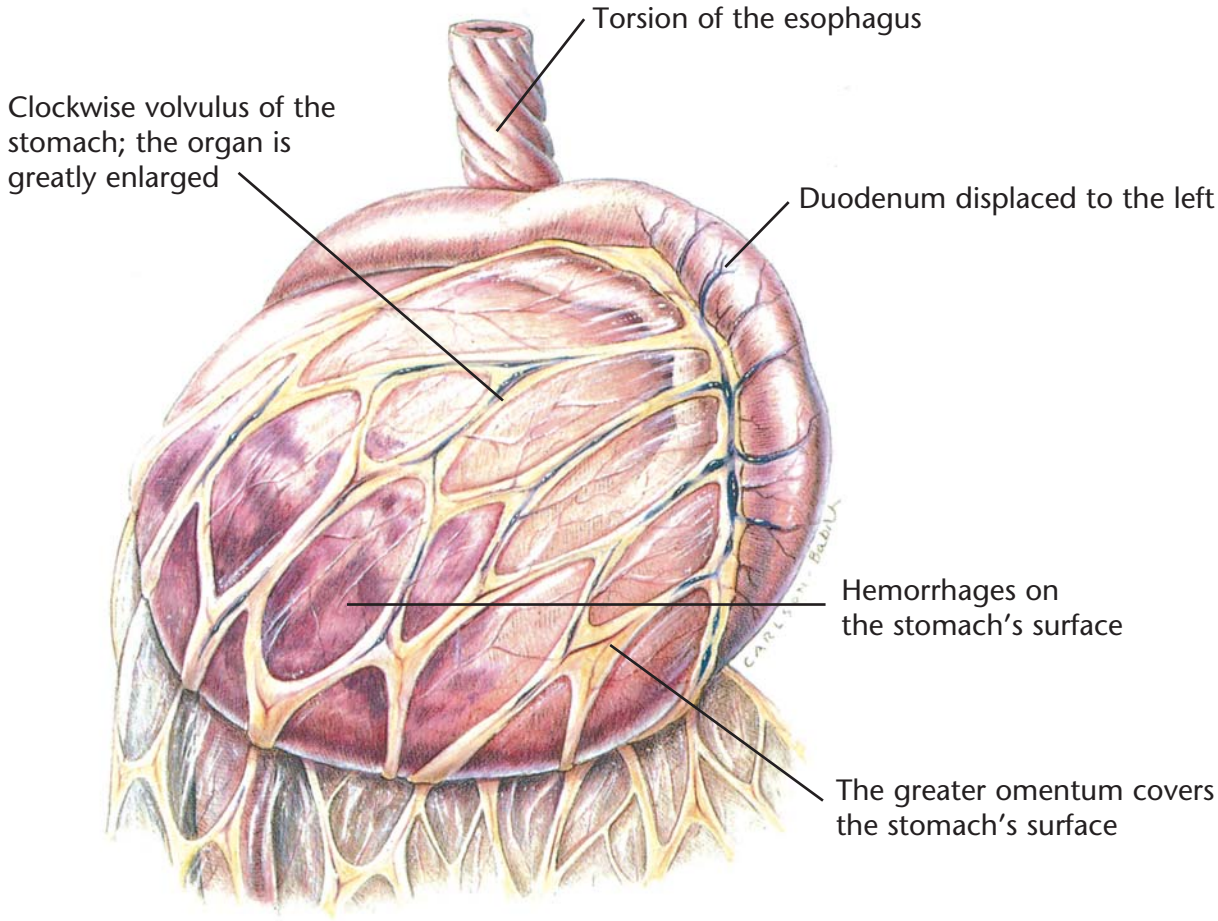
Clockwise rotation as viewed from a ventral position

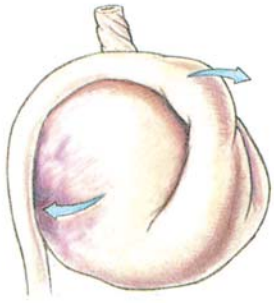


The pyloric antrum is displaced downward.

The pylorus crosses the midline, passes underneath the distended proximal part of stomach, and moves upward along the left abdominal wall.

Canine Gastric Dilatation with Volvulus





The gastric fundus moves ventrally and becomes located in the ventral abdomen.

The continuing gastric dilatation displaces the greater curvature ventrally.

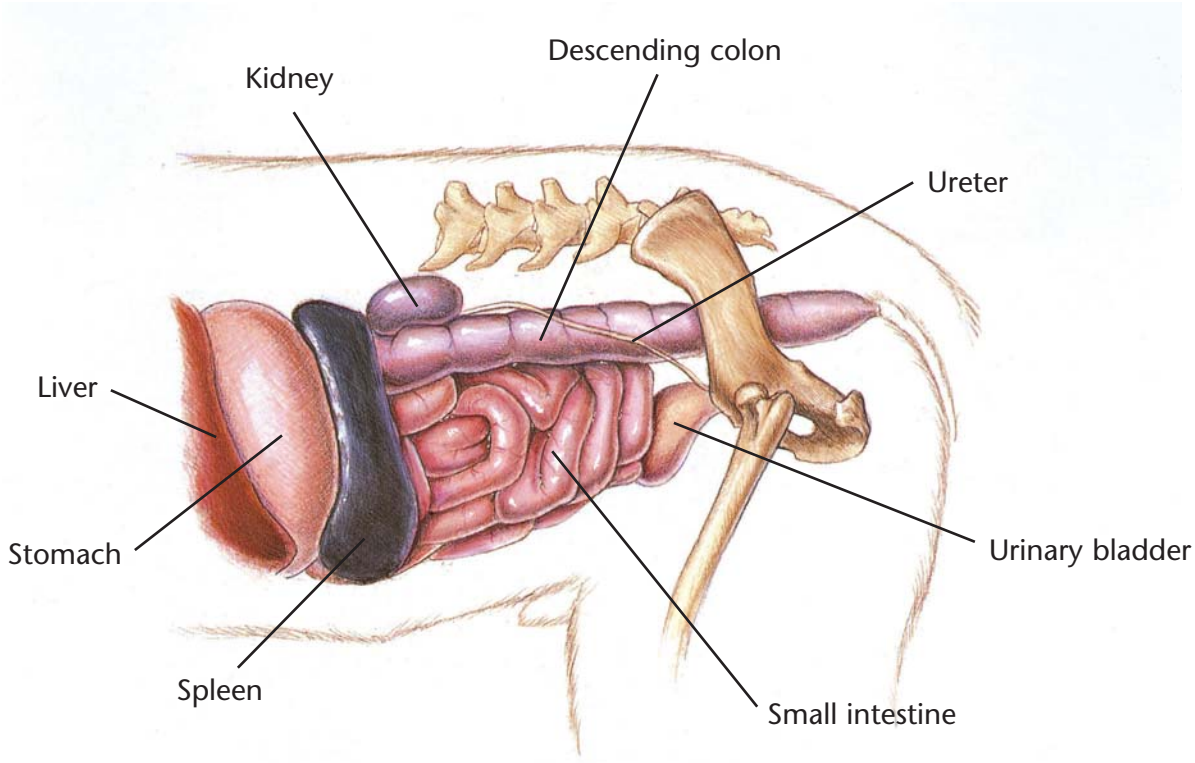
Gastric Dilatation with Volvulus

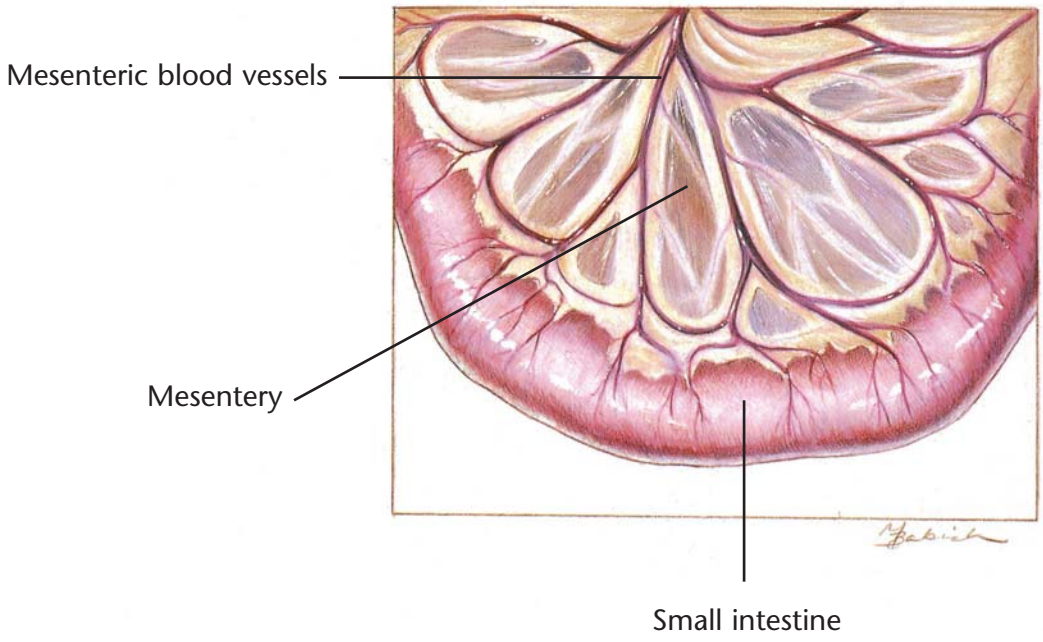
Diagnostic Plan
History
Physical examination
X-ray of the stomach
Blood work

Therapeutic Plan
Stomach distention relief
Shock therapy
Surgery

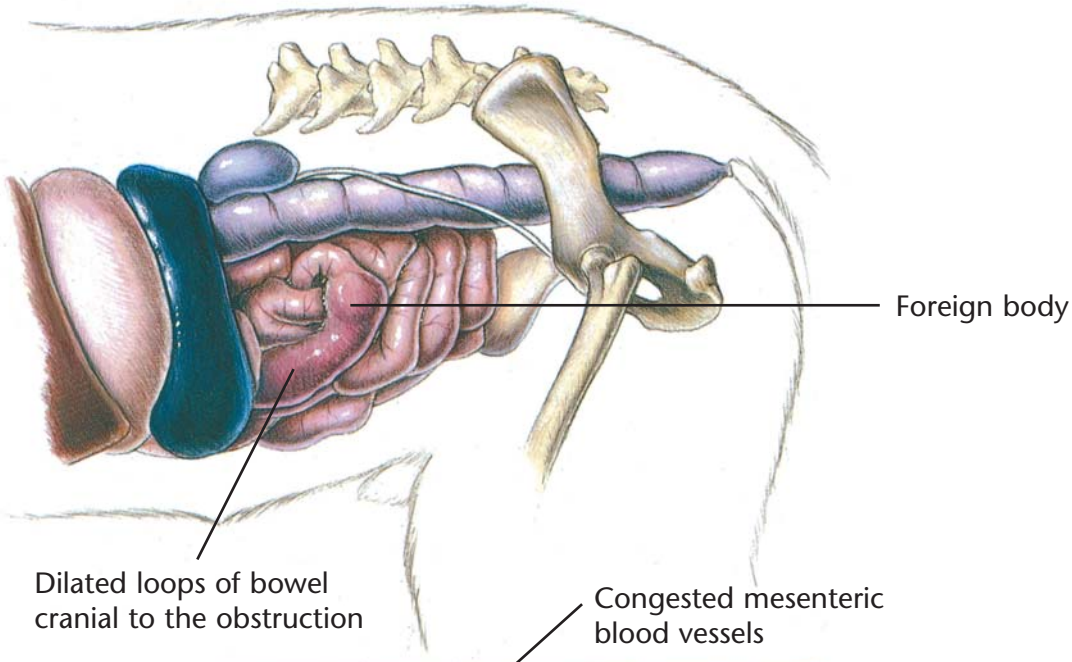
Dietary Plan
A low-residue diet, fed in small portions
Avoid excessive postprandial exercise

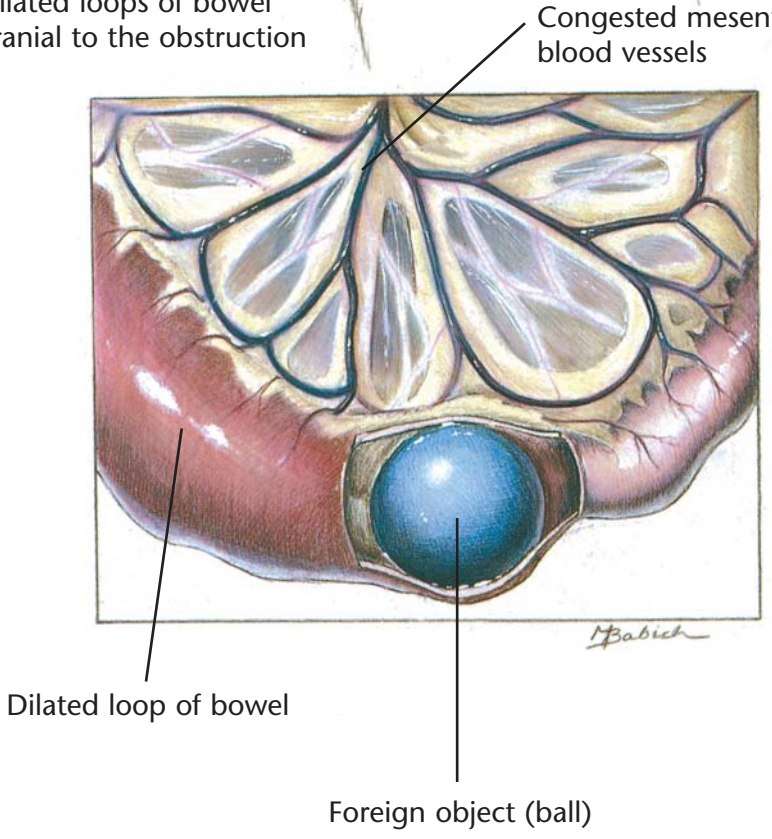
Normal Small Intestine





Foreign Bodies





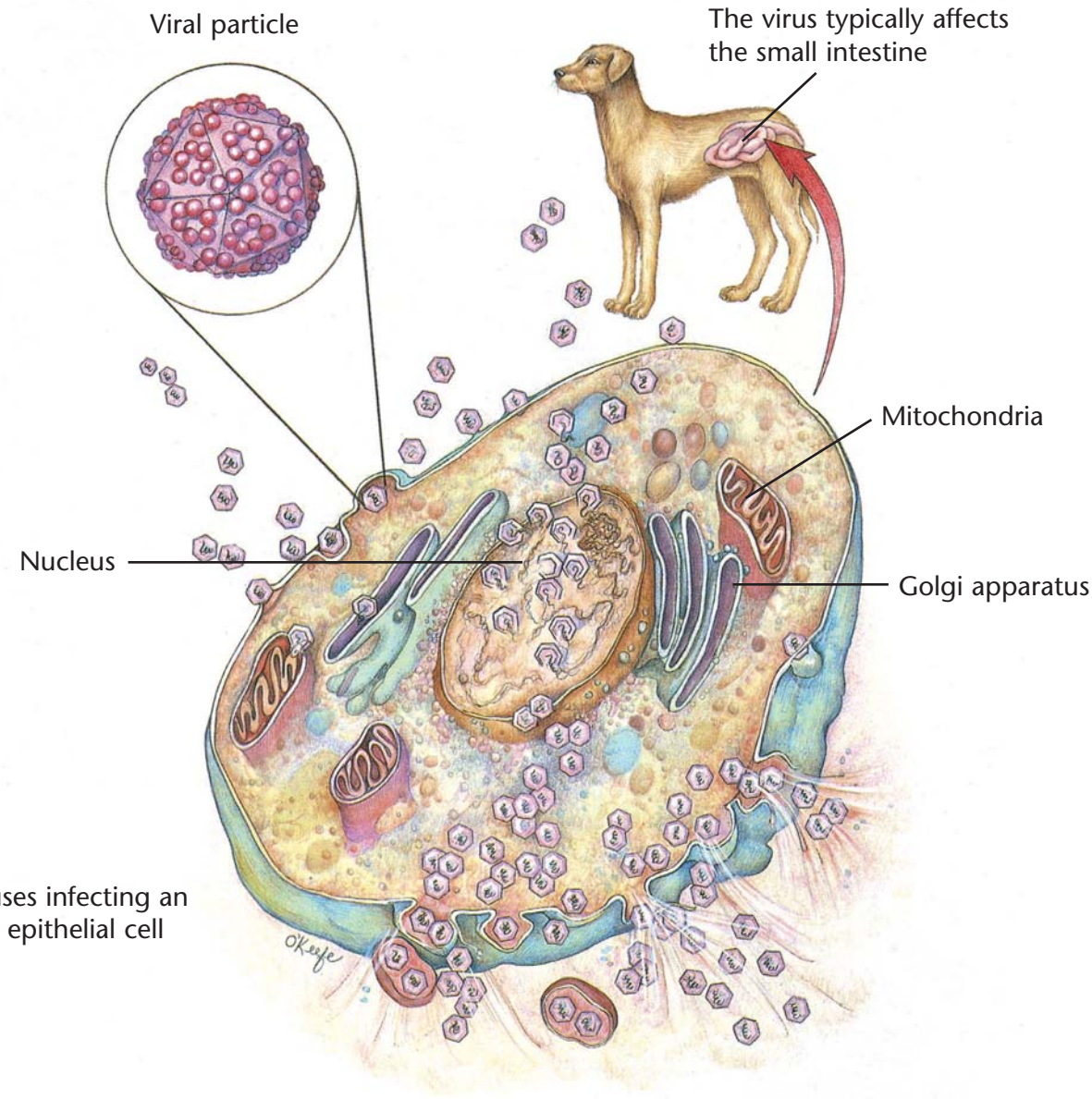
Foreign Bodies

Diagnostic Plan
History
Physical examination
Abdominal palpation
Abdominal x-rays
Upper G.I. series
Stool analysis
Blood tests
Urinalysis
Endoscopy

Therapeutic Plan
Fluid therapy
Antibacterials
Surgery (to remove foreign bodies)
Nothing by mouth for 24-48 hours

Dietary Plan
Postsurgically, a low-residue diet fed in small portions
Consider overall patient condition when determining the protein level and caloric density of the diet

Canine Parvoviral Enteritis



Parvoviruses infecting an intestinal epithelial cell

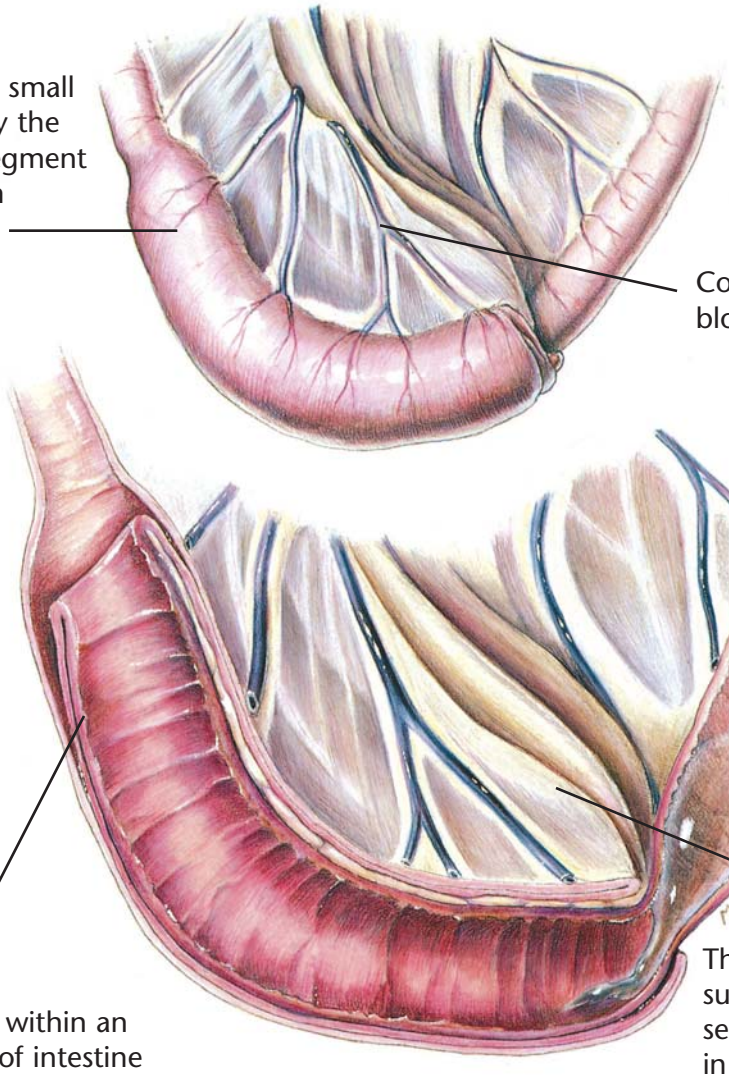
Parvoviral Enteritis

Diagnostic Plan
History
Physical examination
Stool analysis
Blood tests
Urinalysis
Abdominal x-rays
Upper G.I. series
Endoscopy with tissue biopsy

Therapeutic Plan
Nothing by mouth
Fluid therapy
Intestinal protectants
Antibacterials
Analgesics

Dietary Plan
A highly digestible diet
Consider overall patient condition when determining the protein level and caloric density of the diet

Intussusception



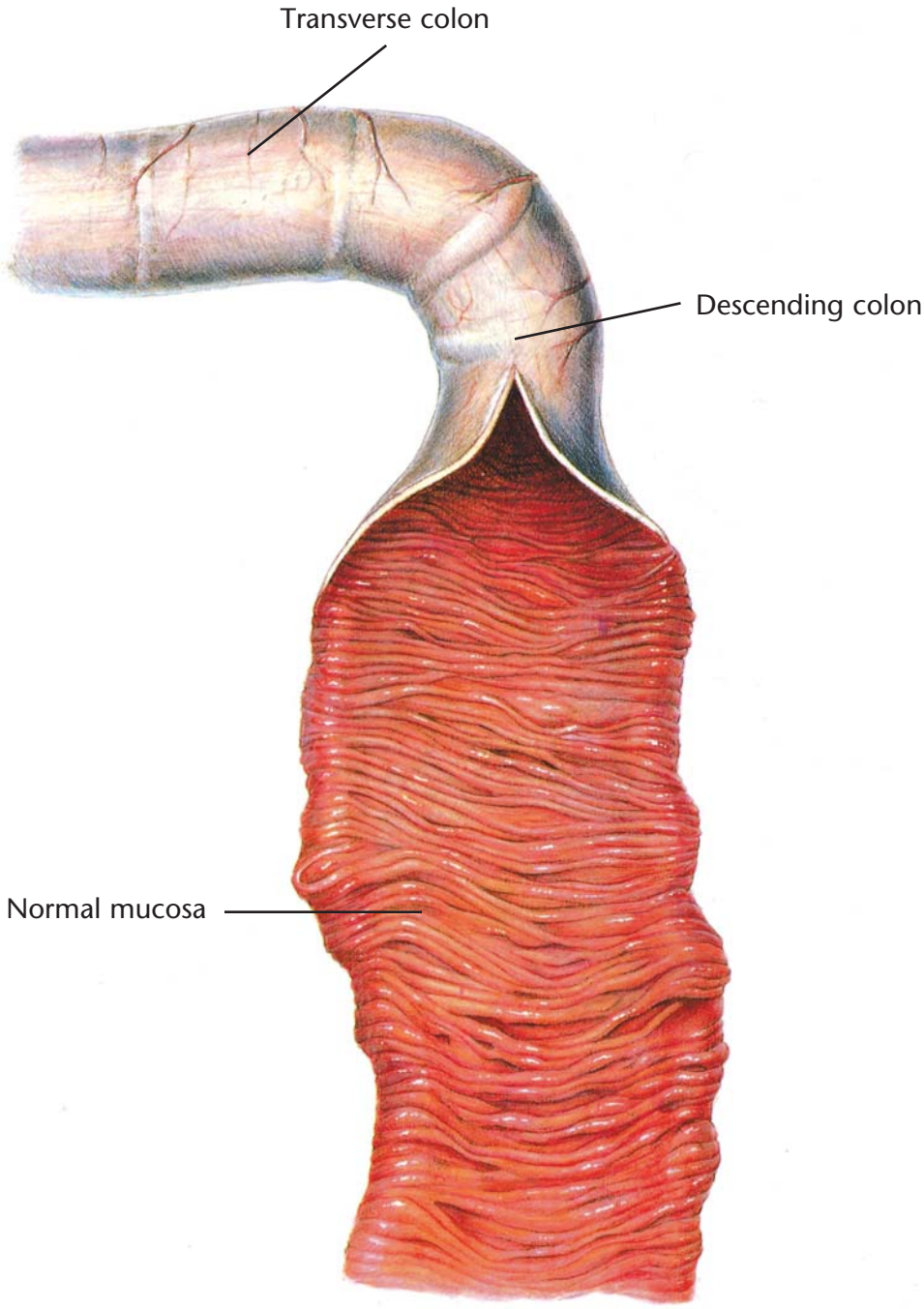
Intussusception

Diagnostic Plan
History
Physical examination
Abdominal palpation
Abdominal x-rays

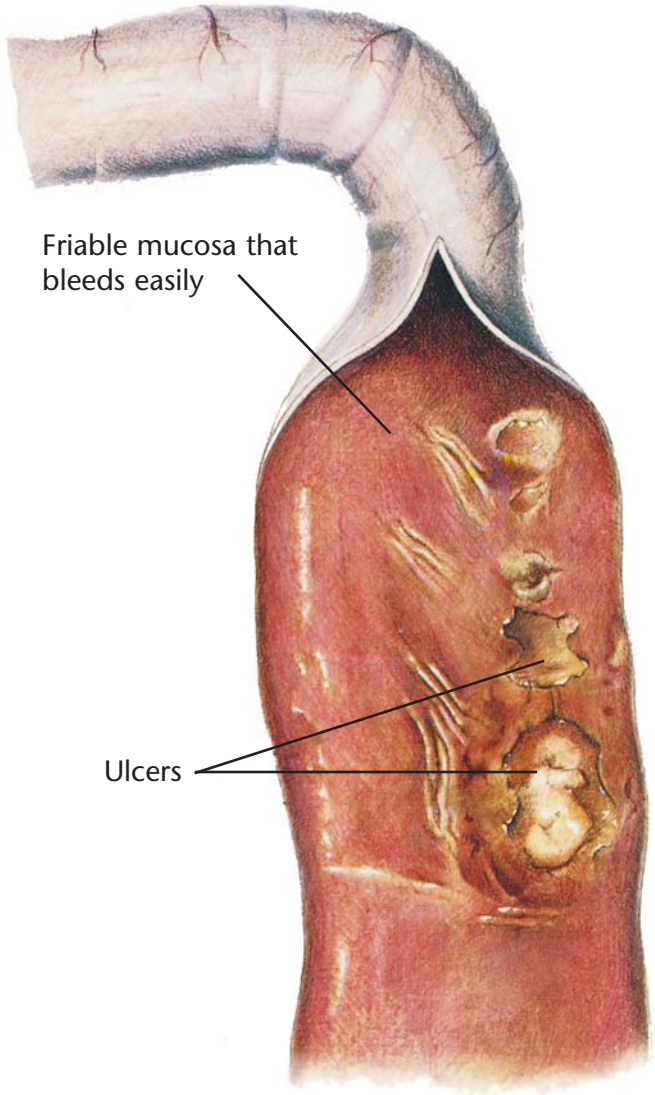
Therapeutic Plan
Fluid therapy
Surgery
Removal of the cause
Nothing by mouth

Dietary Plan
Postsurgically, a low-residue diet fed in small portions
Consider overall patient condition when determining the protein level and caloric density of the diet

Normal Canine Colon



Chronic Colitis



Chronic Colitis

Diagnostic Plan

History
Physical examination
Stool analysis
Abdominal palpation
Rectal palpation
Stool culture
Blood work
Urinalysis
X-rays of the colon
Colonoscopy and biopsy

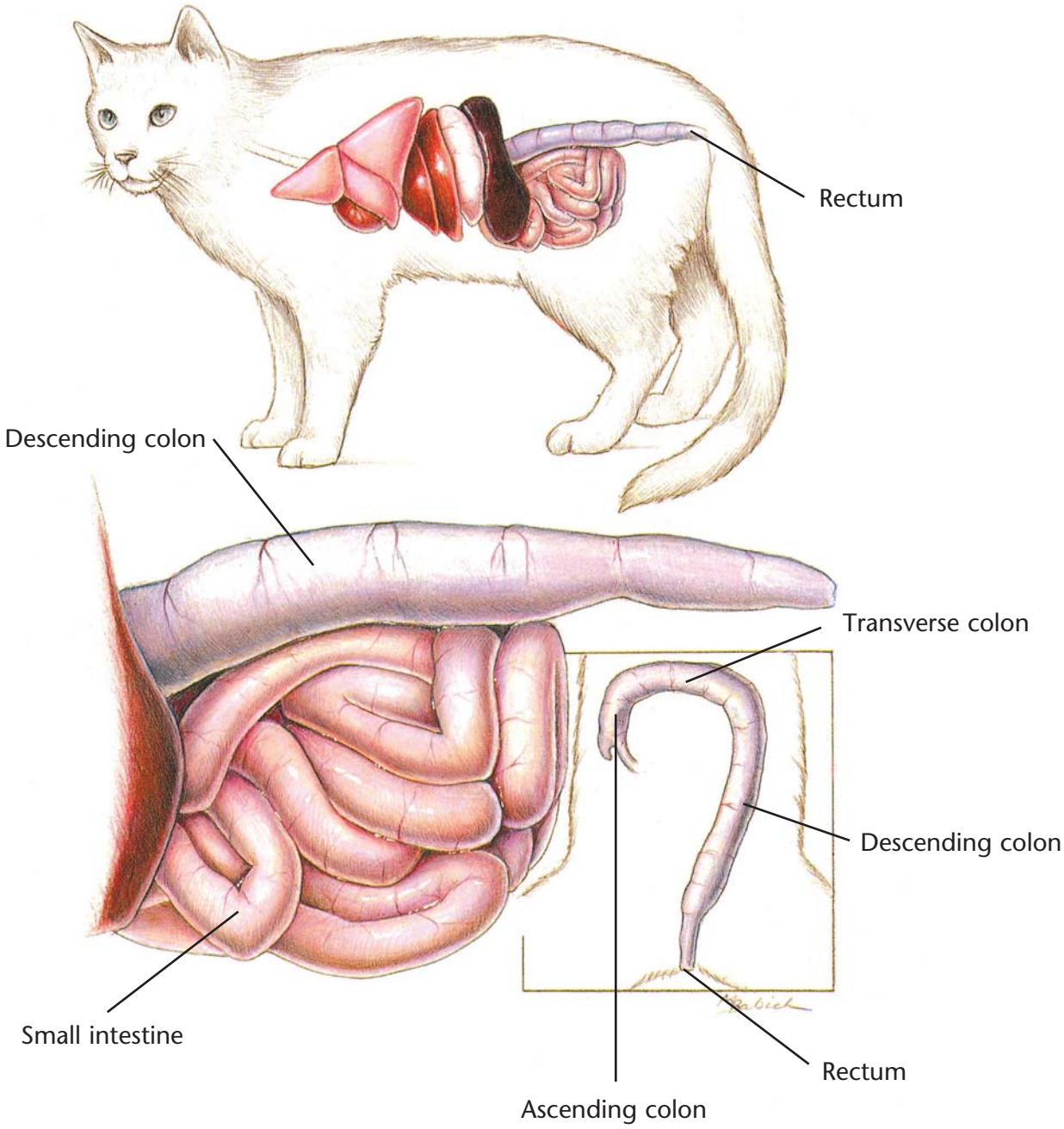
Therapeutic Plan

Antibacterials
Dewormers
Anti-inflammatory drugs

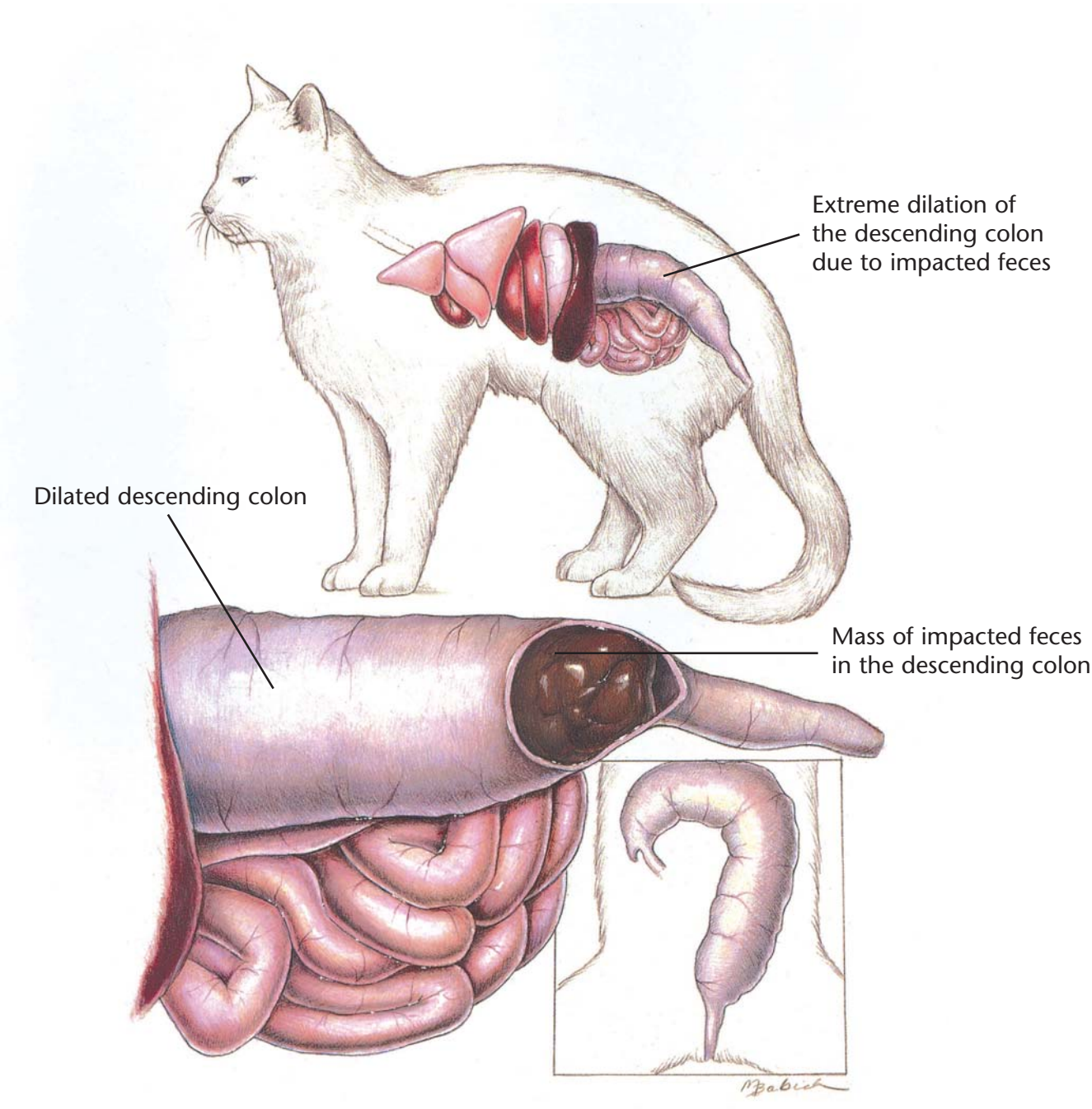
Dietary Plan

High-fiber diets benefit some cases of colitis
If a high-fiber diet is ineffective, a dietary trial using a low-residue diet is indicated
For a food-allergy-induced colitis, a hypoallergenic diet is indicated

Normal Feline Colon



Constipation/Colonic Impaction



Constipation/Colonic Impaction

Diagnostic Plan
History
Physical examination
Rectal palpation
Abdominal palpation
Abdominal x-rays

Therapeutic Plan
Fluid therapy
Laxatives
Enemas
Manual removal of impacted stool
Surgery
Treat primary cause, if possible
Stool softeners
Pro-motility medication

Dietary Plan
A moderate- to high-fiber diet if no neurologic or obstructive lesions; chronic cases may benefit from low residue food
Ensure adequate water intake

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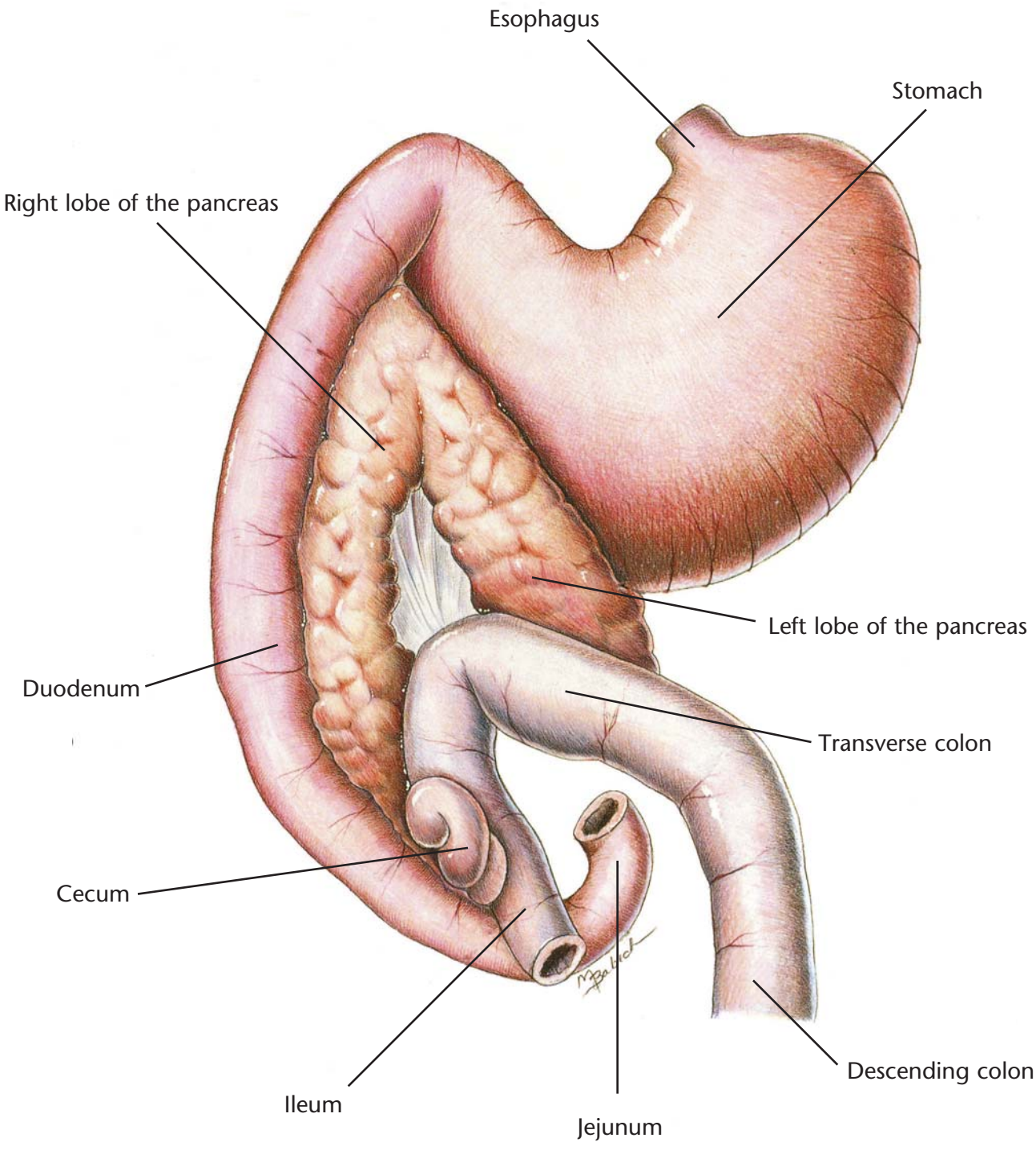
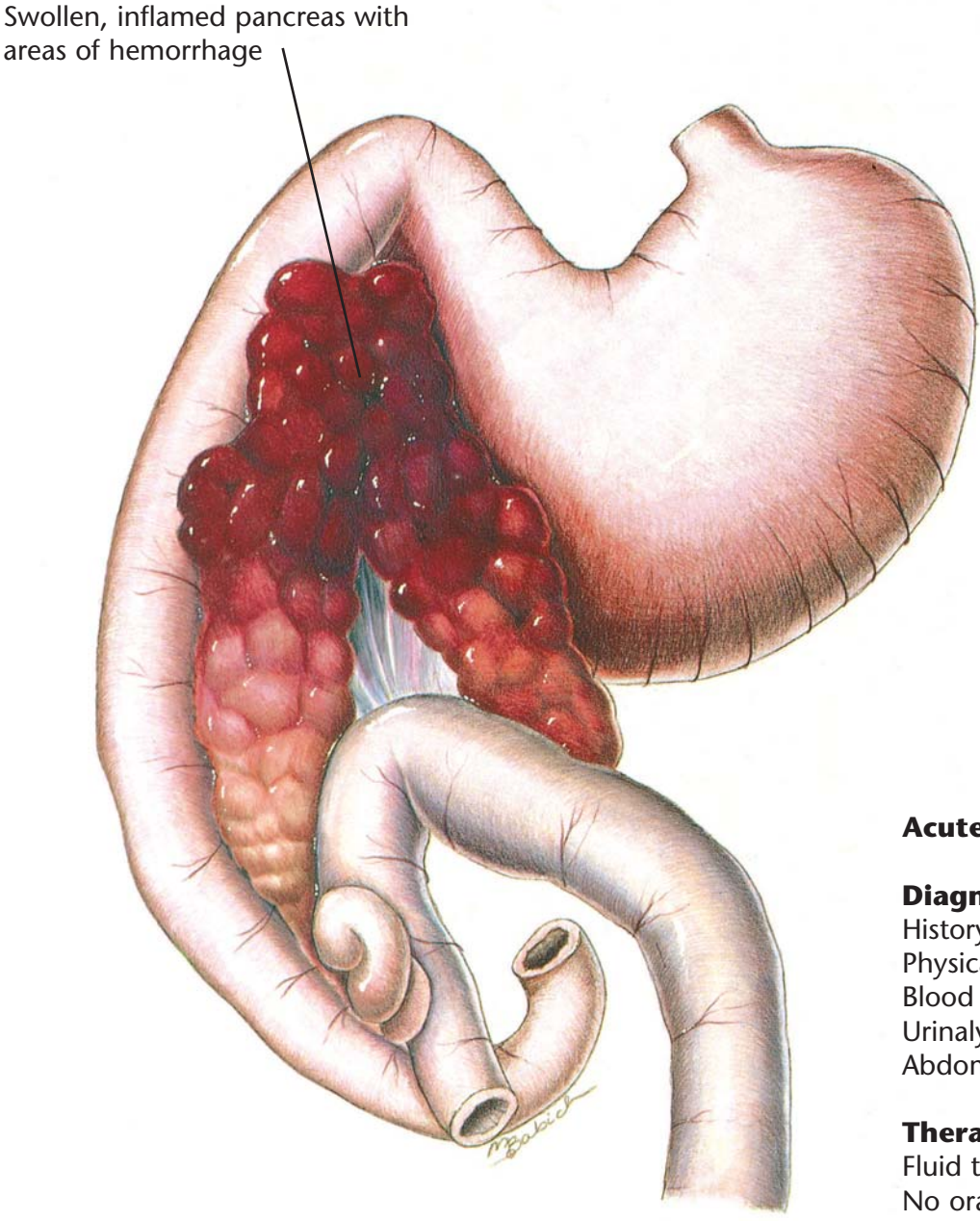
Normal Canine Pancreas



Acute Canine Pancreatitis



Acute Pancreatitis

Diagnostic Plan

History
Physical examination
Blood work
Urinalysis
Abdominal x-rays

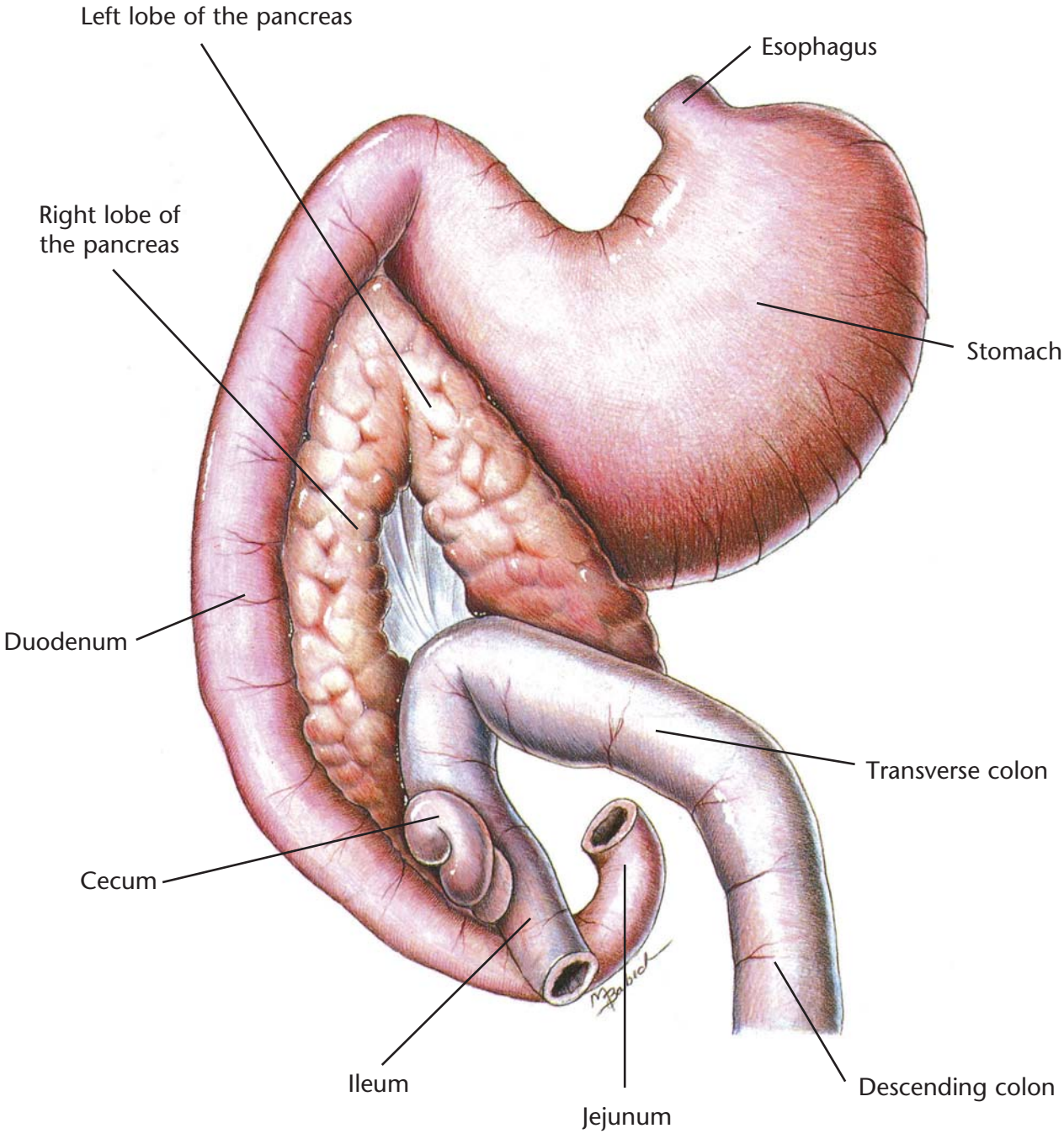
Therapeutic Plan

Fluid therapy
No oral medication or food
Antibacterials
Drugs to suppress vomiting
Analgesics

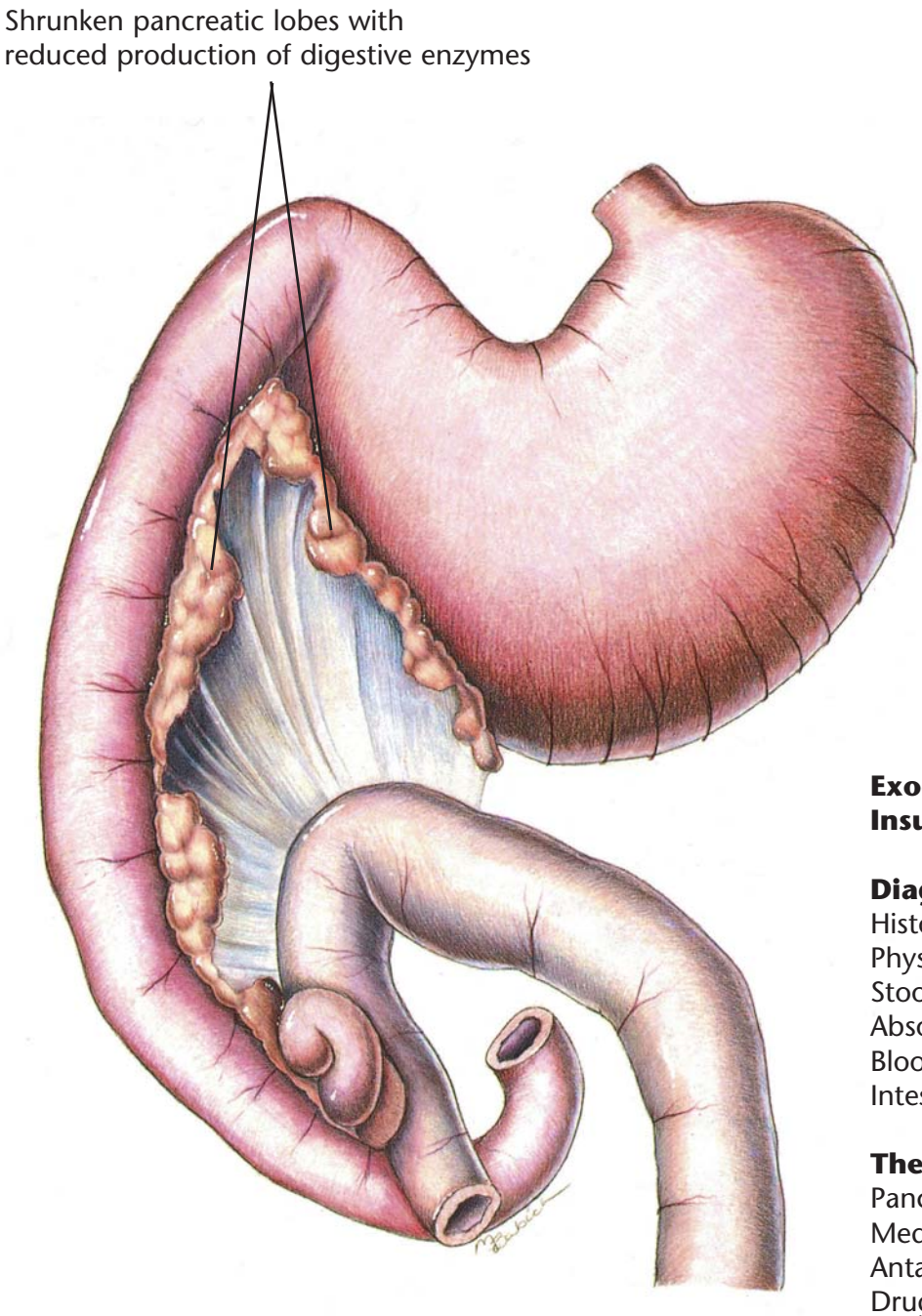
Dietary Plan

When resuming enteral nutrition, small portions of a diet low in fat and residue
After the initial episode, manage hyperlipidemia, if necessary

Normal Pancreas



Exocrine Pancreatic Insufficiency



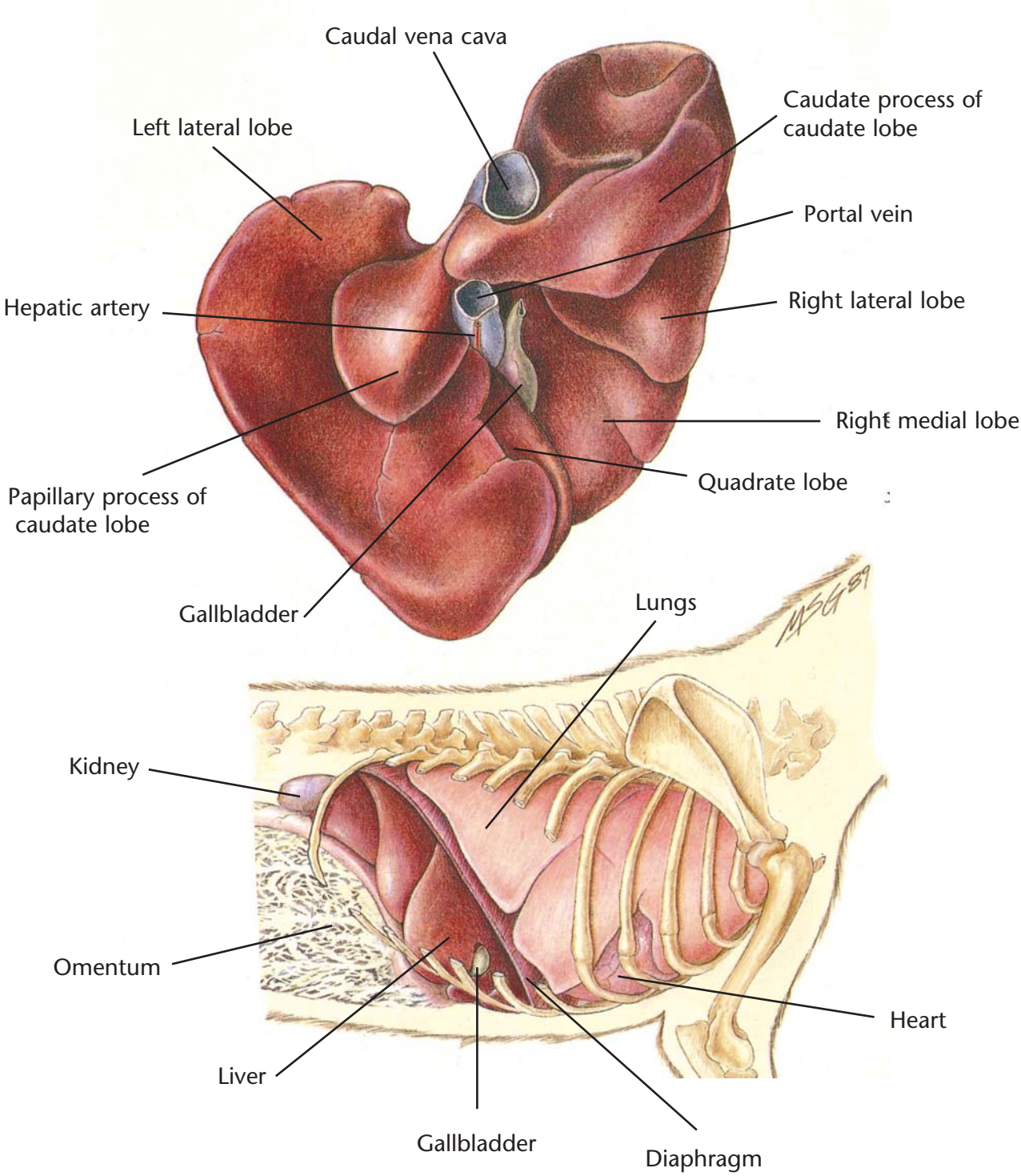
Exocrine Pancreatic Insufficiency

Diagnostic Plan
History
Physical examination
Stool analysis
Absorption tests
Blood work
Intestinal biopsy

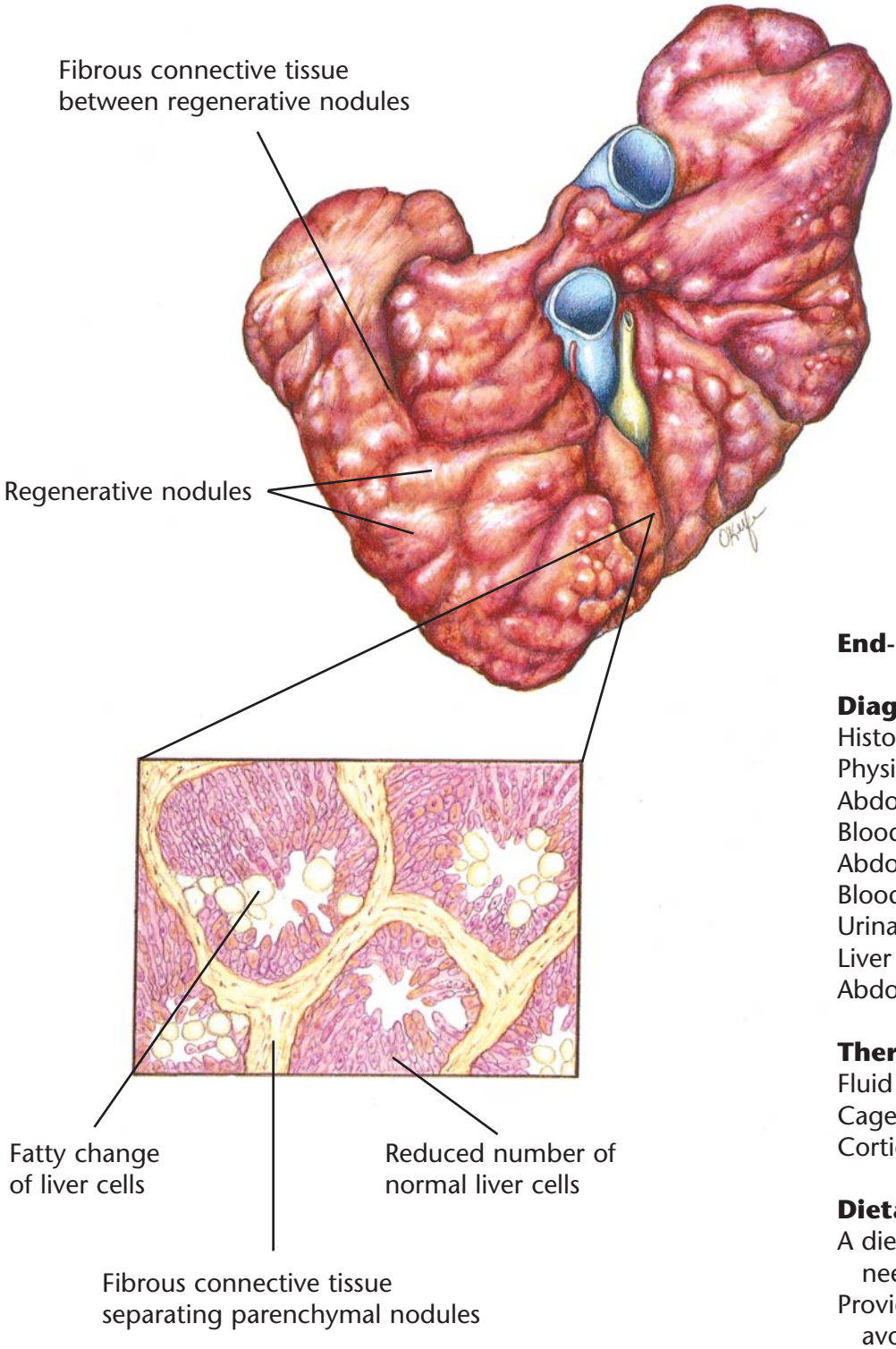
Therapeutic Plan
Pancreatic enzymes
Medium-chain fats
Antacids
Drugs that inhibit acid secretion in the stomach

Dietary Plan
A highly digestible diet
Consider overall body condition
Feed quantities sufficient to maintain normal body weight
Avoid excess fat

Normal Liver



End-Stage Liver Disease



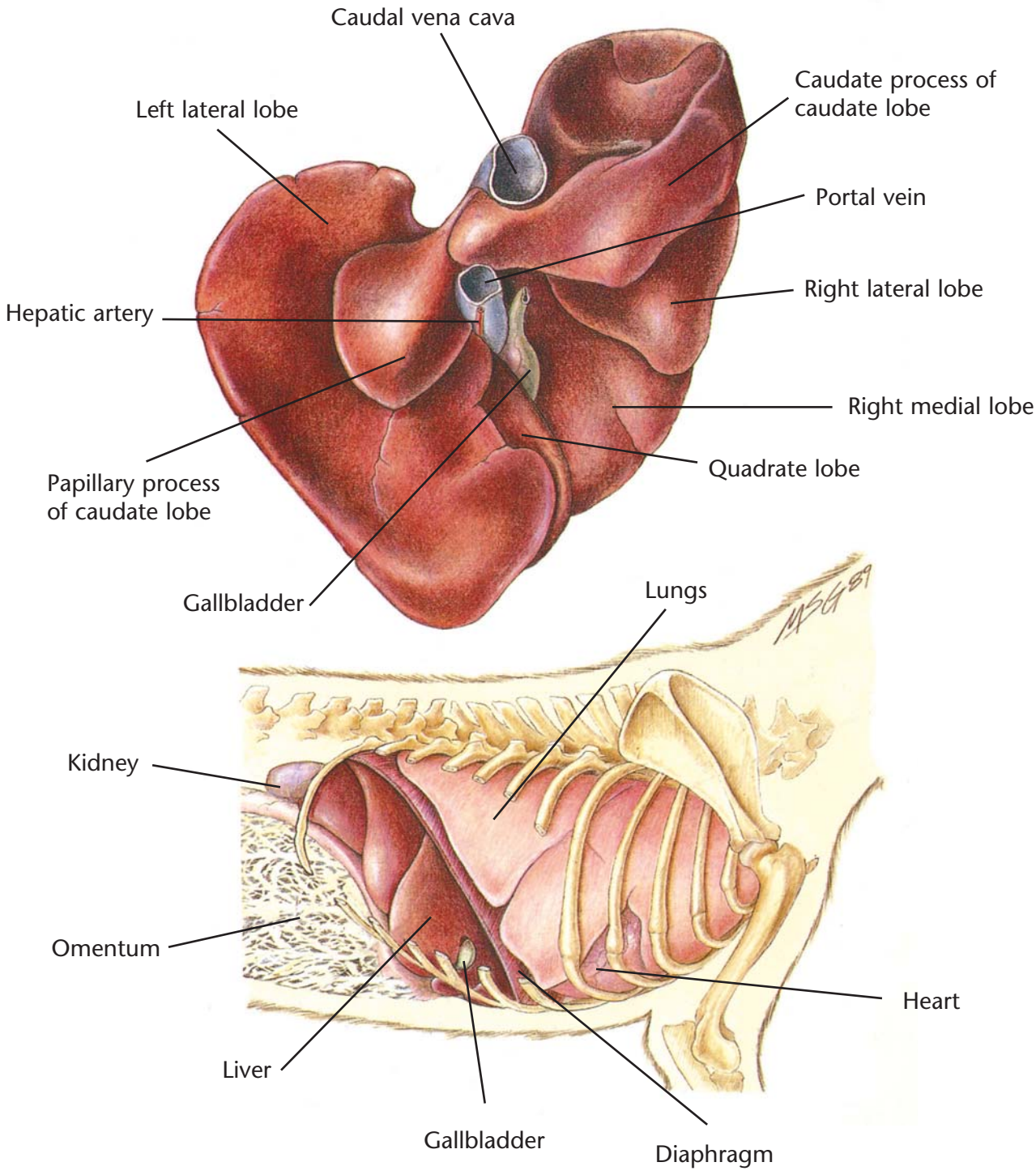
End-Stage Liver Disease

Diagnostic Plan
History
Physical examination
Abdominal palpation
Blood work
Abdominal x-rays
Blood clotting time
Urinalysis
Liver biopsy
Abdominal ultrasonography

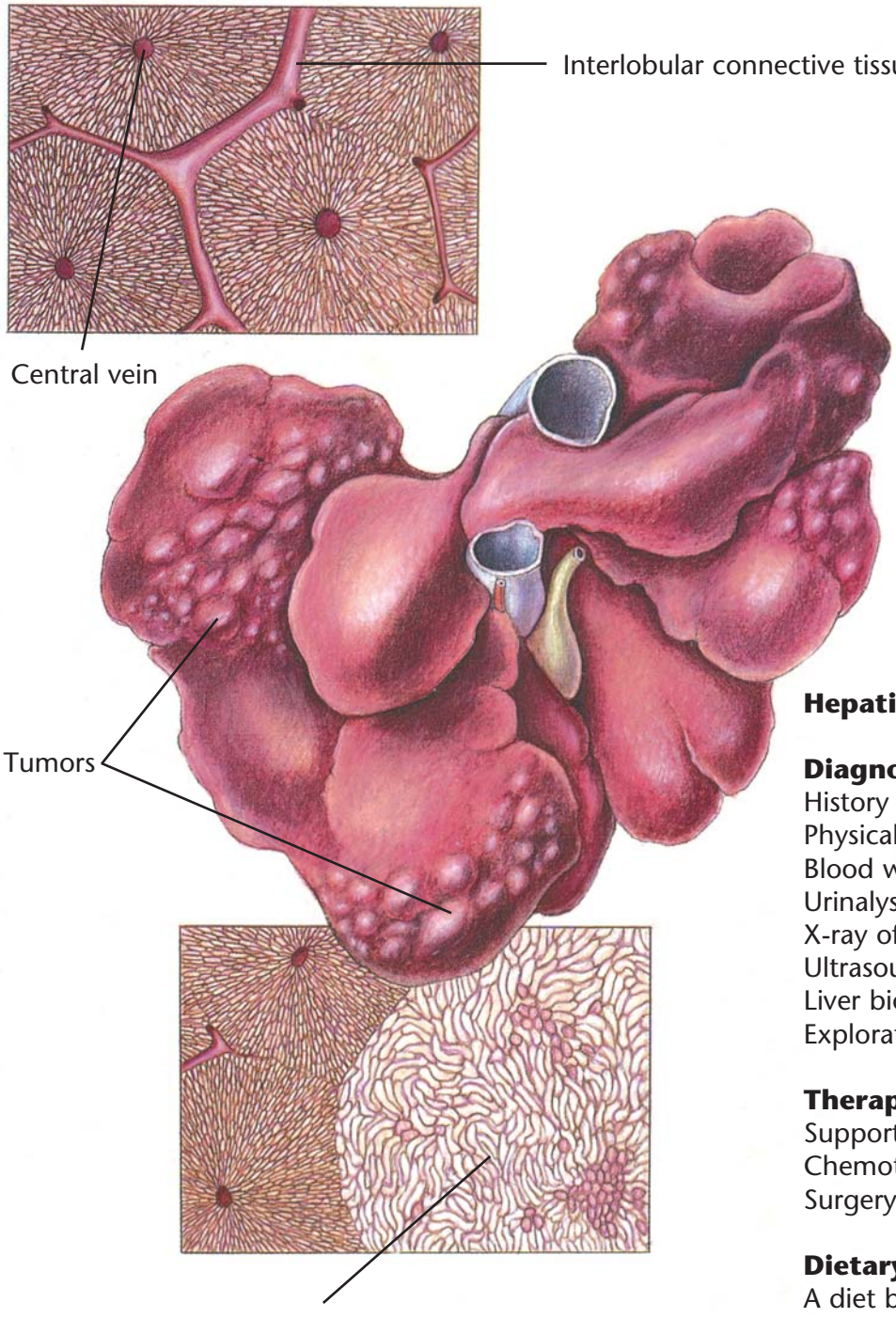
Therapeutic Plan
Fluid therapy
Cage rest
Corticosteroids

Dietary Plan
A diet that will reduce the need for certain liver functions
Provide adequate protein, but avoid excess
Consider possible need for controlled sodium intake

Normal Liver



Hepatic Neoplasia



Hepatic Neoplasia

Diagnostic Plan

History
Physical examination
Blood work
Urinalysis
X-ray of the liver
Ultrasound
Liver biopsy
Exploratory surgery

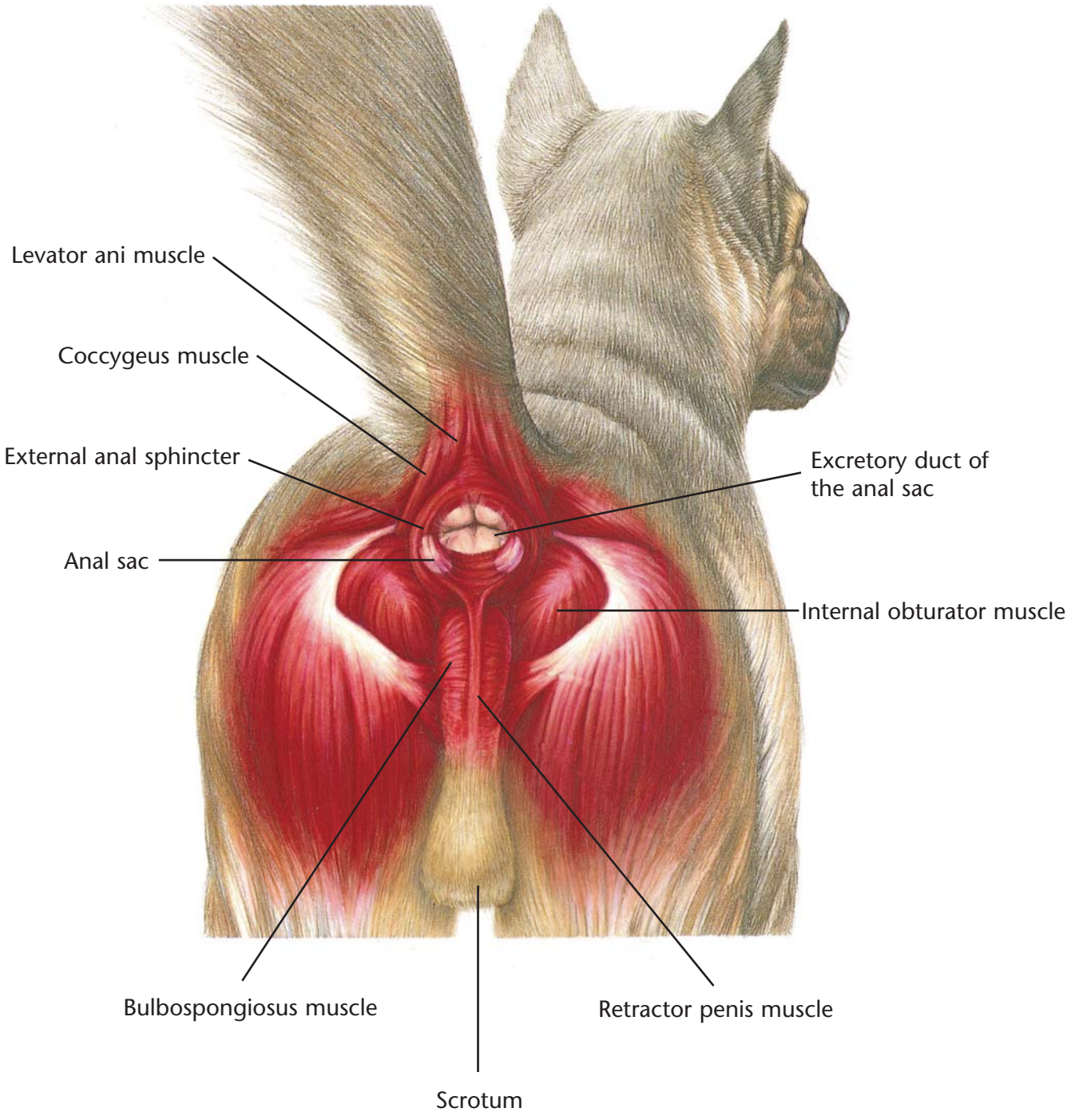
Therapeutic Plan

Supportive care
Chemotherapy
Surgery

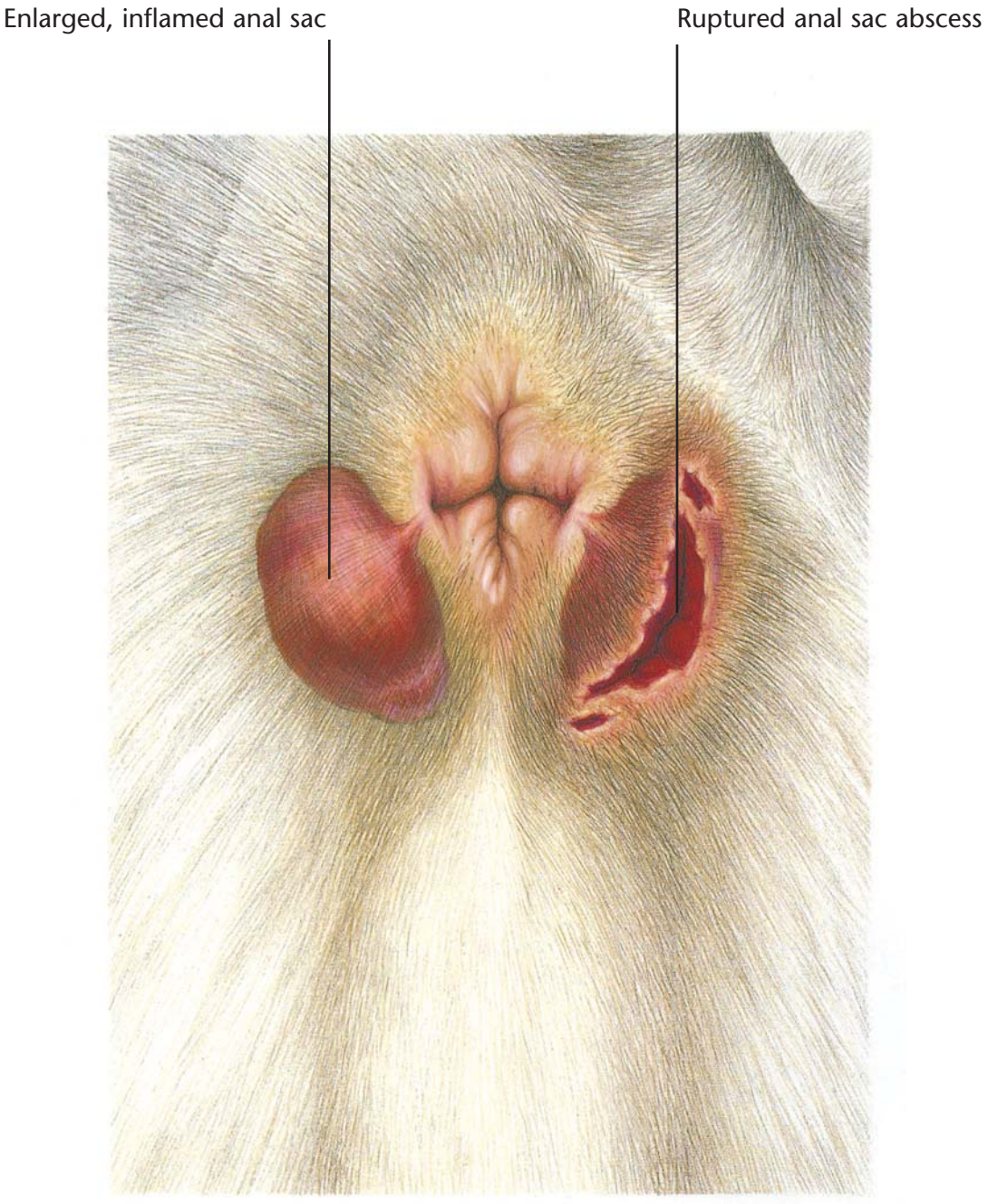
Dietary Plan

A diet based on individual patient evaluation including body condition and other organ system involvement
Special attention should be given to protein levels and amino-acid balance of the diet

Normal Skin/Perineal Anatomy



Anal Sac Abscess



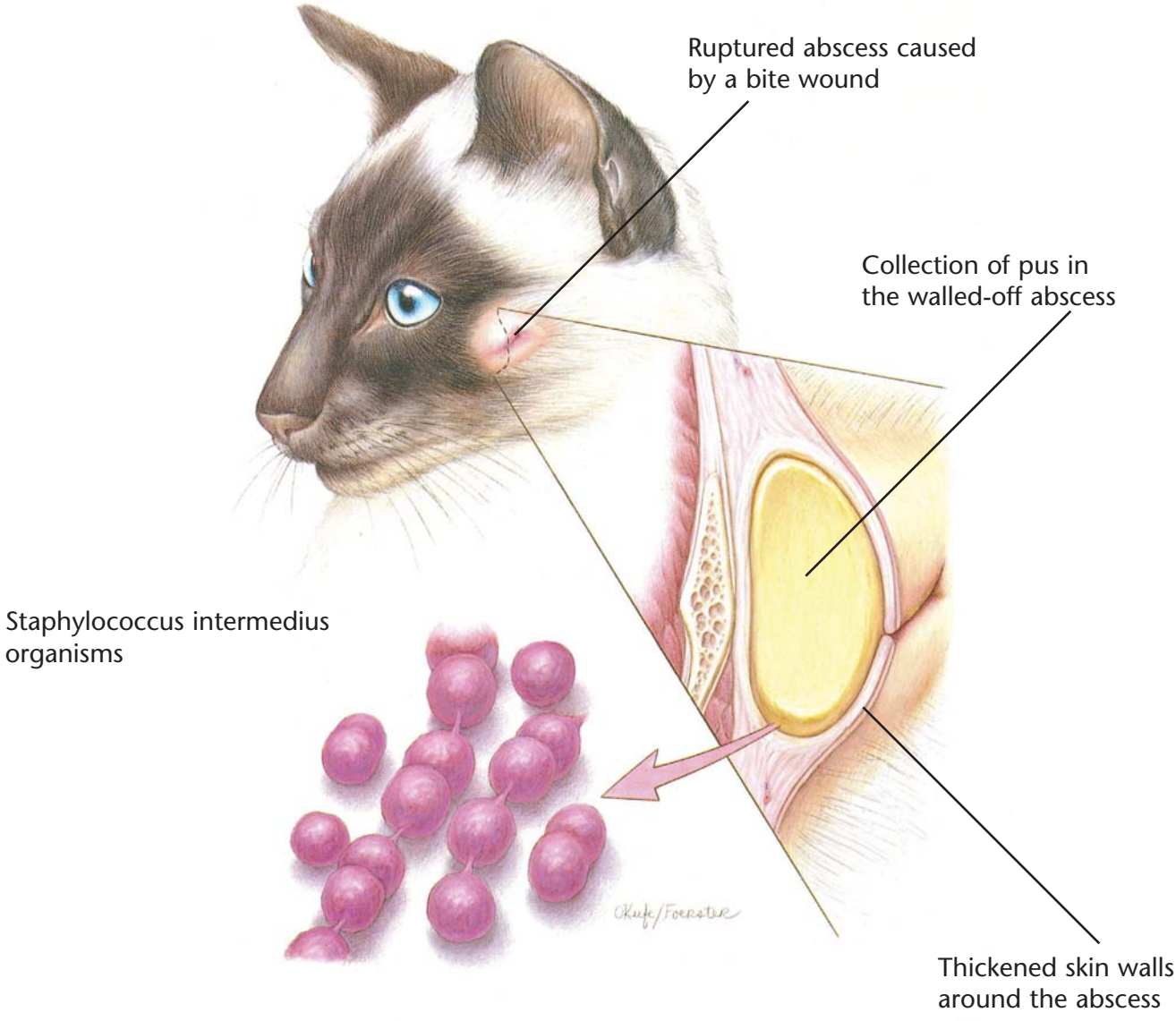
Anal Sac Abscess

Diagnostic Plan
History
Physical examination
Abscess culture

Therapeutic Plan
Lancing of the abscess
Anal sac expression
Hot soaks
Antiseptic solutions
Antibacterials
Anal sac removal

Dietary Plan
Postsurgically, a diet adequate for tissue repair

Skin Abscess



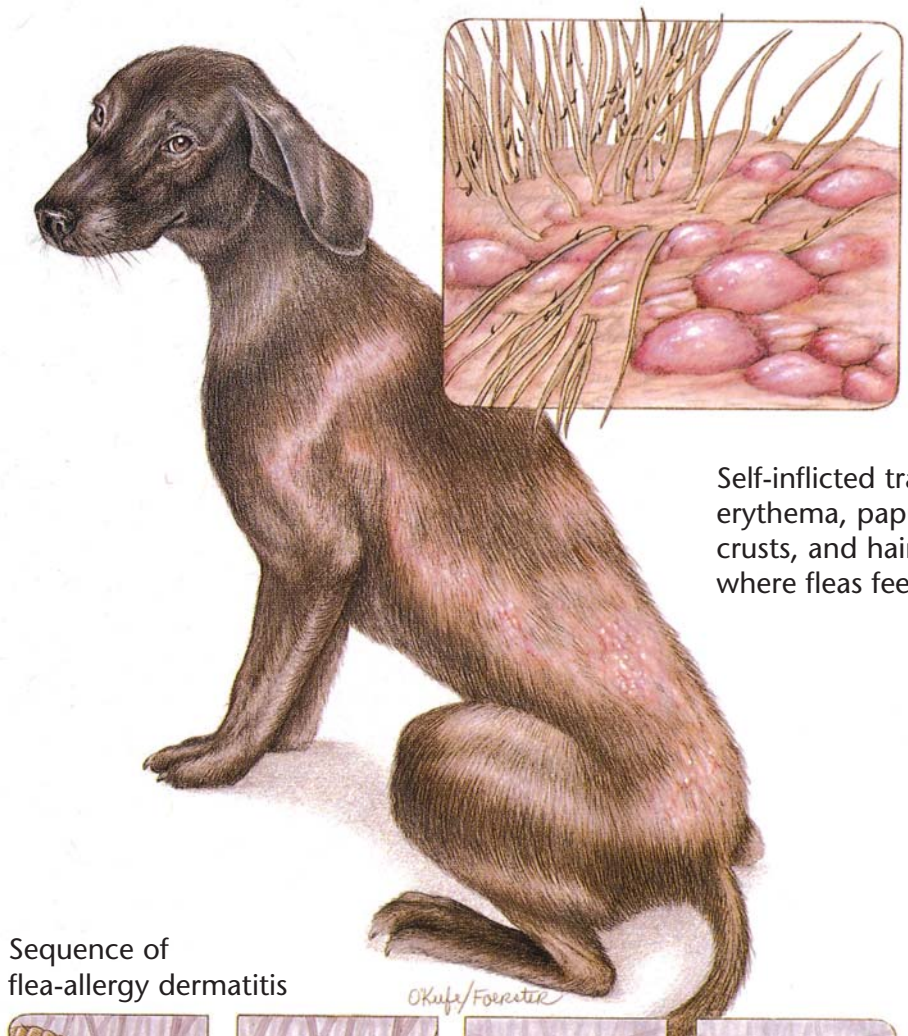
Skin Abscess

Diagnostic Plan
History
Physical examination
Abscess culture
X-rays

Therapeutic Plan
Hot compresses
Abscess drainage
Dead tissue removal
Antibacterial therapy
Surgery

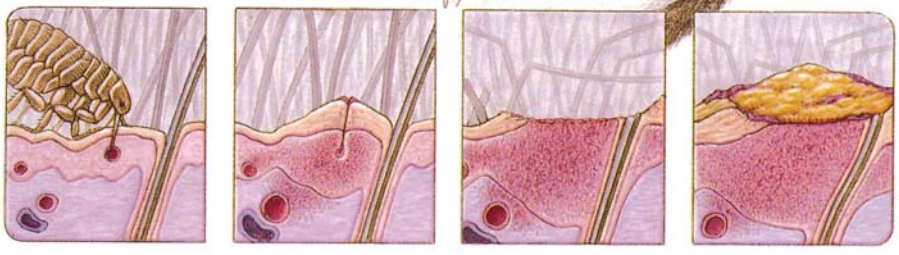
Dietary Plan
A diet adequate for tissue repair

Flea-Allergy Dermatitis



Self-inflicted trauma results in erythema, papules, pustules, crusts, and hair loss in areas where fleas feed.

Sequence of flea-allergy dermatitis



Flea punctures skin to feed.

Flea saliva sets up an antigen-antibody reaction.

Excoriation and inflammation result from self-inflicted trauma.

Acute bacterial infection results.

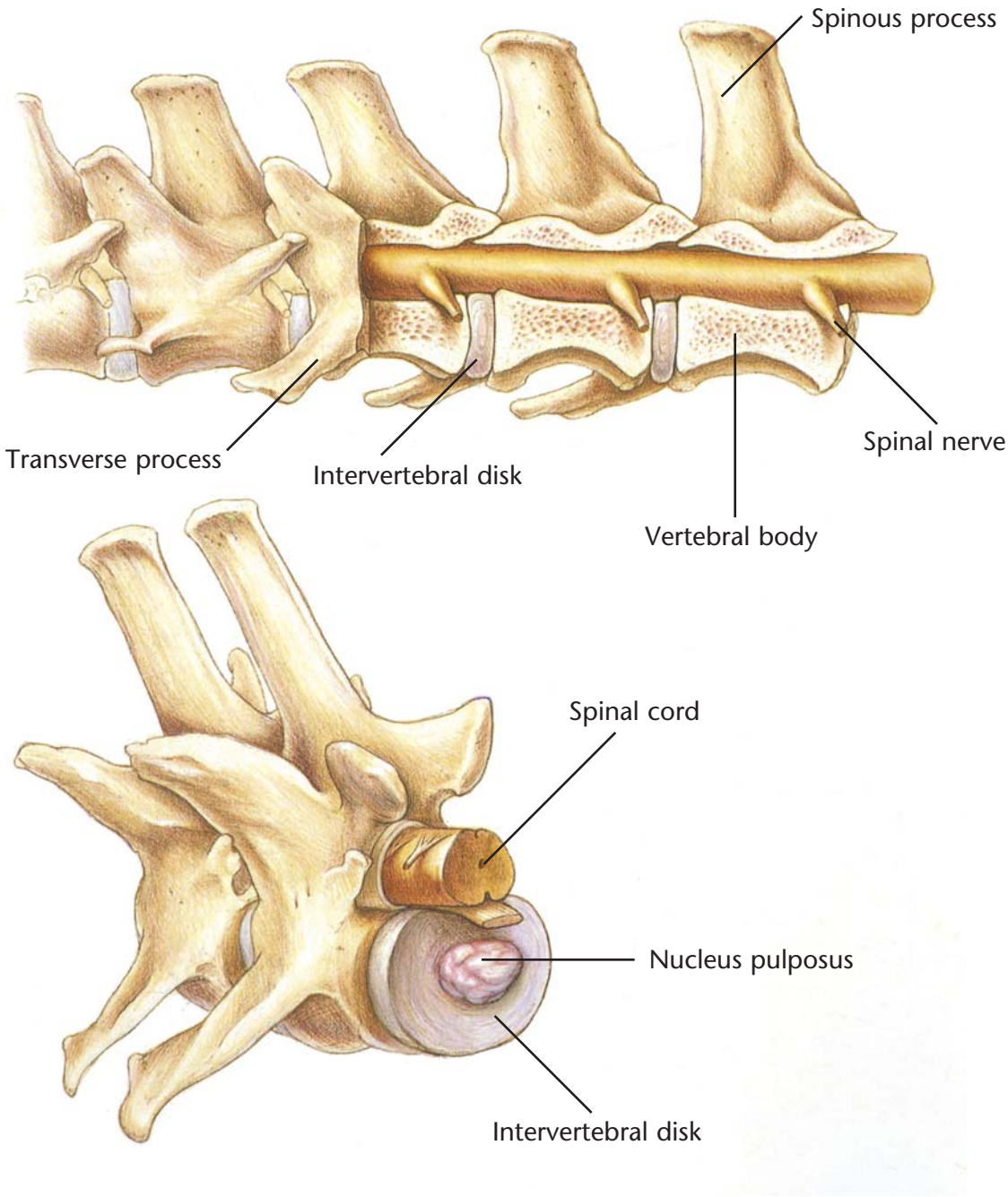
Flea-Allergy Dermatitis

Diagnostic Plan
History
Physical examination
Detection of fleas, flea dirt, and tapeworm segments
Intradermal skin testing

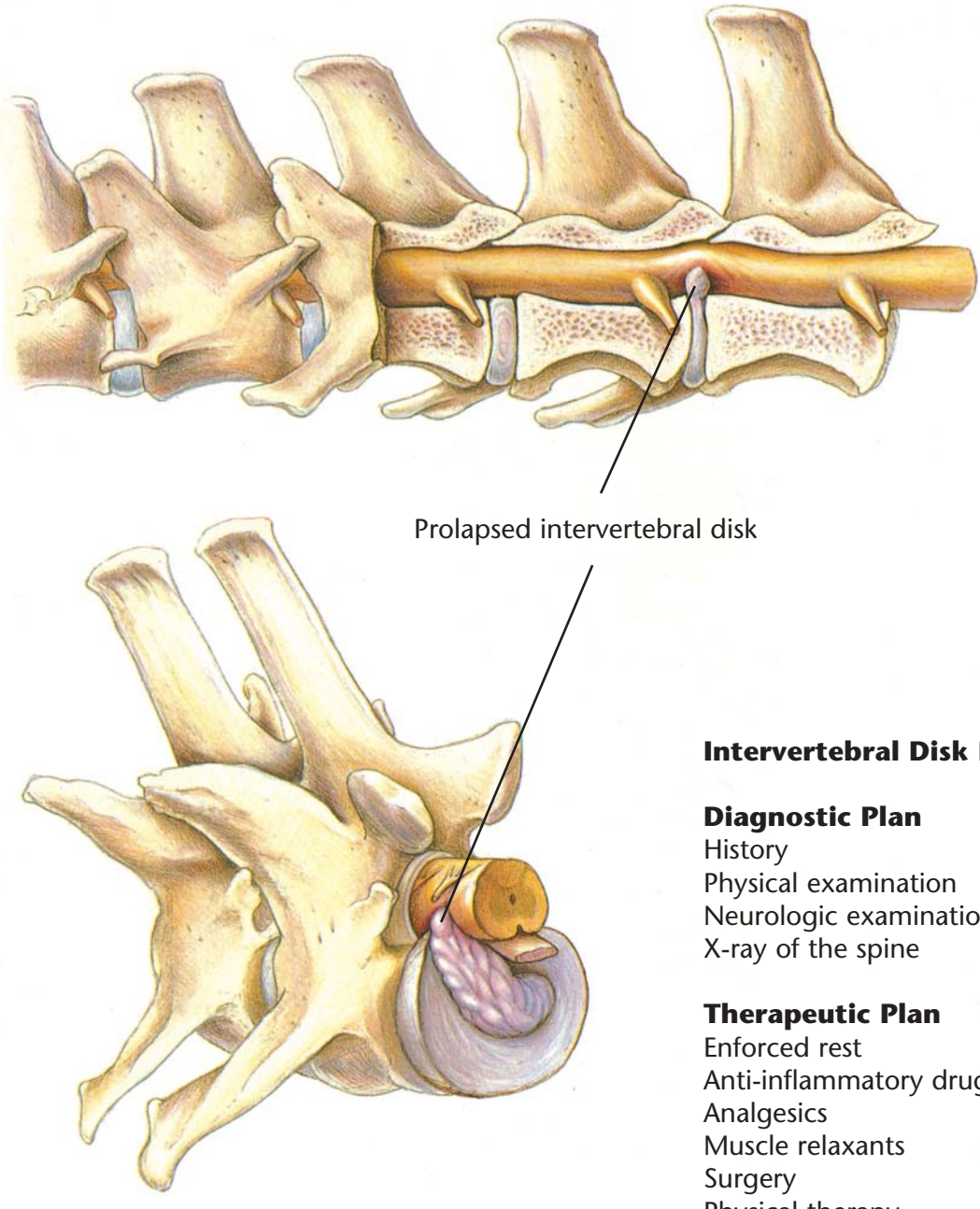
Therapeutic Plan
Flea control
Short-term corticosteroids

Dietary Plan
A diet adequate for tissue repair

Normal Vertebrae/Spinal Cord



Intervertebral Disk Disease



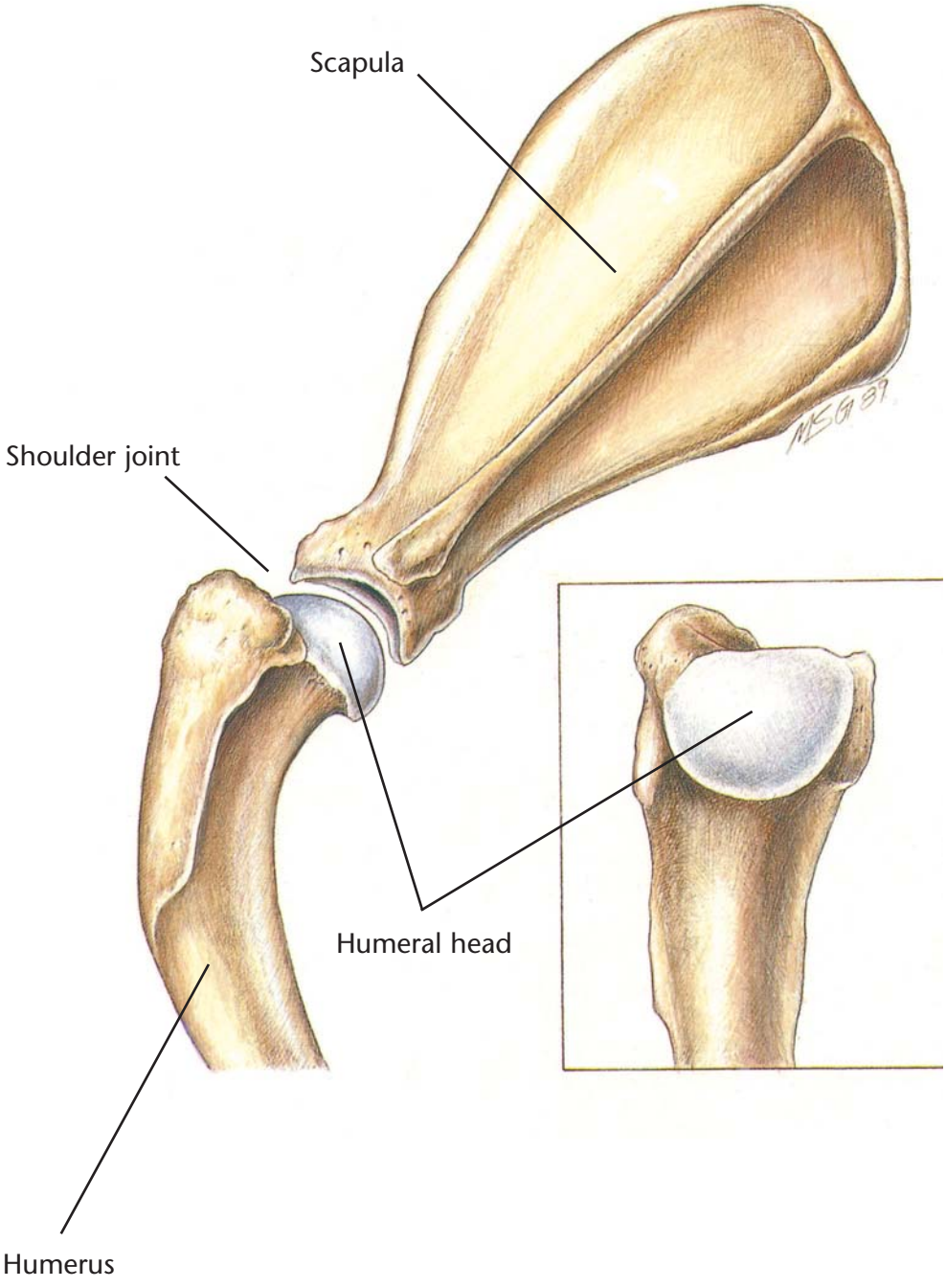
Intervertebral Disk Disease

Diagnostic Plan
History
Physical examination
Neurologic examination
X-ray of the spine

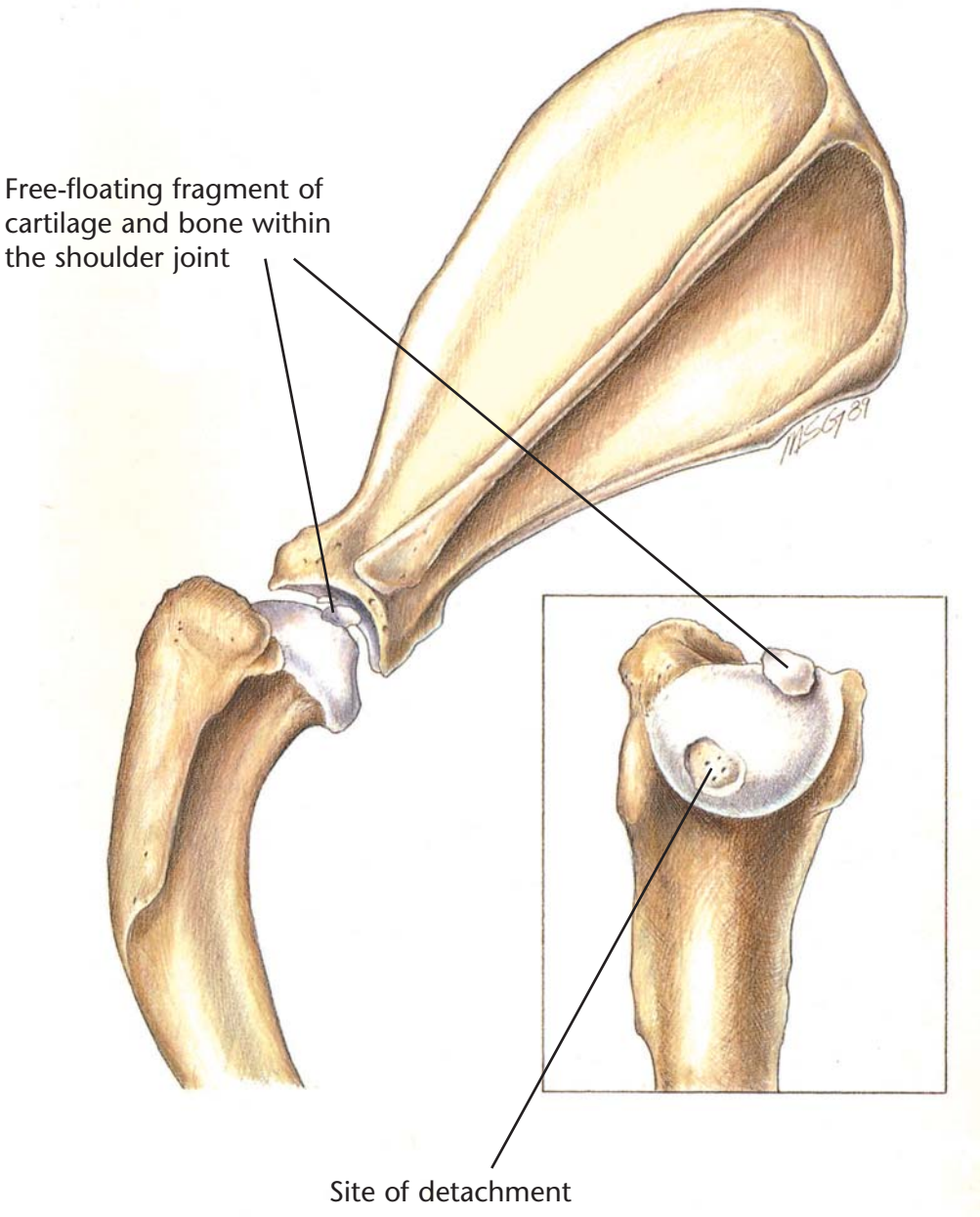
Therapeutic Plan
Enforced rest
Anti-inflammatory drugs
Analgesics
Muscle relaxants
Surgery
Physical therapy

Dietary Plan
Postsurgically, a diet adequate for tissue repair
If obesity is a complicating factor, restrict caloric intake so the patient reaches and maintains an ideal body weight

Normal Shoulder



Osteochondritis Dissecans



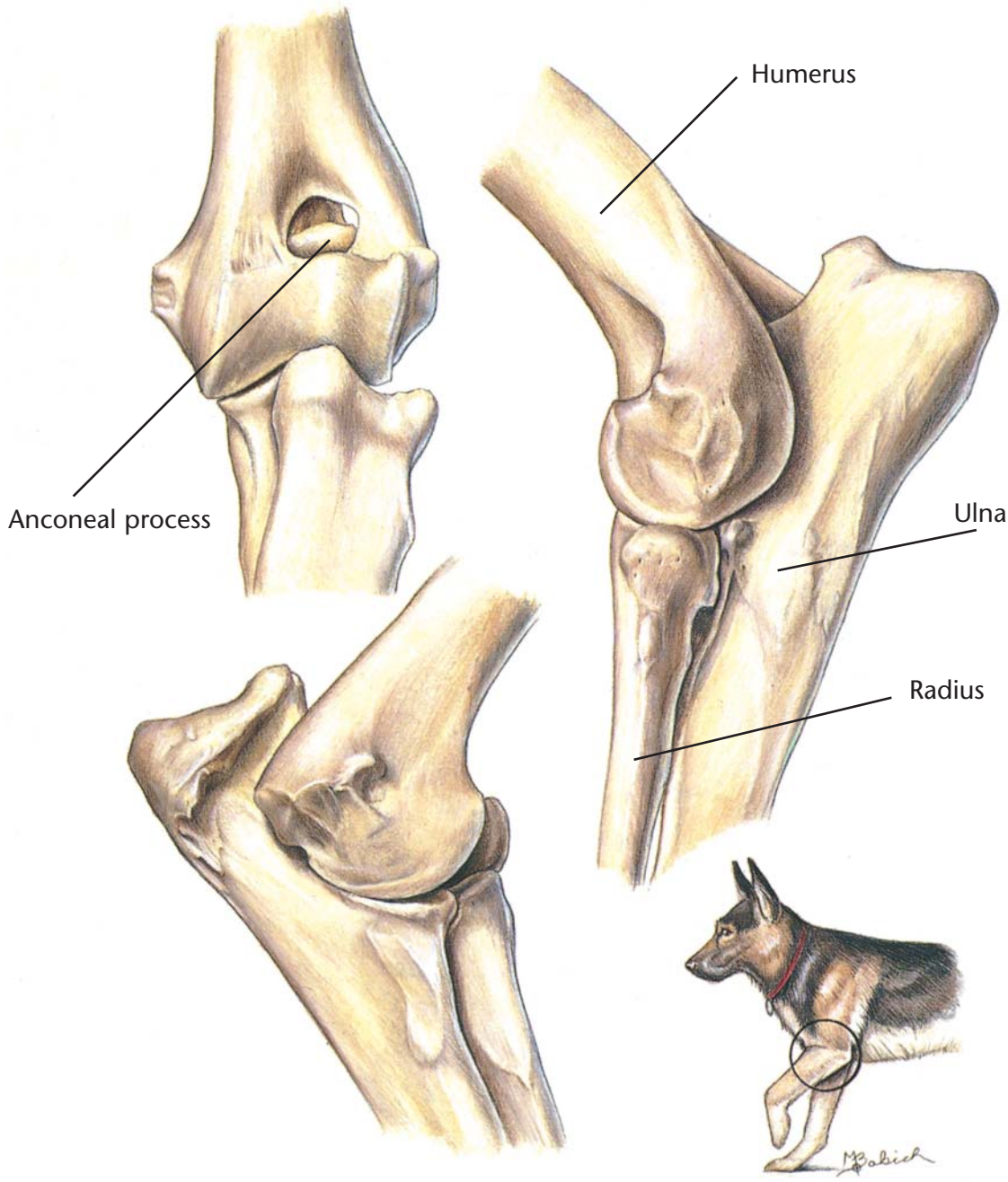
Osteochondritis Dissecans

Diagnostic Plan
History
Physical examination
X-rays

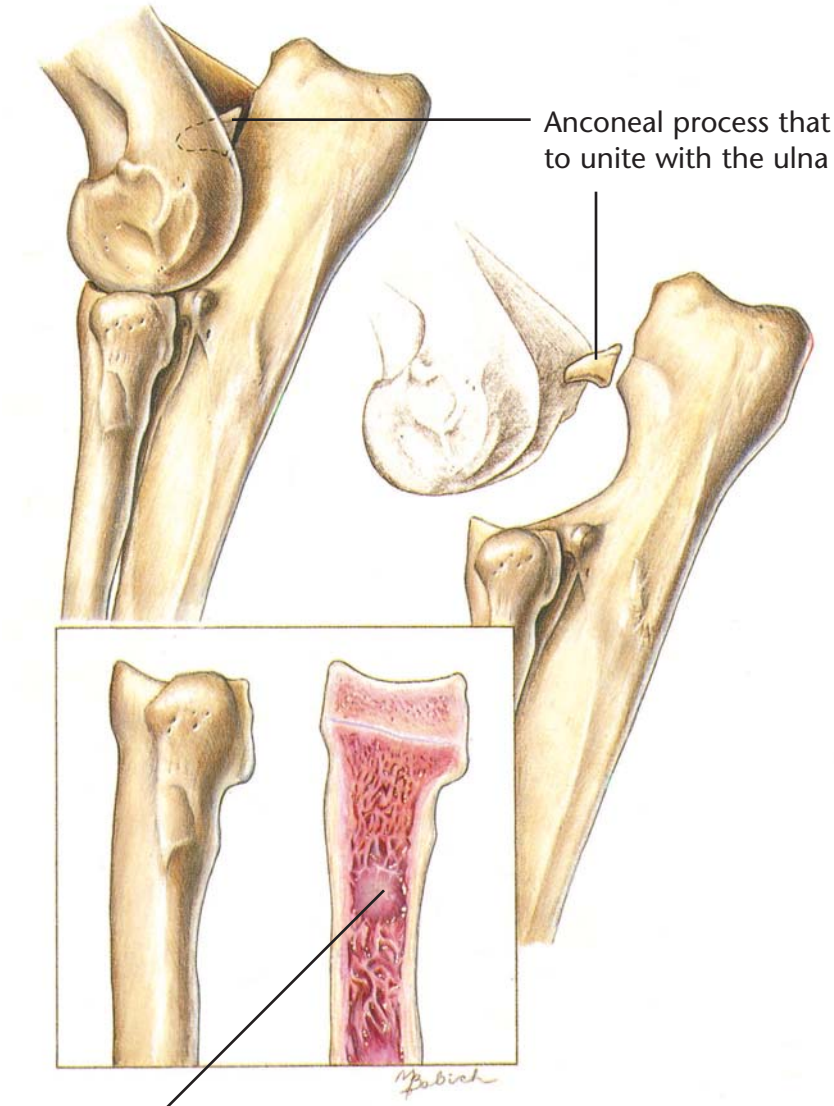
Therapeutic Plan
Surgery

Dietary Plan
Postsurgically, a diet adequate for tissue repair and patient growth
Avoid overfeeding throughout life
Avoid excess calcium and energy in growing large and giant-breed pups

Normal Elbow



Ununited Anconeal Process/Panosteitis



Ununited Anconeal Process

Diagnostic Plan
History
Physical examination
X-rays of the elbow

Therapeutic Plan
Surgery

Dietary Plan
Postsurgically, a diet adequate for tissue repair and patient growth
Avoid excess calcium and energy in growing large and giant-breed pups
Avoid overfeeding throughout life

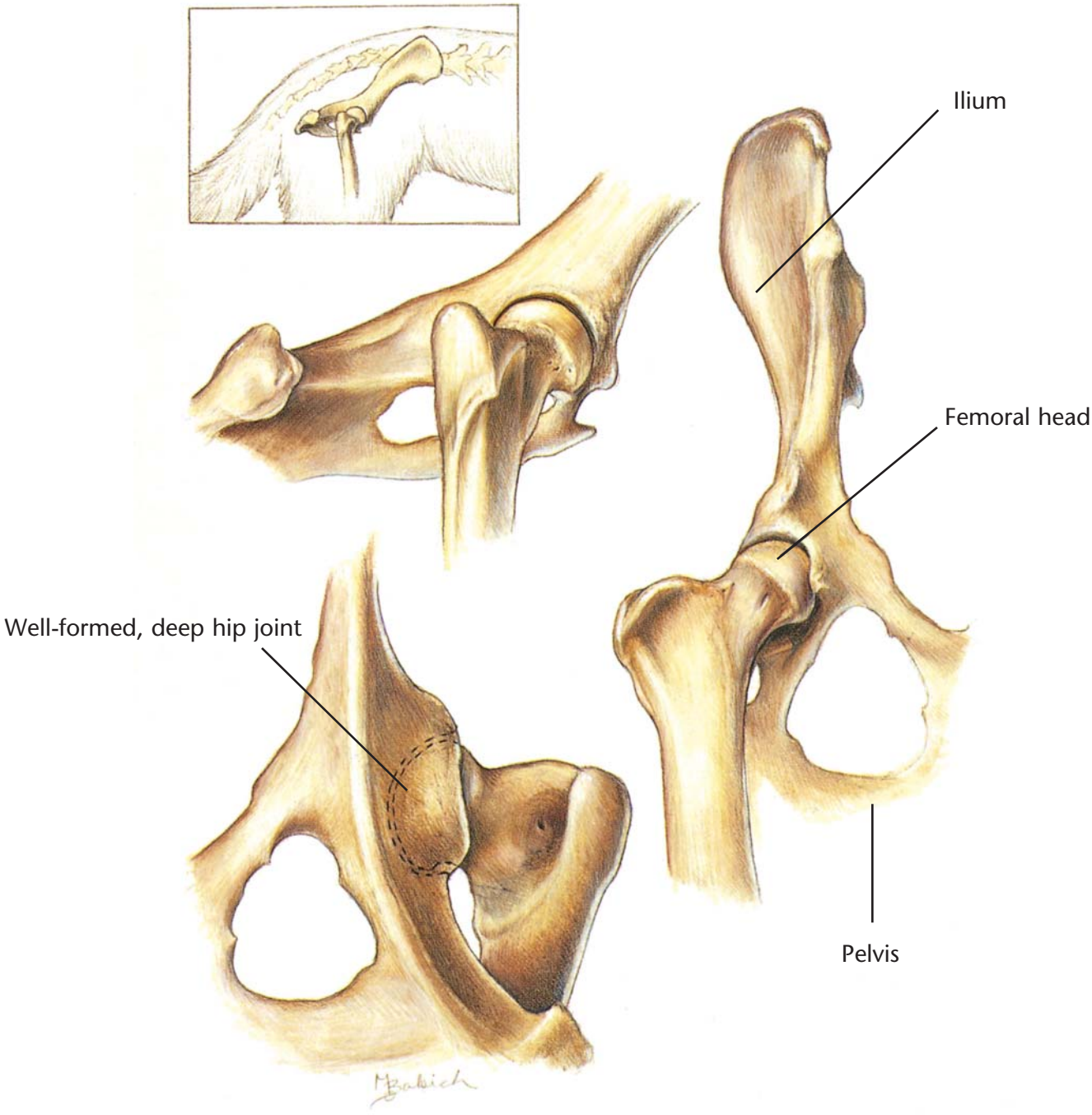
Panosteitis

Diagnostic Plan
History
Physical examination
Palpation
X-rays

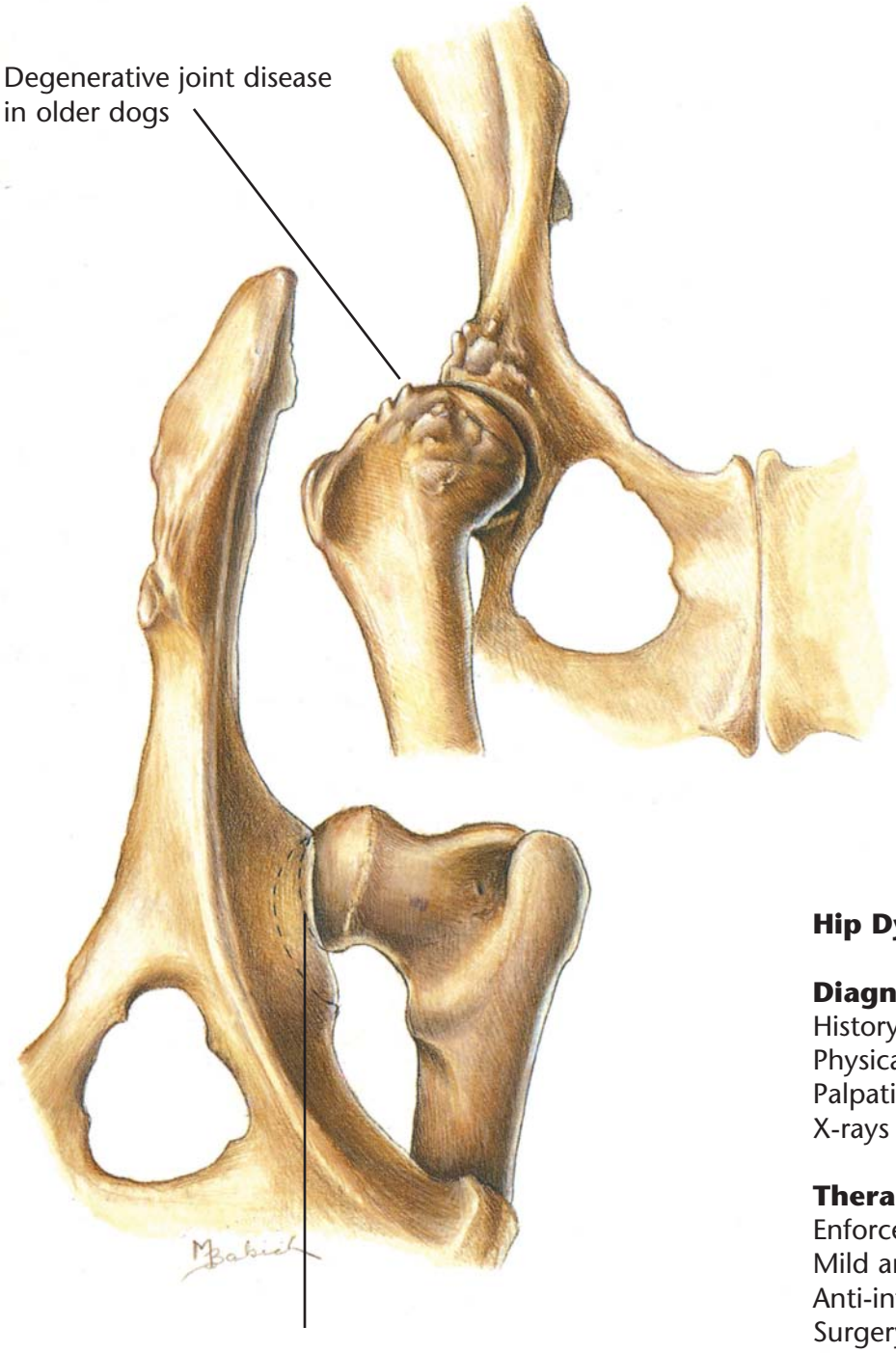
Therapeutic Plan
Analgesics

Dietary Plan
A diet adequate for growth
Avoid overfeeding throughout life

Normal Hip Joint



Hip Dysplasia



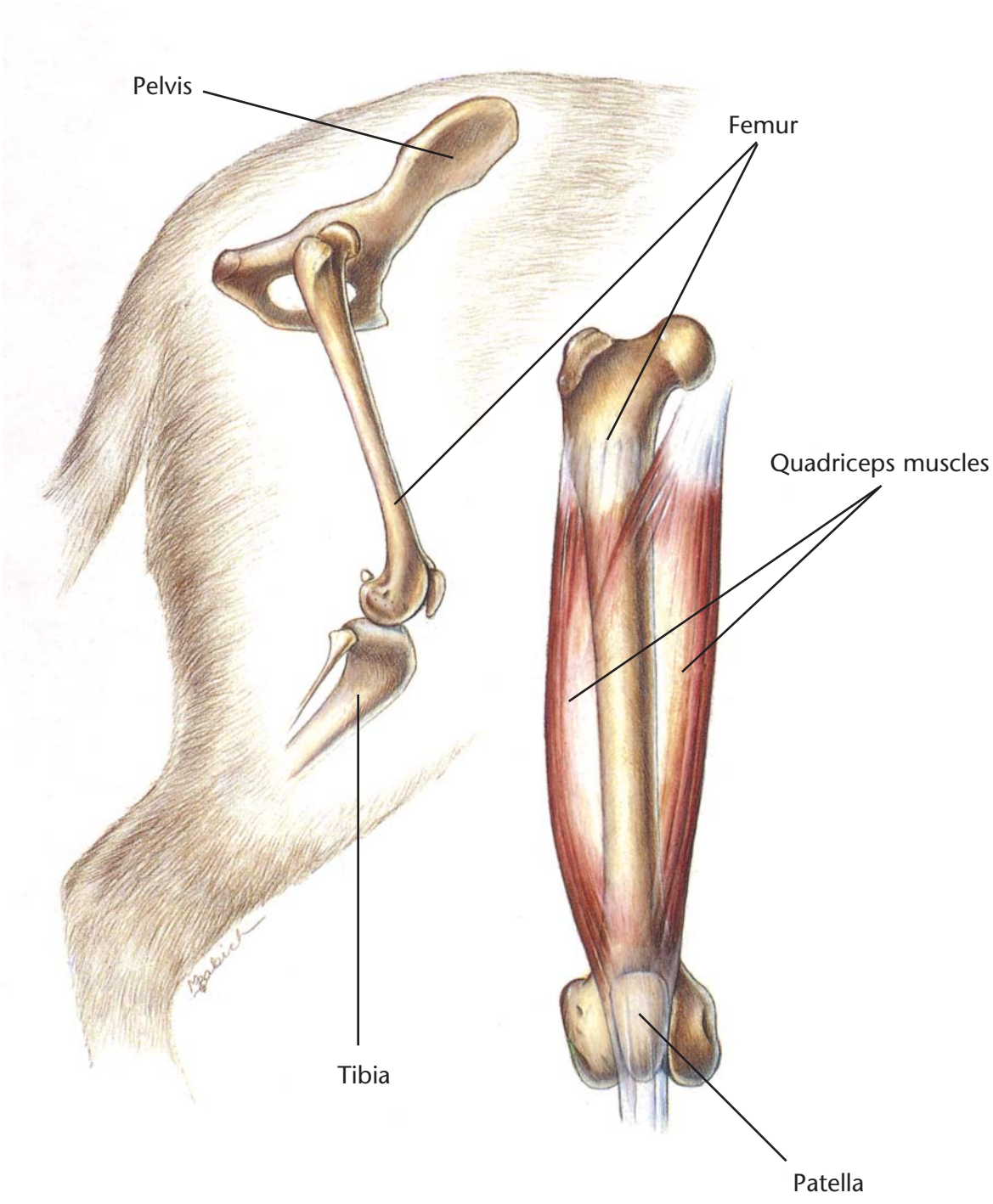
Hip Dysplasia

Diagnostic Plan
History
Physical examination
Palpation of the hips
X-rays of the hips

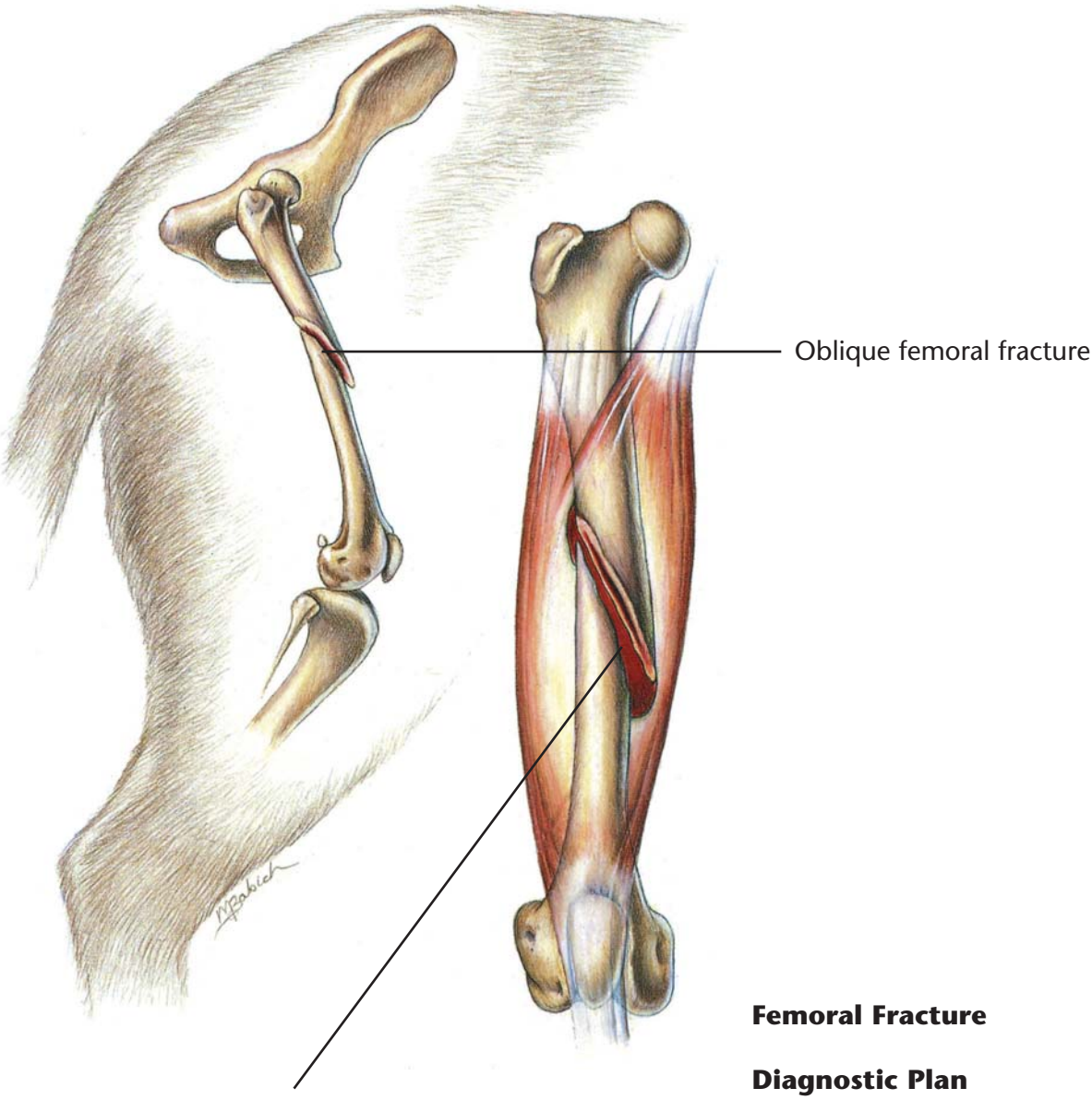
Therapeutic Plan
Enforced rest
Mild analgesics
Anti-inflammatory drugs
Surgery

Dietary Plan
Postsurgically, a diet adequate for tissue repair
If obesity is a complicating factor, restrict caloric intake so the patient reaches and maintains an ideal body weight

Normal Rear Leg



Femoral Fracture



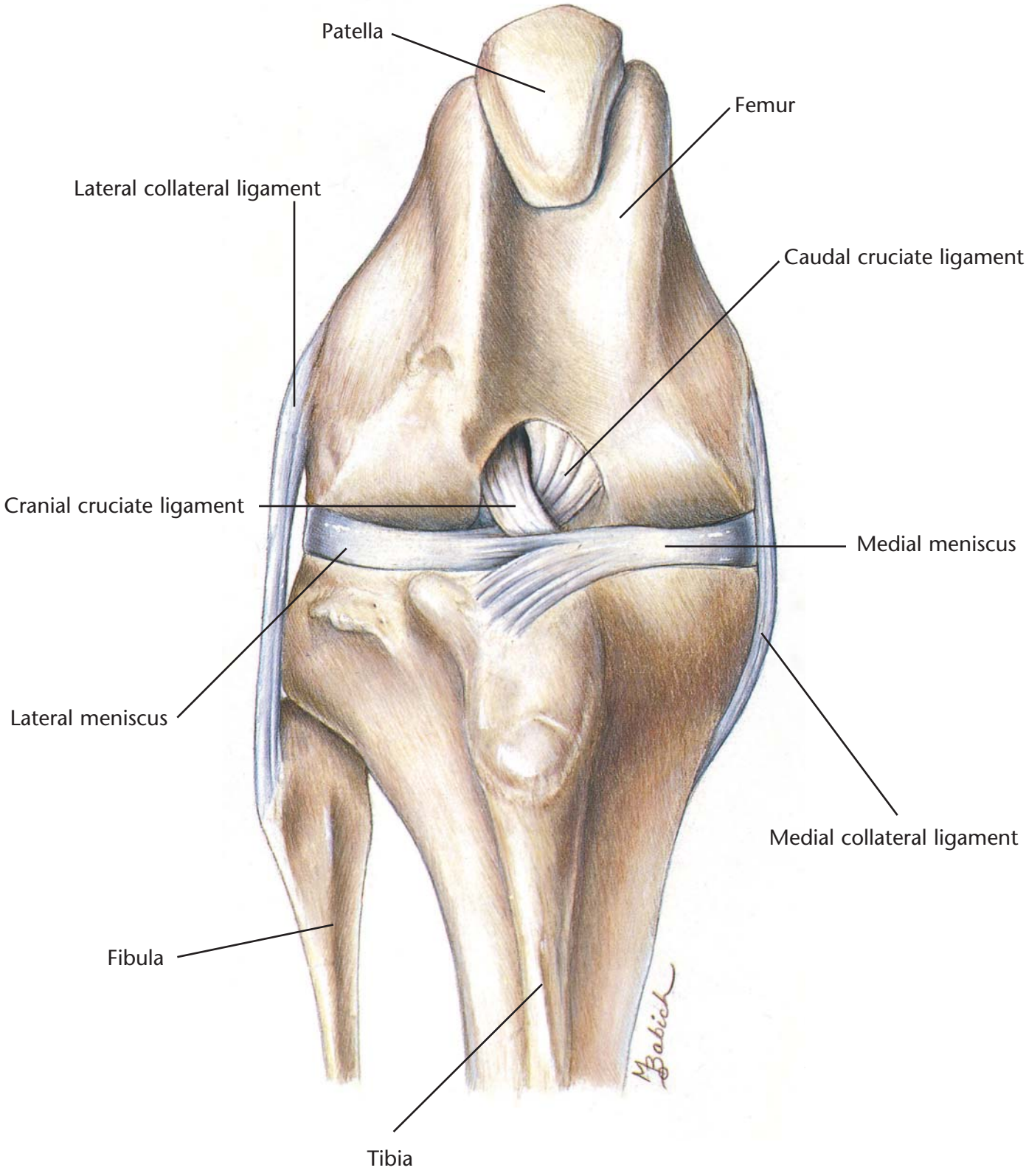
Femoral Fracture

Diagnostic Plan
History
Physical examination
Palpation of the femur
X-rays

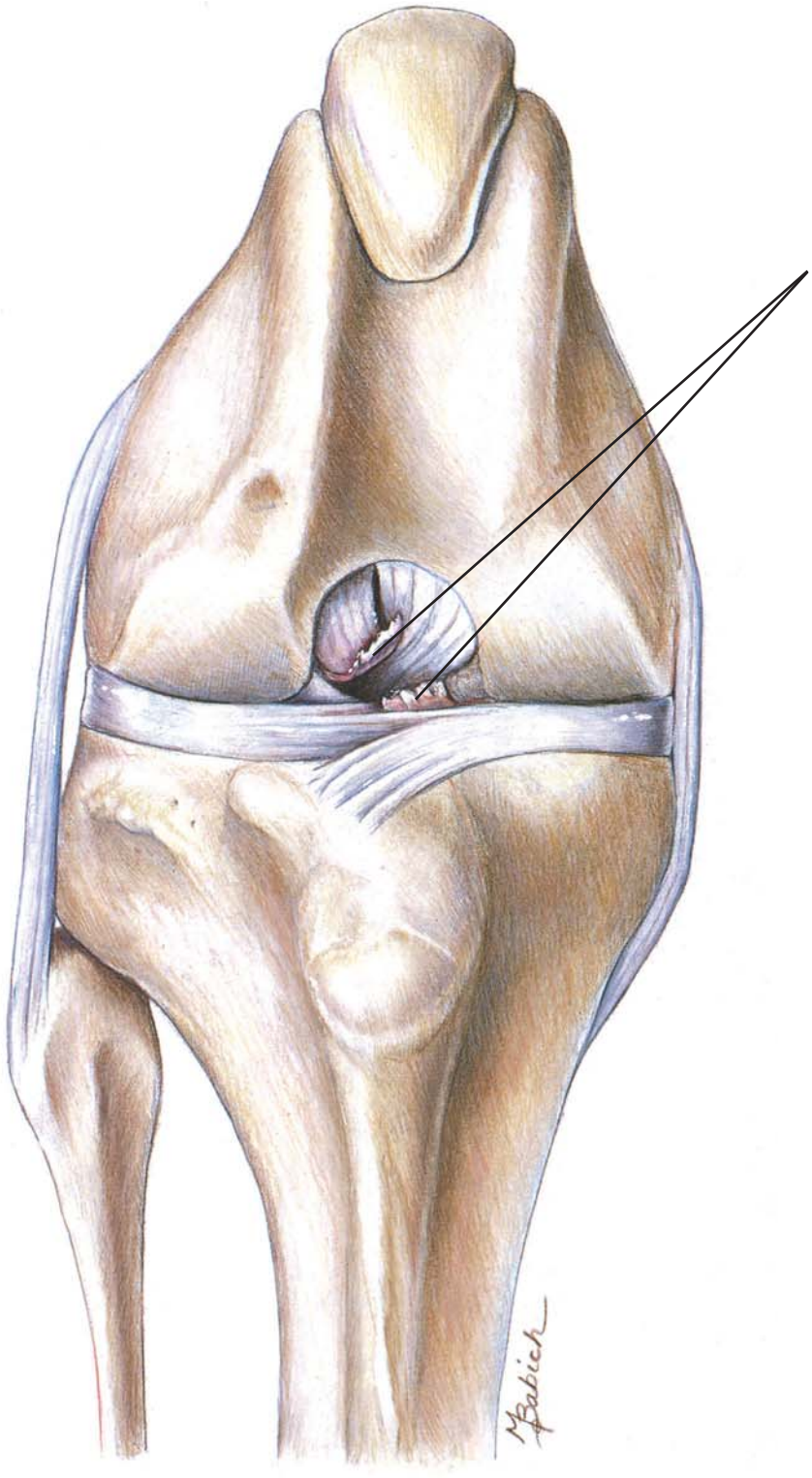
Therapeutic Plan
Surgery

Dietary Plan
A diet adequate for tissue repair

Normal Stifle



Ruptured Cranial Cruciate Ligament



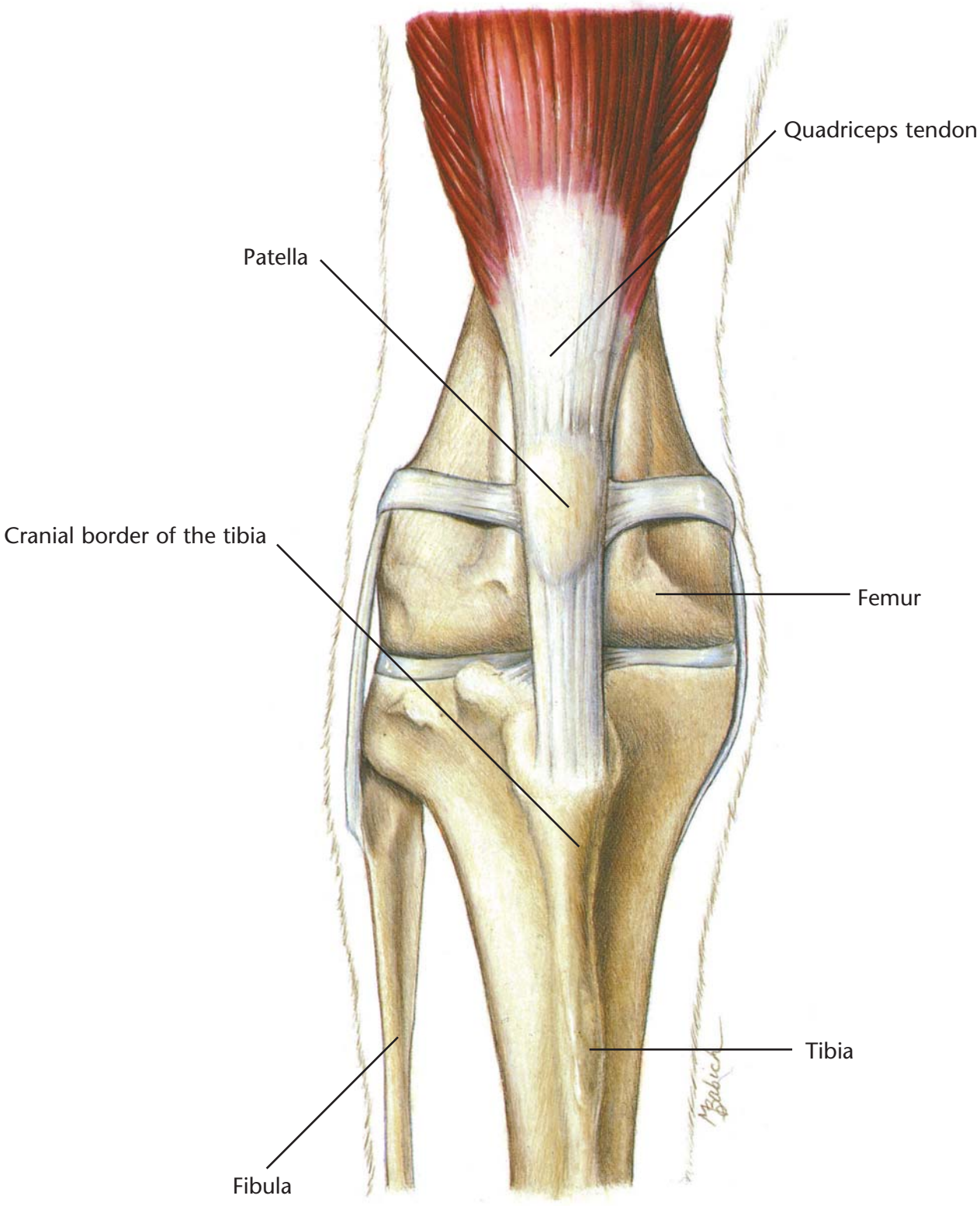
Ruptured Cranial Cruciate Ligament

Diagnostic Plan
History
Physical examination
Palpation of the knee
X-rays of the knee

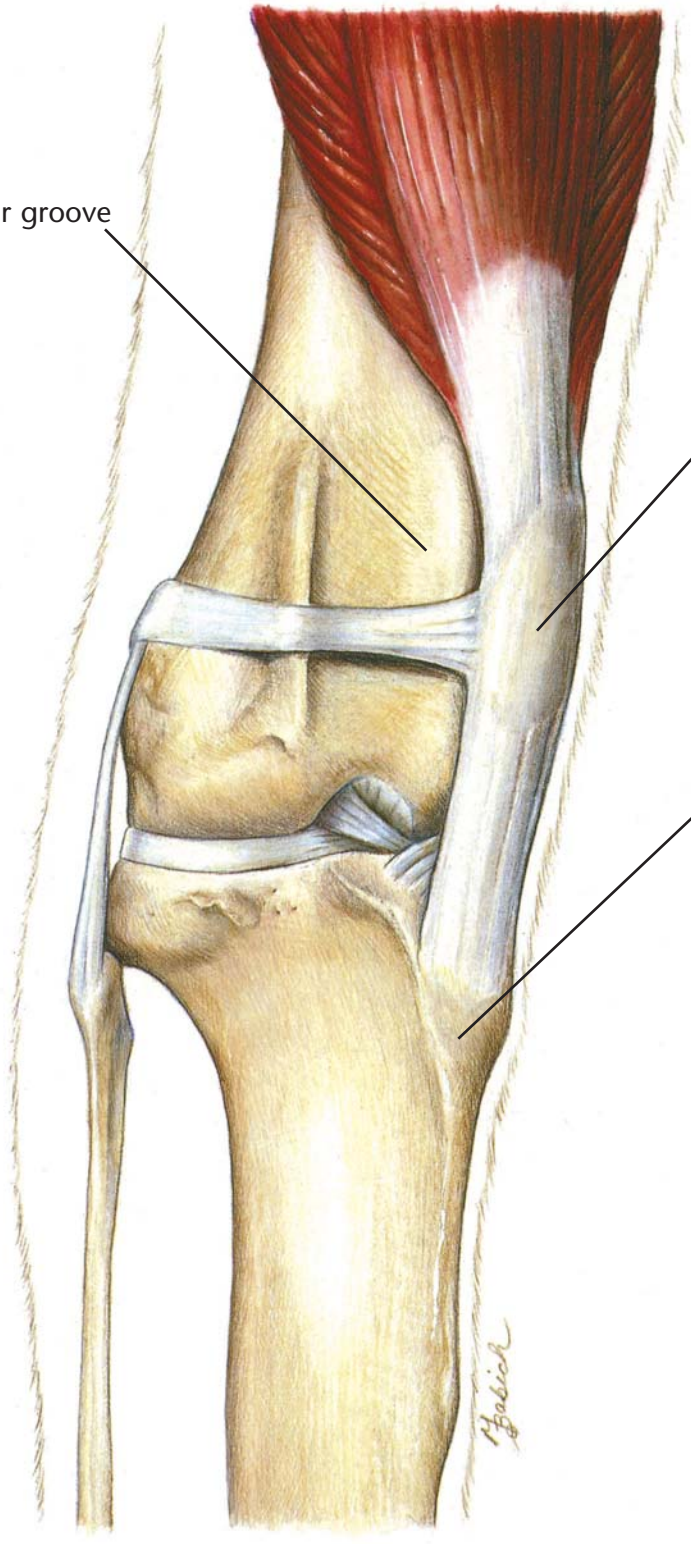
Therapeutic Plan
Enforced rest
Analgesics
Surgery

Dietary Plan
Postsurgically, a diet adequate for tissue repair
If obesity is a complicating factor, restrict caloric intake so the patient reaches and maintains an ideal body weight

Normal Stifle



Patellar Luxation



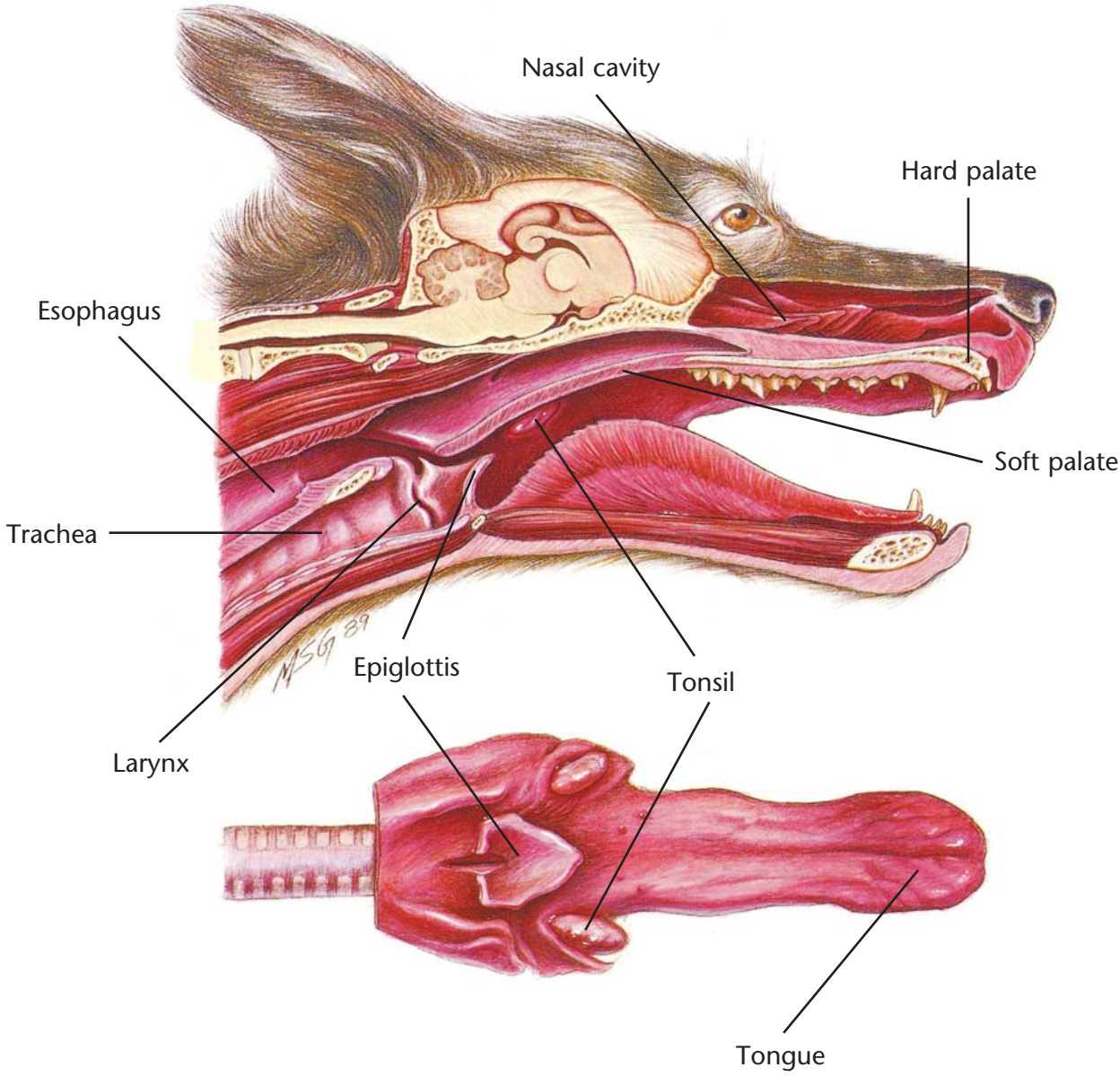
Patellar Luxation

Diagnostic Plan
History
Physical examination
Stifle palpation
Stifle x-rays

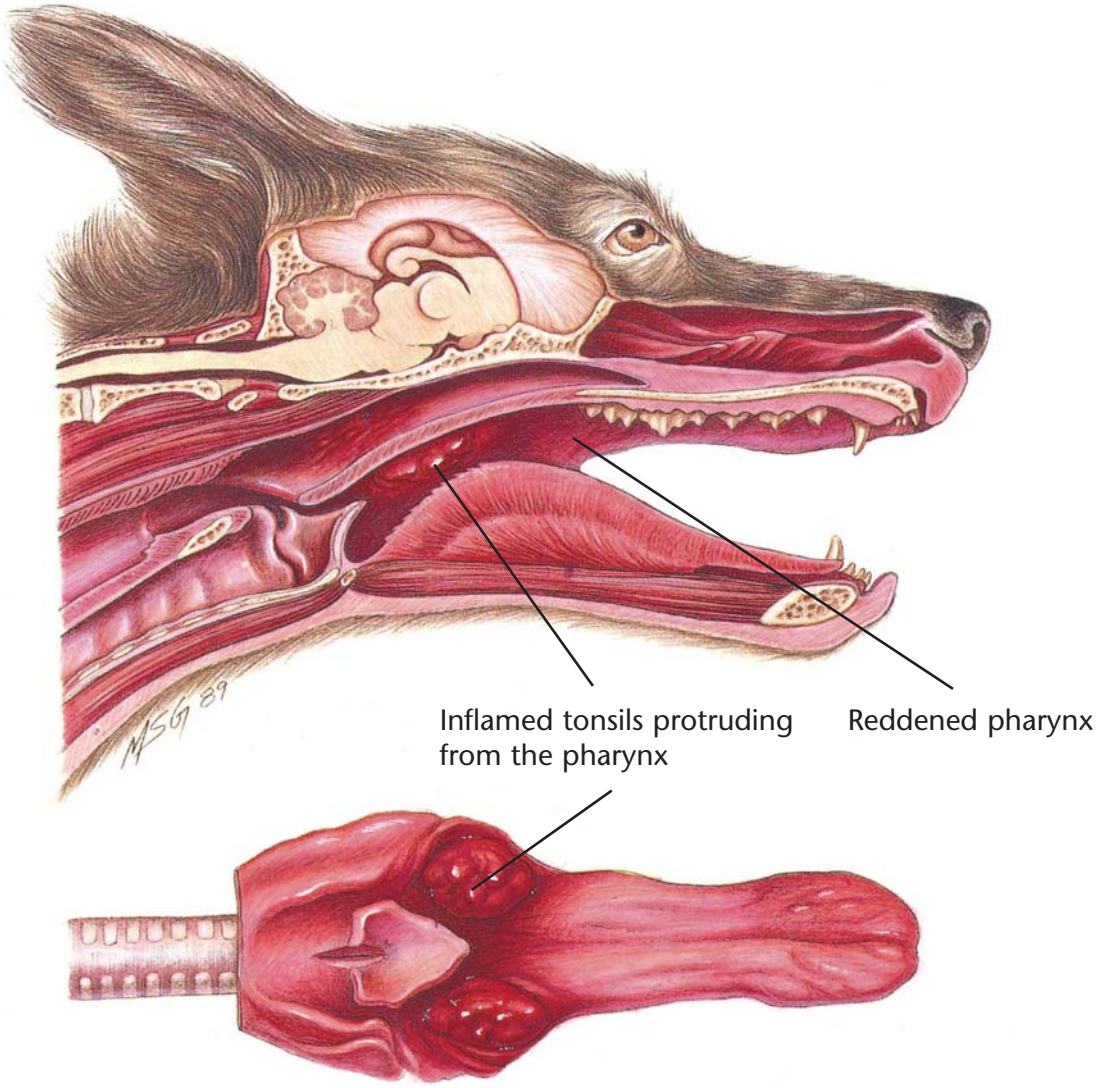
Therapeutic Plan
Surgery

Dietary Plan
Postsurgically, a diet adequate for tissue repair
If obesity is a complicating factor, restrict caloric intake so the patient reaches and maintains an ideal body weight

Normal Mouth/Upper Airway



Tonsillitis



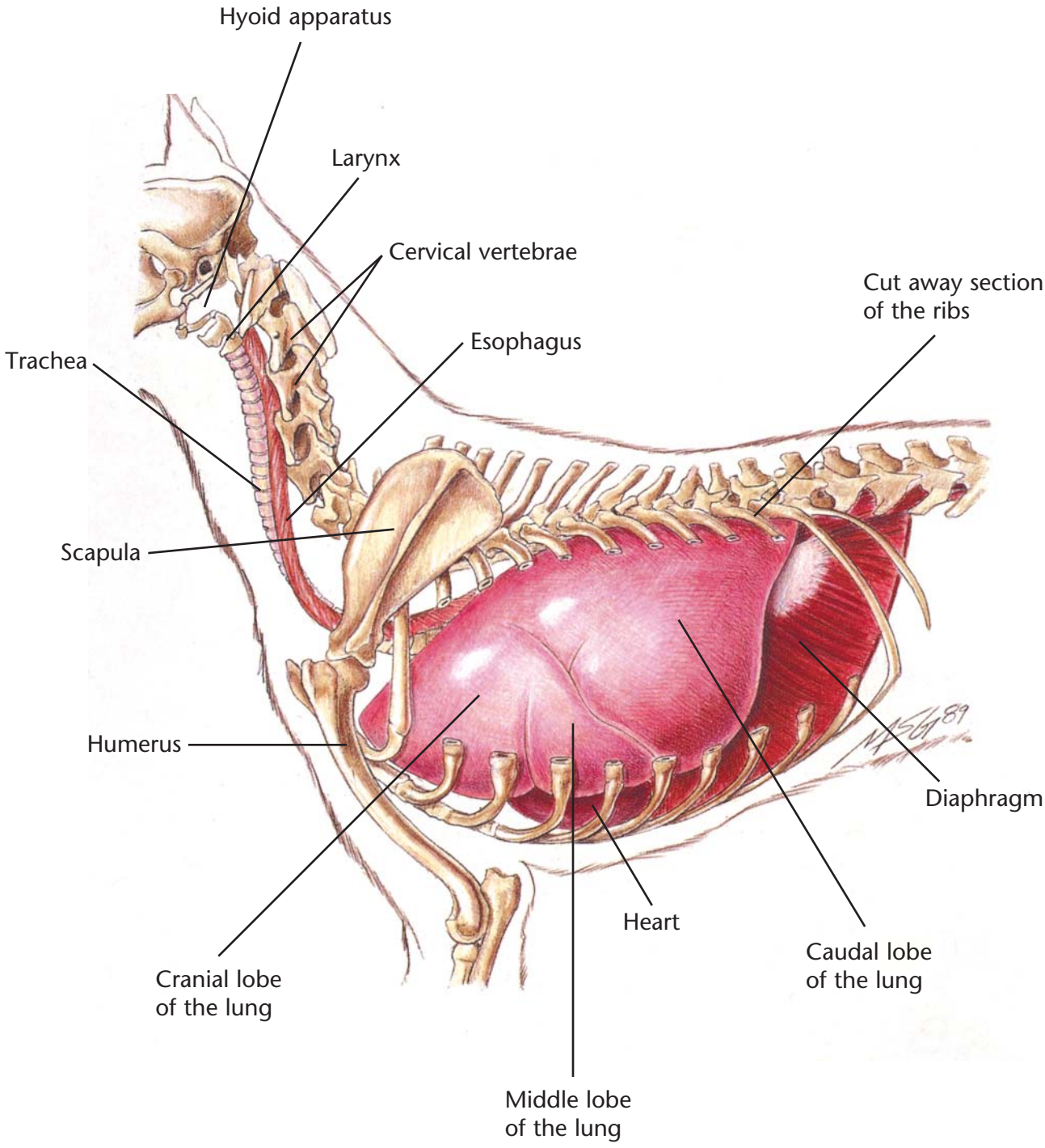
Tonsillitis

Diagnostic Plan
History
Physical examination
Examination of the tonsils
Culture of the tonsils
Cytologic study of tonsillar exudate
X-rays

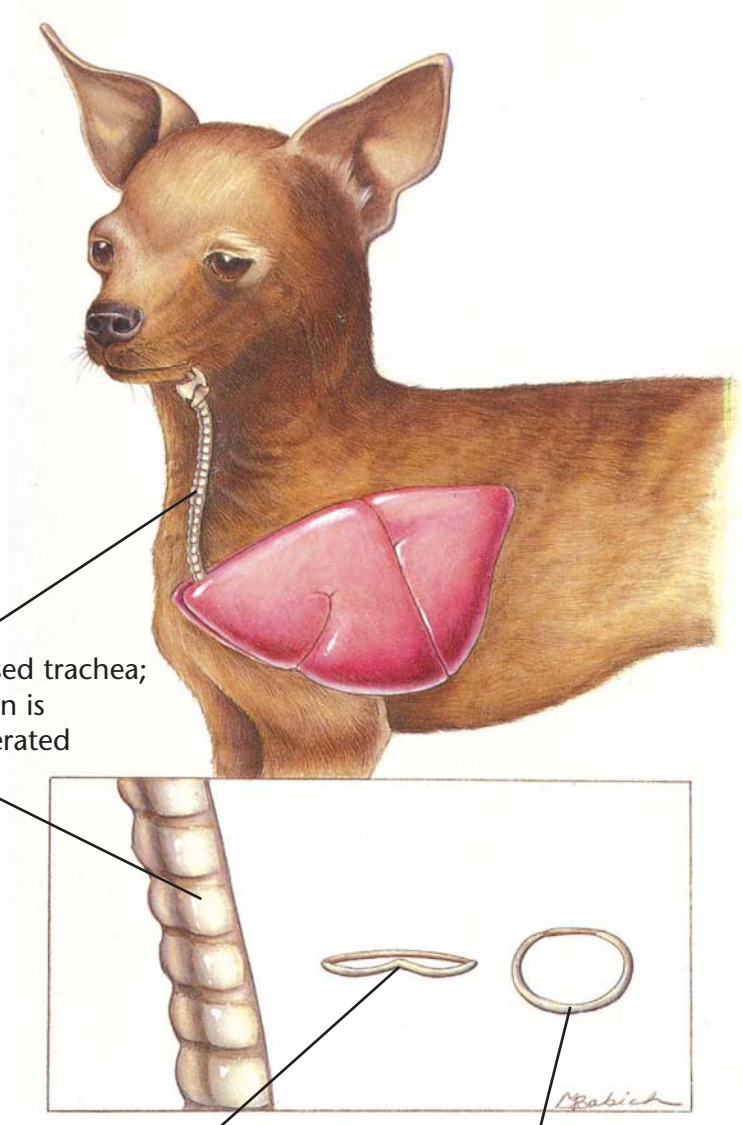
Therapeutic Plan
Elimination of the cause
Antibacterials
Tonsillectomy

Dietary Plan
A diet based on overall patient evaluation including body condition and other organ system involvement
A soft diet may minimize postsurgical pain

Normal Canine Thorax



Collapsing Trachea



Grade IV collapsed trachea; the airway lumen is essentially obliterated

The tracheal cartilage is inverted dorsally and contacts the tracheal membrane

Normal tracheal ring

Collapsing Trachea

Diagnostic Plan

History
Physical examination
Tracheal palpation
Chest auscultation
Chest x-rays
Tracheoscopy
Cultures of tracheal wash fluid

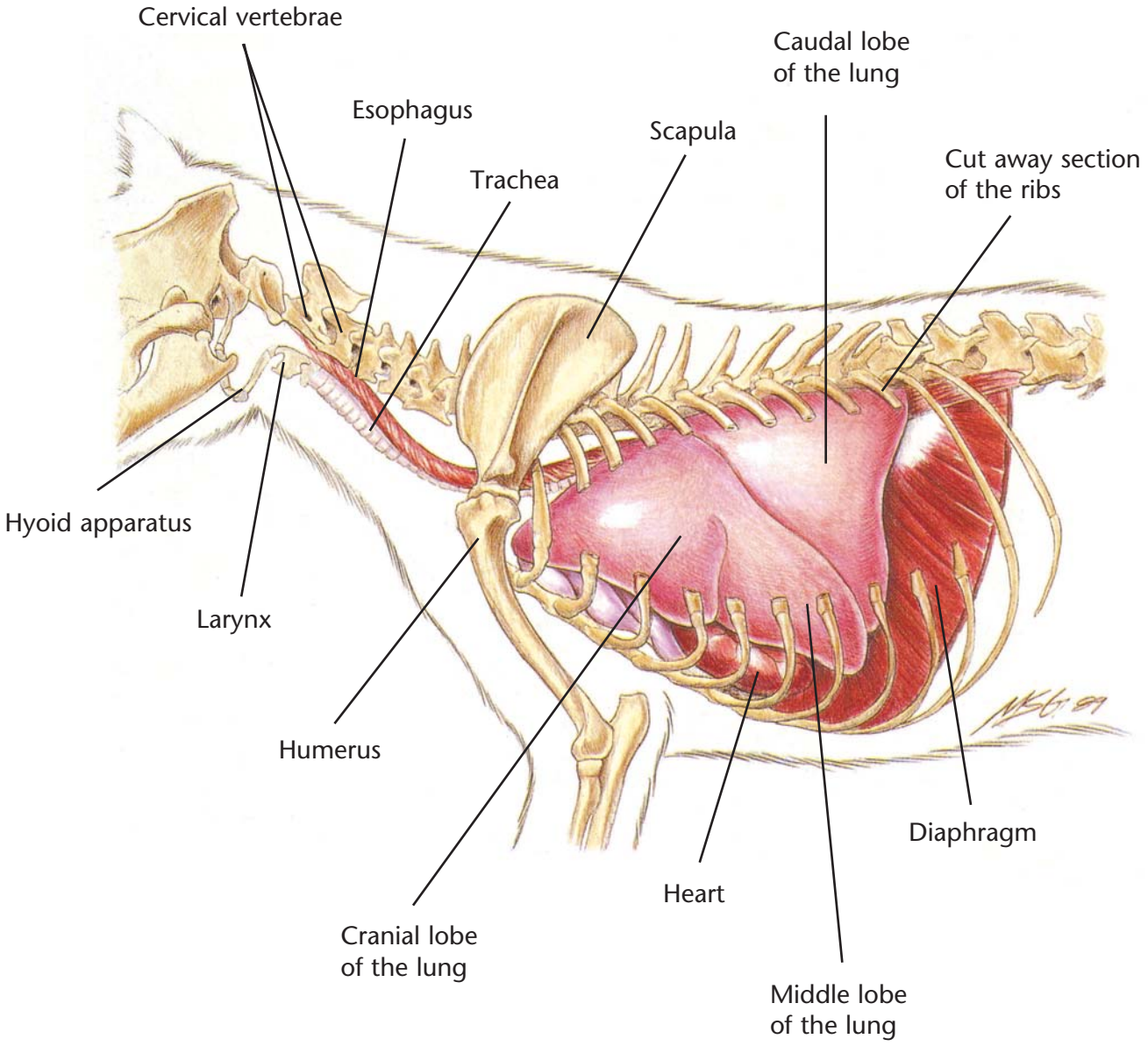
Therapeutic Plan

Activity restriction
Corticosteroids
Steam vaporization
Bronchodilators
Antitussives
Antibacterials
Surgery

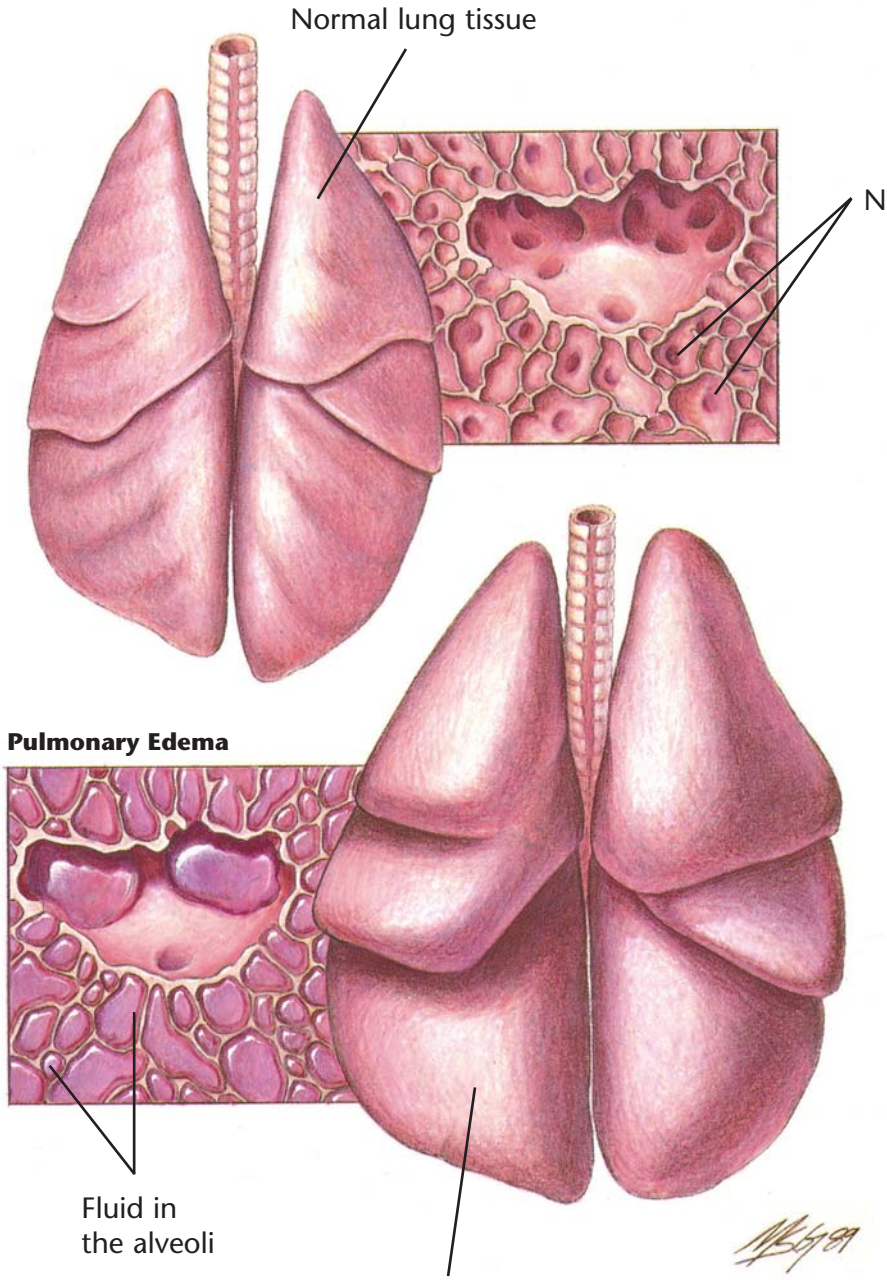
Dietary Plan

If surgery is performed, a diet adequate for tissue repair
If obesity is a complicating factor, restrict caloric intake so the patient reaches and maintains an ideal body weight

Normal Feline Thorax



Pulmonary Edema



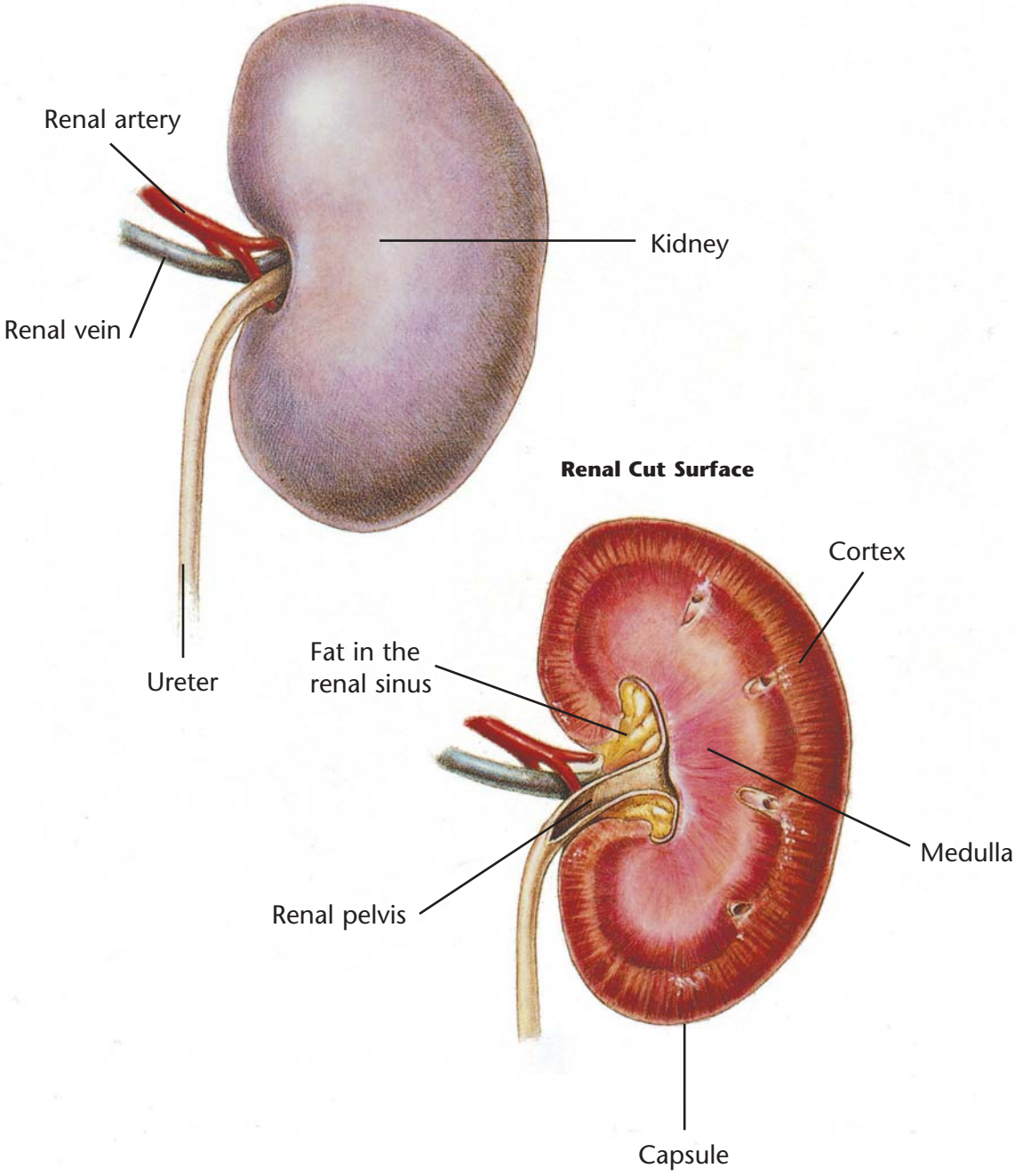
Pulmonary Edema

Diagnostic Plan
History
Physical examination
Chest auscultation
Chest x-rays
Electrocardiography
Blood work
Urinalysis

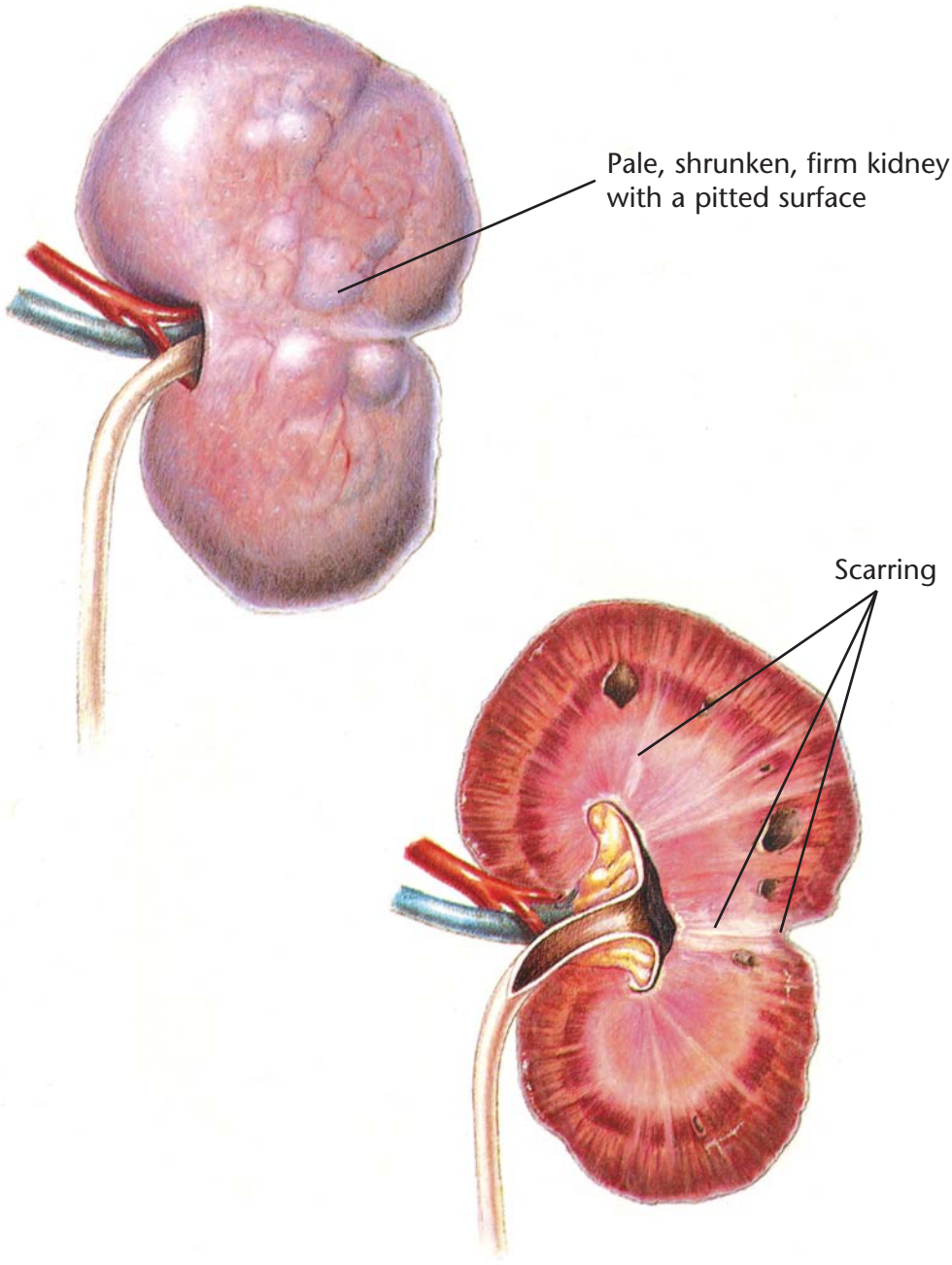
Therapeutic Plan
Activity restriction
Oxygen therapy
Morphine
Diuretics
Corticosteroids
Nebulization
Bronchodilators
Vasodilators
Drugs to strengthen the heart

Dietary Plan
A diet based on individual patient evaluation including body condition and other organ system involvement or disease
Avoid excess sodium

Normal Canine Kidney



Chronic Renal Disease



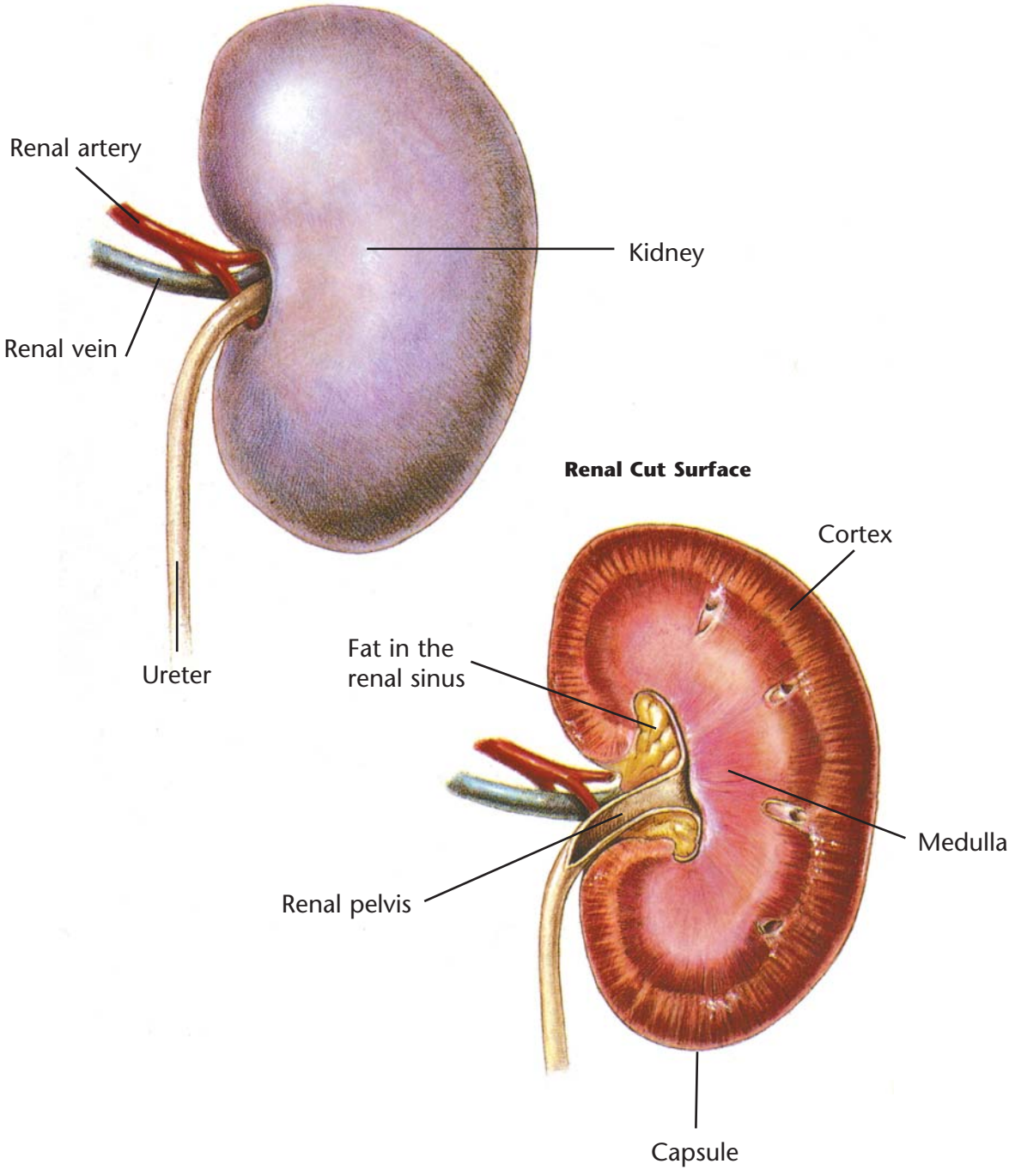
Chronic Renal Disease

Diagnostic Plan
History
Physical examination
Abdominal palpation
Urinalysis
Blood work
Blood pressure measurement
Abdominal x-rays
Kidney biopsy
Ultrasound

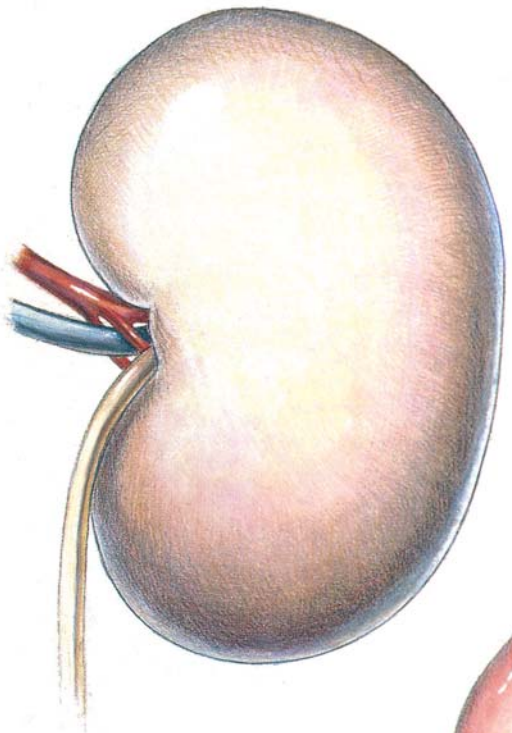
Therapeutic Plan
Fluid therapy
Sodium bicarbonate
Drugs to control stomach acidity
Phosphate binders
Blood transfusions
Anabolic steroids
Peritoneal dialysis

Dietary Plan
A diet with controlled and appropriate levels of protein, phosphorus, sodium, and calories

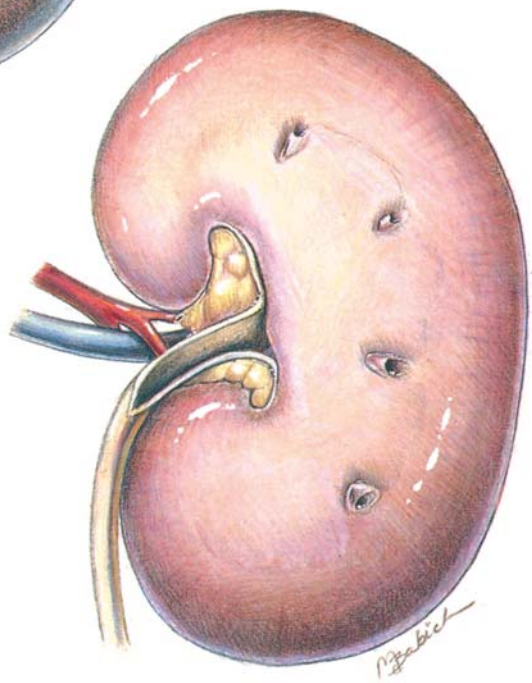
Normal Canine Kidney



Acute Renal Failure



Pale, swollen kidney



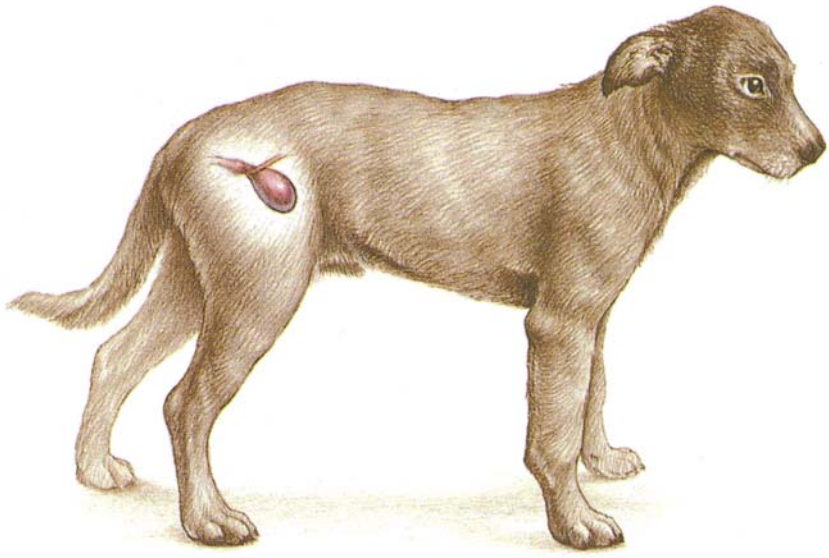
Acute Renal Failure

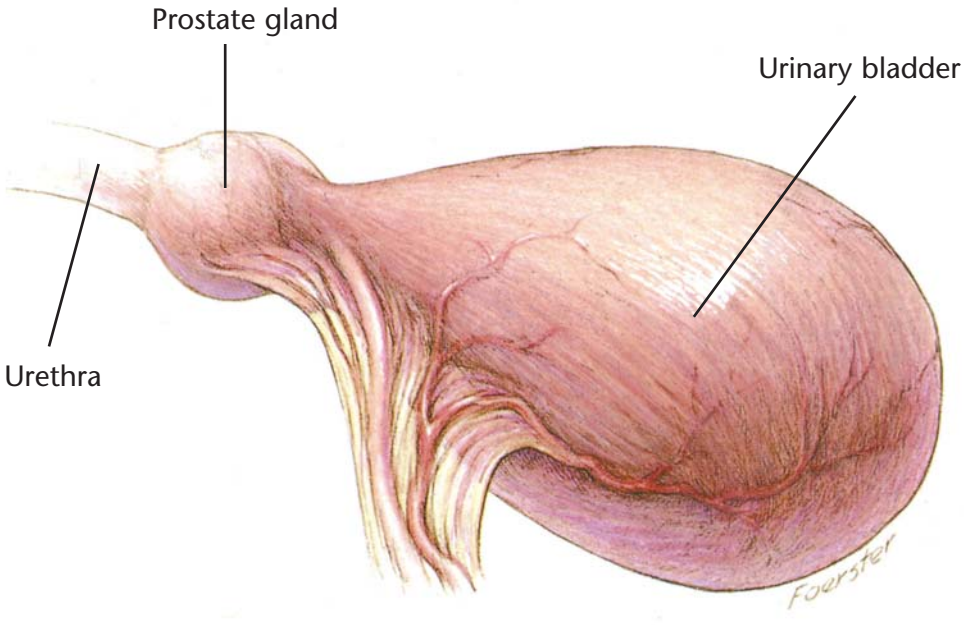
Diagnostic Plan
History
Physical examination
Abdominal palpation
Urinalysis
Blood work
Abdominal x-rays
Kidney biopsy
Ultrasound

Therapeutic Plan
Fluid therapy
Diuretics
Phosphate binders
Sodium bicarbonate
Drugs to control stomach acidity
Peritoneal dialysis

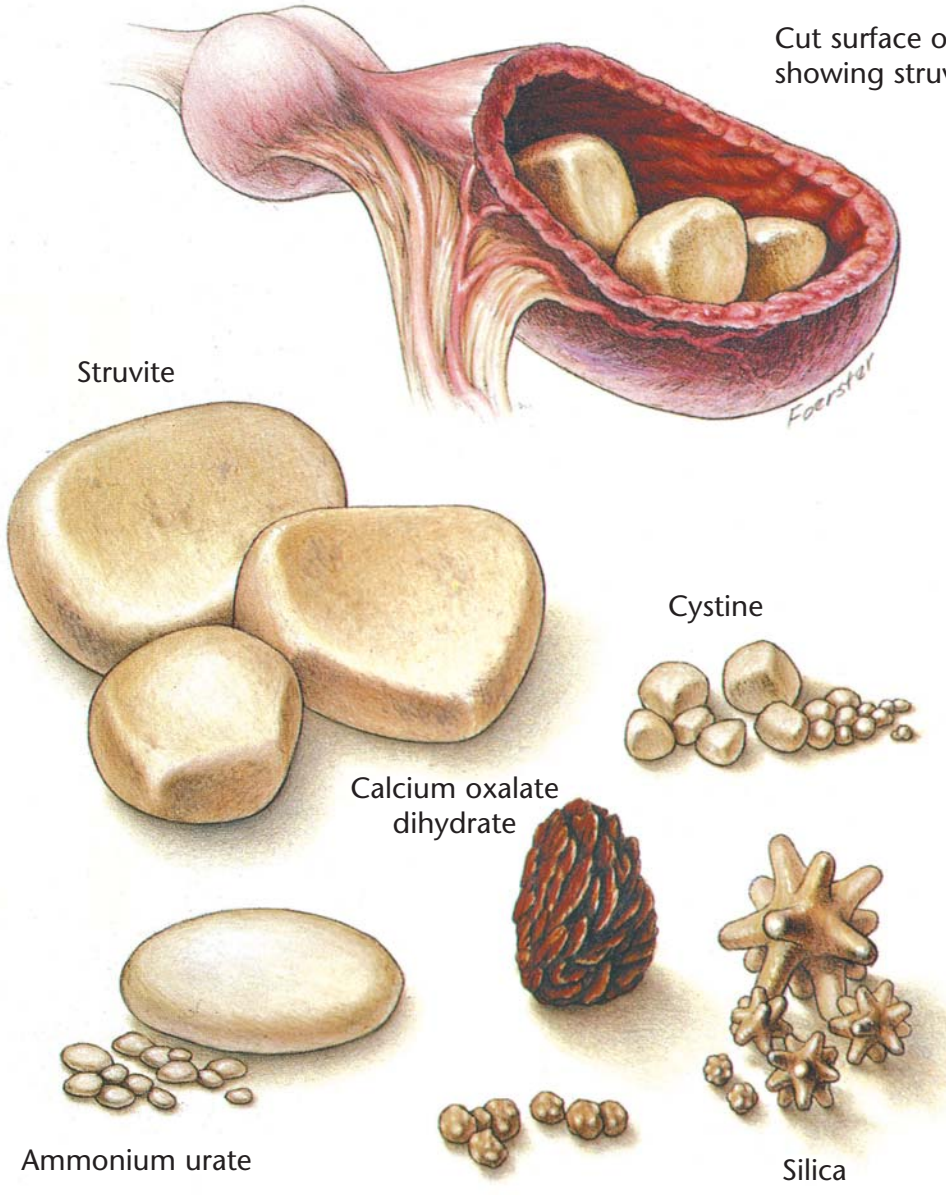
Dietary Plan
A diet with controlled and appropriate levels of protein, phosphorus, sodium, and calories

Normal Urinary Bladder





Bladder Stones



Bladder Stones

Diagnostic Plan

History
Physical examination
Palpation of the urethra and urinary bladder
Urinalysis
Urine culture
Blood work
X-rays of the urinary tract
Quantitative analysis of passed bladder stones

Therapeutic Plan*

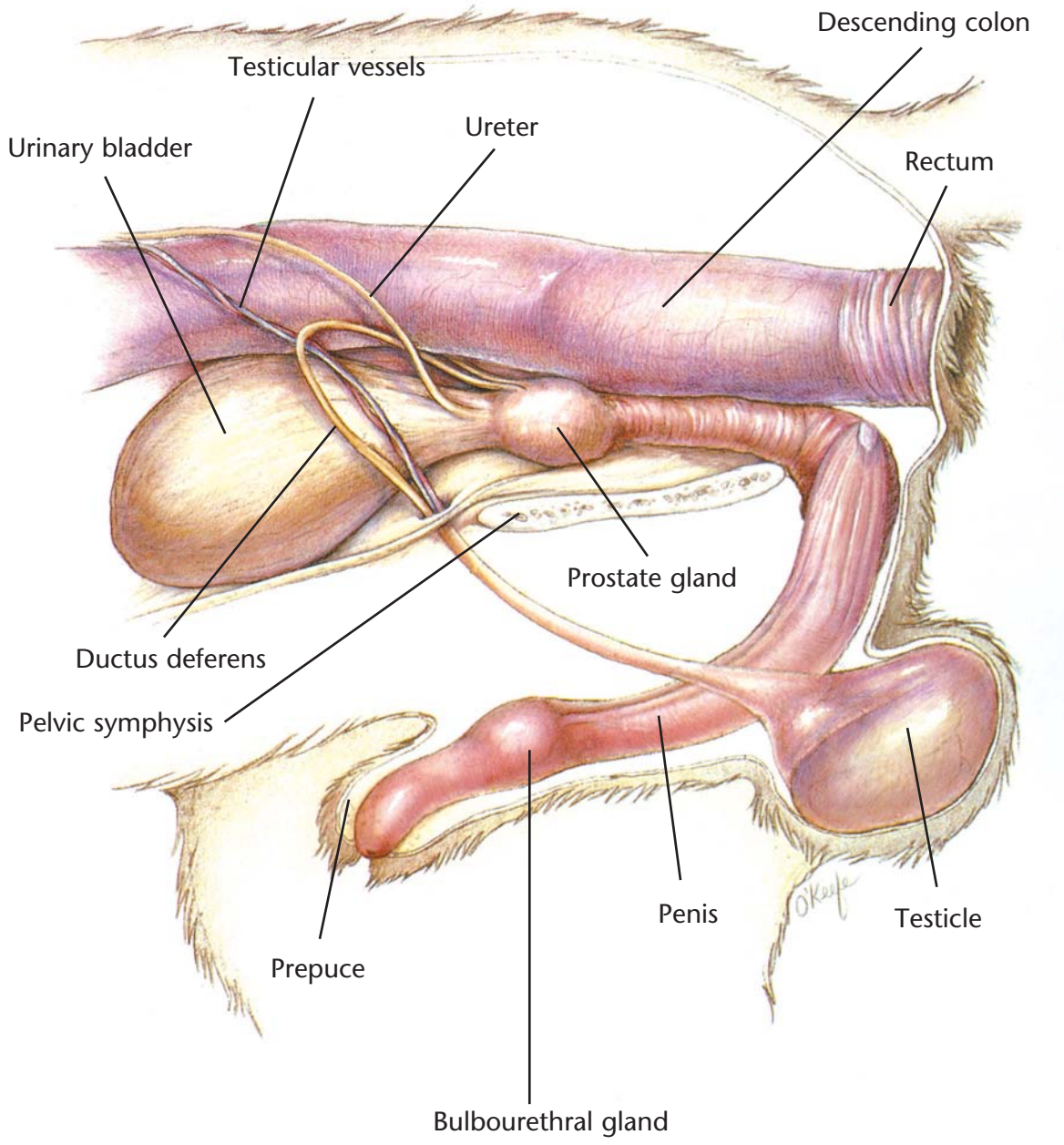
Fluid therapy
Antibacterials
Urease inhibitors
Xanthine oxidase inhibitors
Urine alkalizers
Thiol-containing drugs
Surgery
Voiding urohydropropulsion

Dietary Plan*

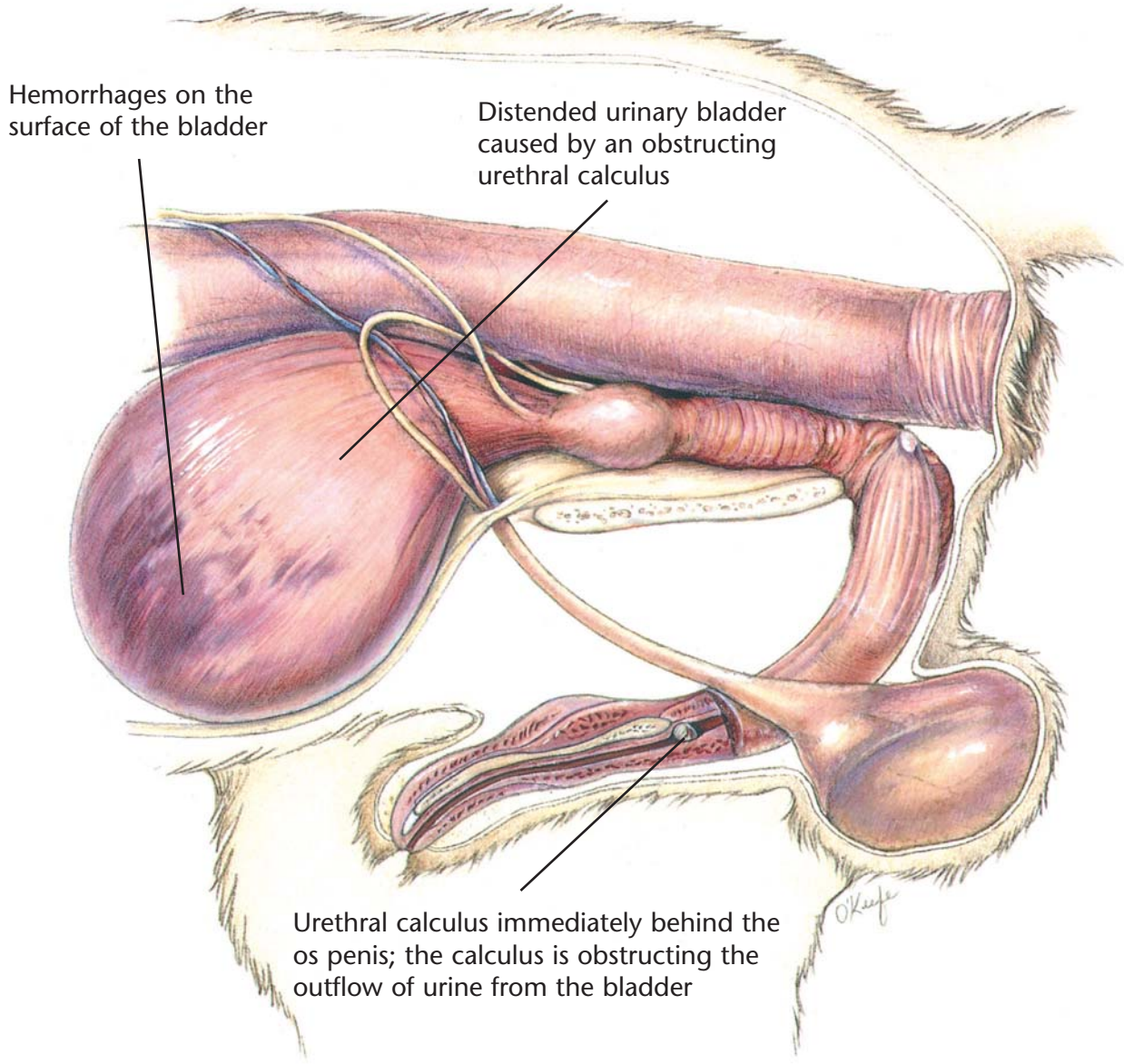
For dissolution, the proper calculolytic diet
To aid in prevention or recurrence, a diet that allows the body to produce the appropriate urine pH and avoids excesses of the urolith's precursors
If surgery is necessary, a diet adequate for tissue repair

*Determined by stone type

Normal Canine Lower Urinary System



Canine Urethral Obstruction



Canine Urethral Obstruction

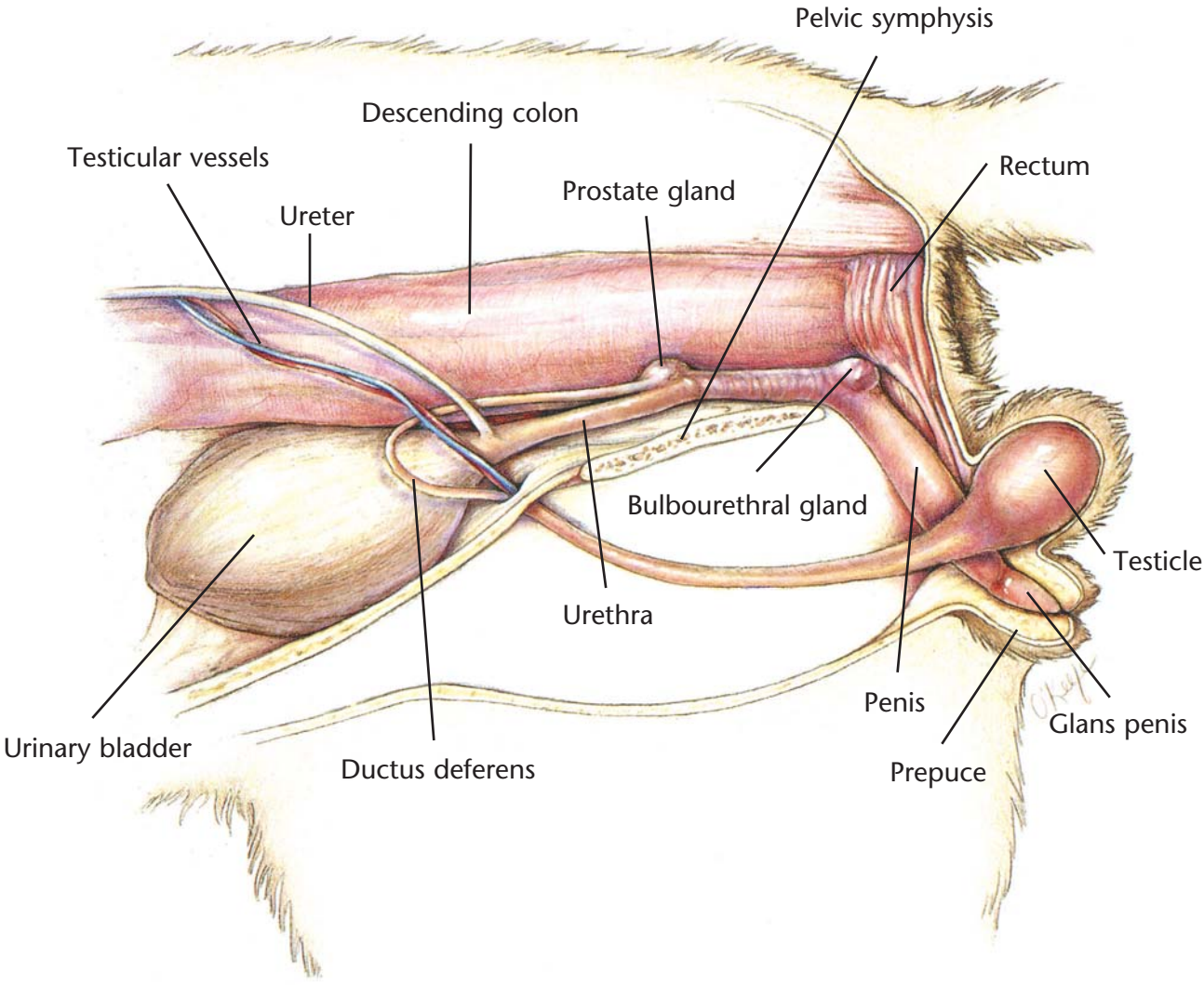
Diagnostic Plan
History
Physical examination
Urethral palpation
Abdominal palpation
X-rays of the urinary tract
Urinalysis
Urine culture
Blood work
Analysis of passed bladder stones

Therapeutic Plan
Emptying of the bladder
Fluid therapy
Flushing of the urethral calculi into the bladder
Surgery

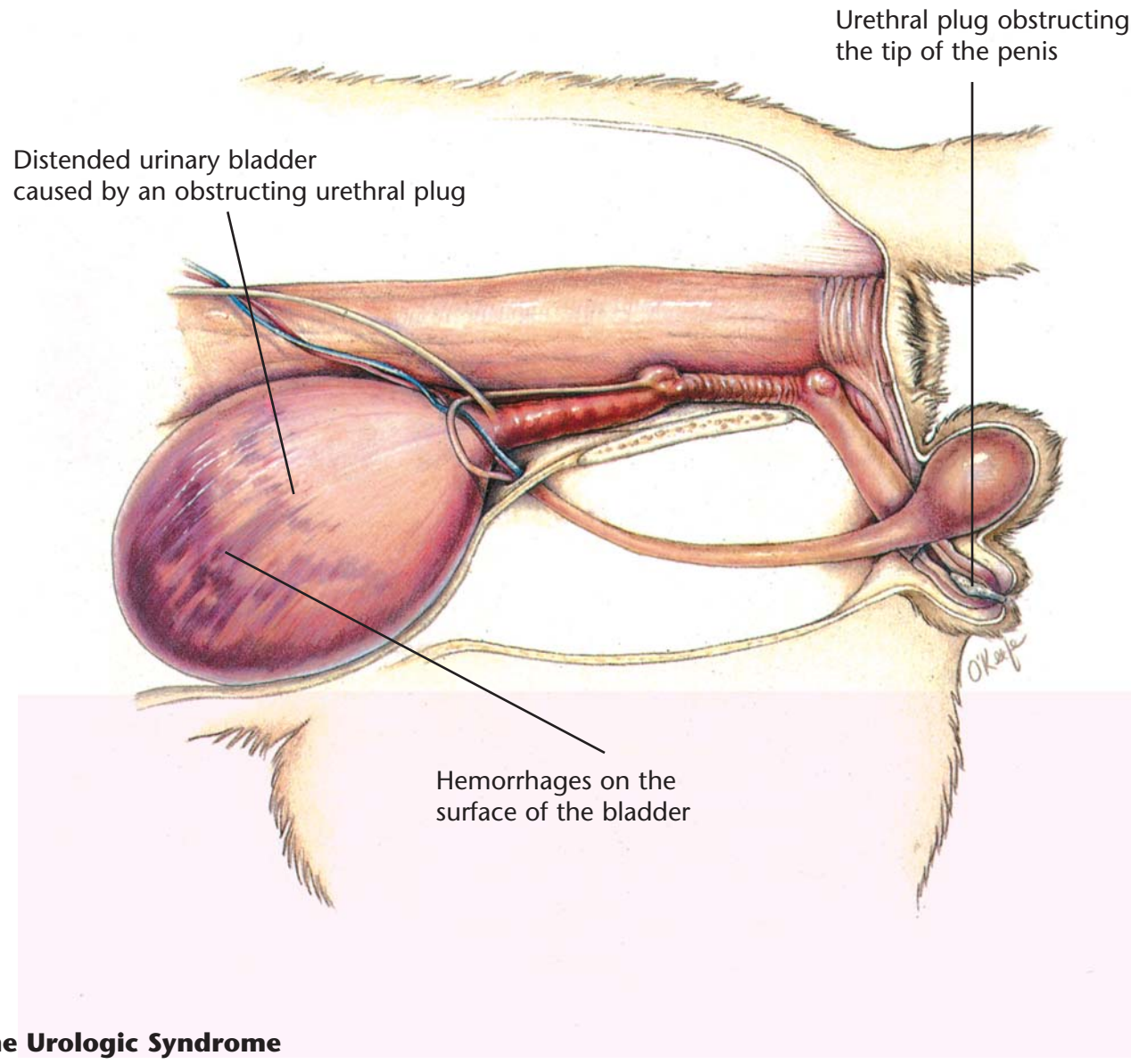
Dietary Plan
For dissolution, the proper calculolytic diet
To aid in prevention or recurrence, a diet that allows the body to produce the appropriate urine pH and avoids excesses of the urolith's precursors
If surgery is necessary, a diet adequate for tissue repair

Hill's Atlas of Veterinary Clinical Anatomy

Normal Feline Lower Urinary System



Feline Lower Urinary Tract Disease



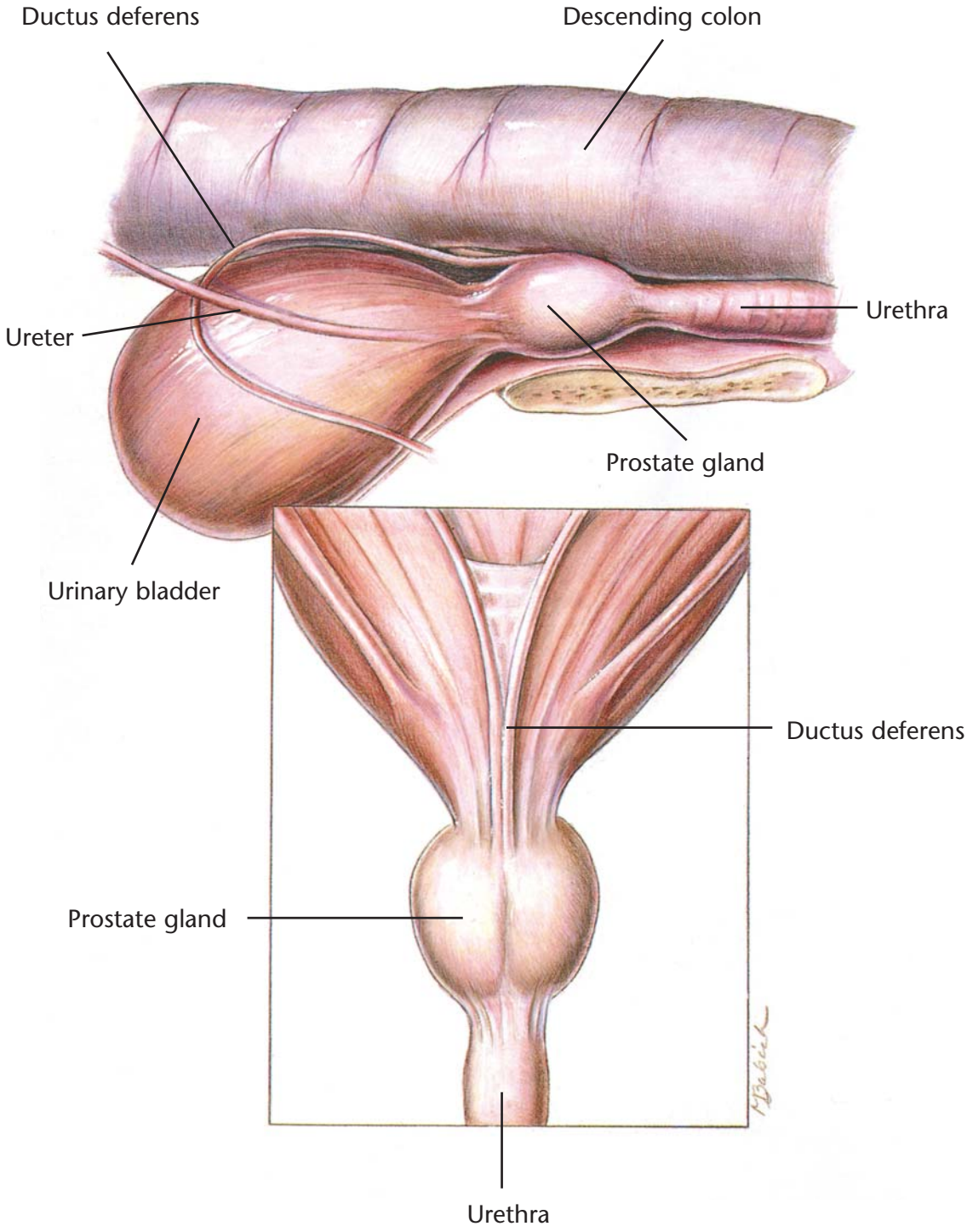
Feline Urologic Syndrome

Diagnostic Plan
History
Physical examination
Abdominal palpation
Urethral palpation
Urinalysis
Urine culture
X-rays of the urinary tract
Blood work

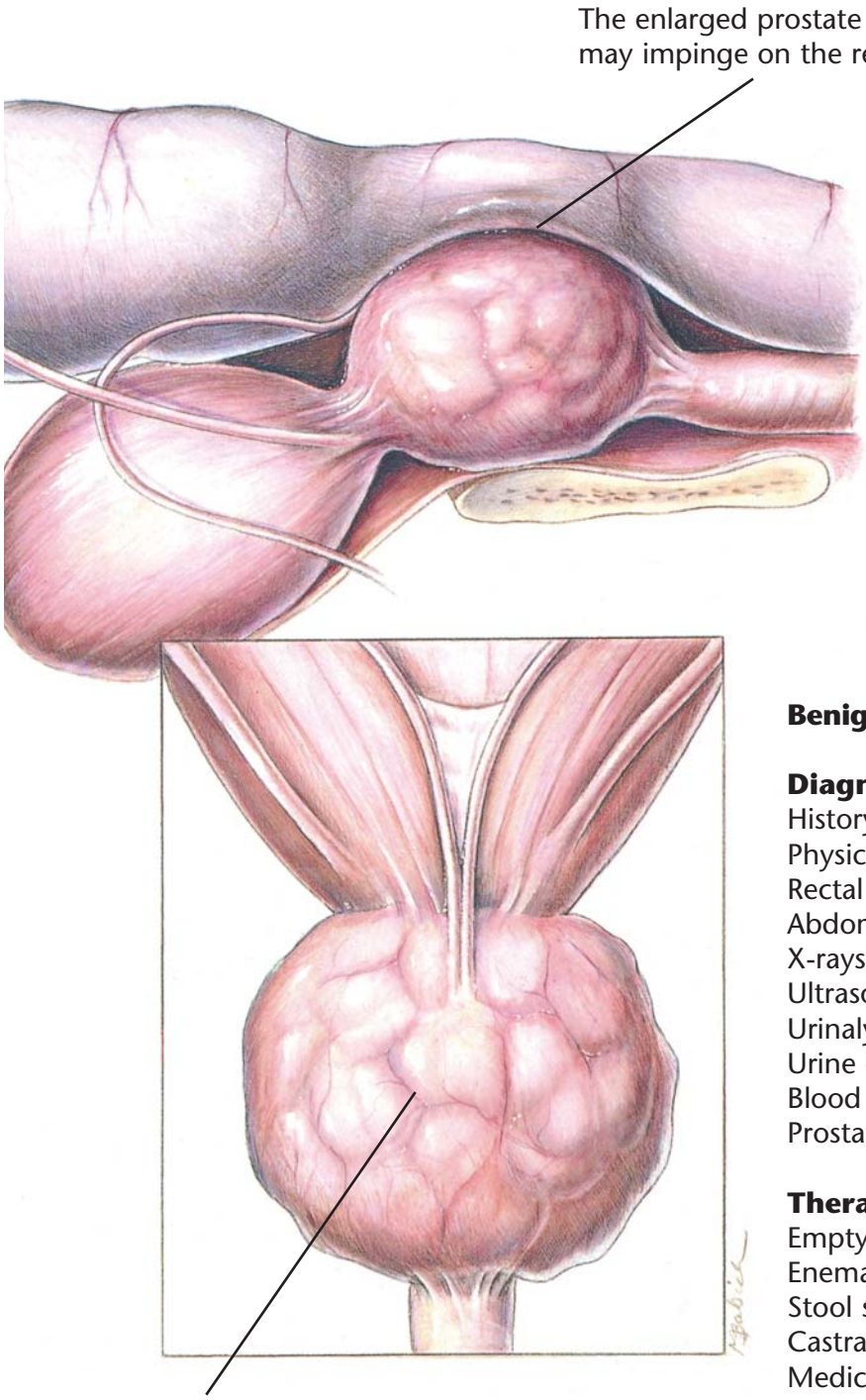
Therapeutic Plan
Emptying of the bladder
Fluid therapy
Removal of the urinary obstruction

Dietary Plan
For dissolution, the proper calculolytic diet
To aid in prevention or recurrence, a diet that allows the body to produce the appropriate urine pH and avoids excesses of the urolith's precursors
If surgery is necessary, a diet adequate for tissue repair

Normal Prostate Gland



Benign Prostatic Hyperplasia



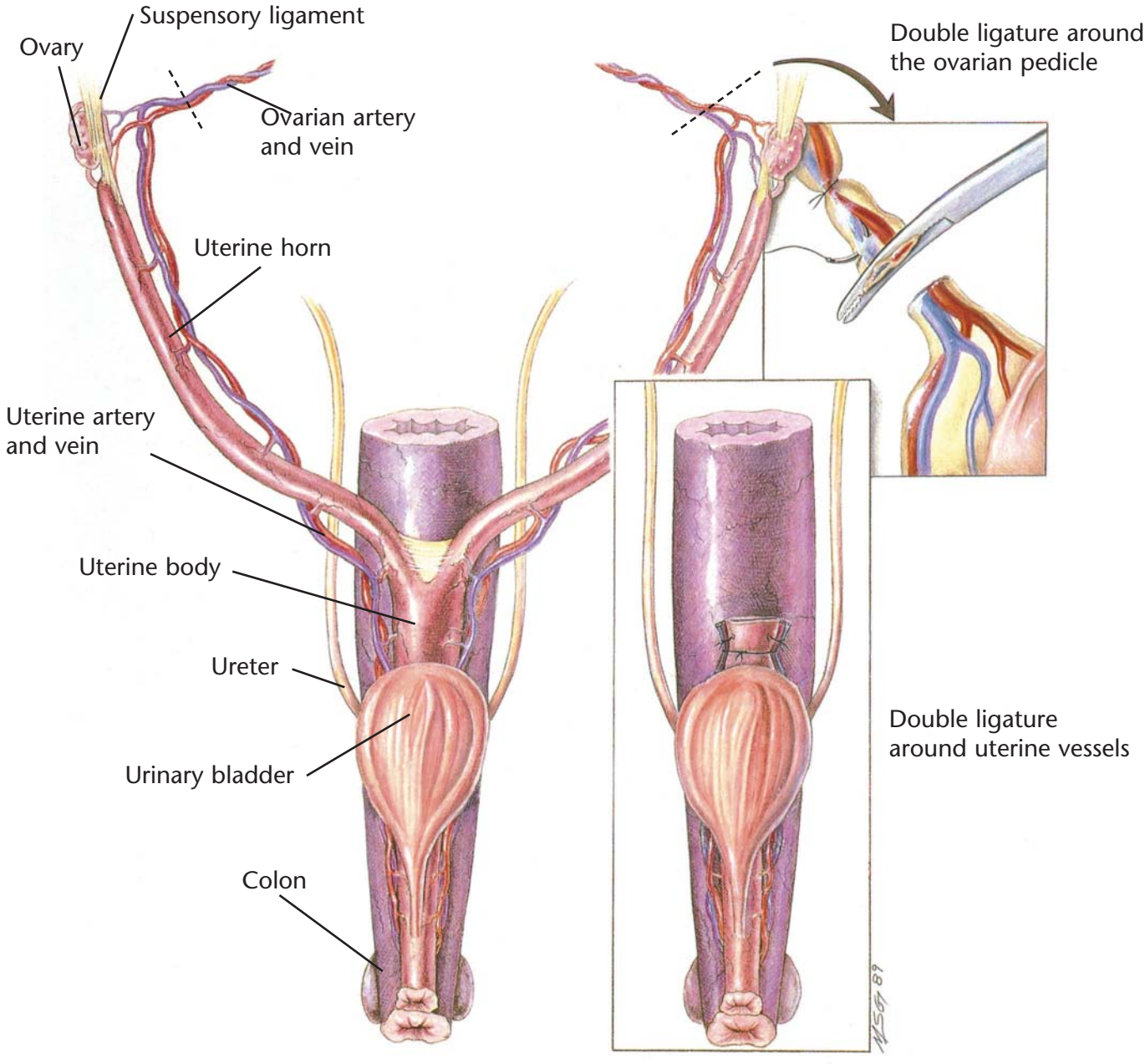
Benign Prostatic Hyperplasia

Diagnostic Plan
History
Physical examination
Rectal palpation
Abdominal palpation
X-rays
Ultrasound
Urinalysis
Urine culture
Blood work
Prostate biopsy

Therapeutic Plan
Emptying of the bladder
Enemas
Stool softeners
Castration
Medical therapy

Dietary Plan
If surgery is necessary, a diet adequate for tissue repair
A low residue food

Ovariohysterectomy

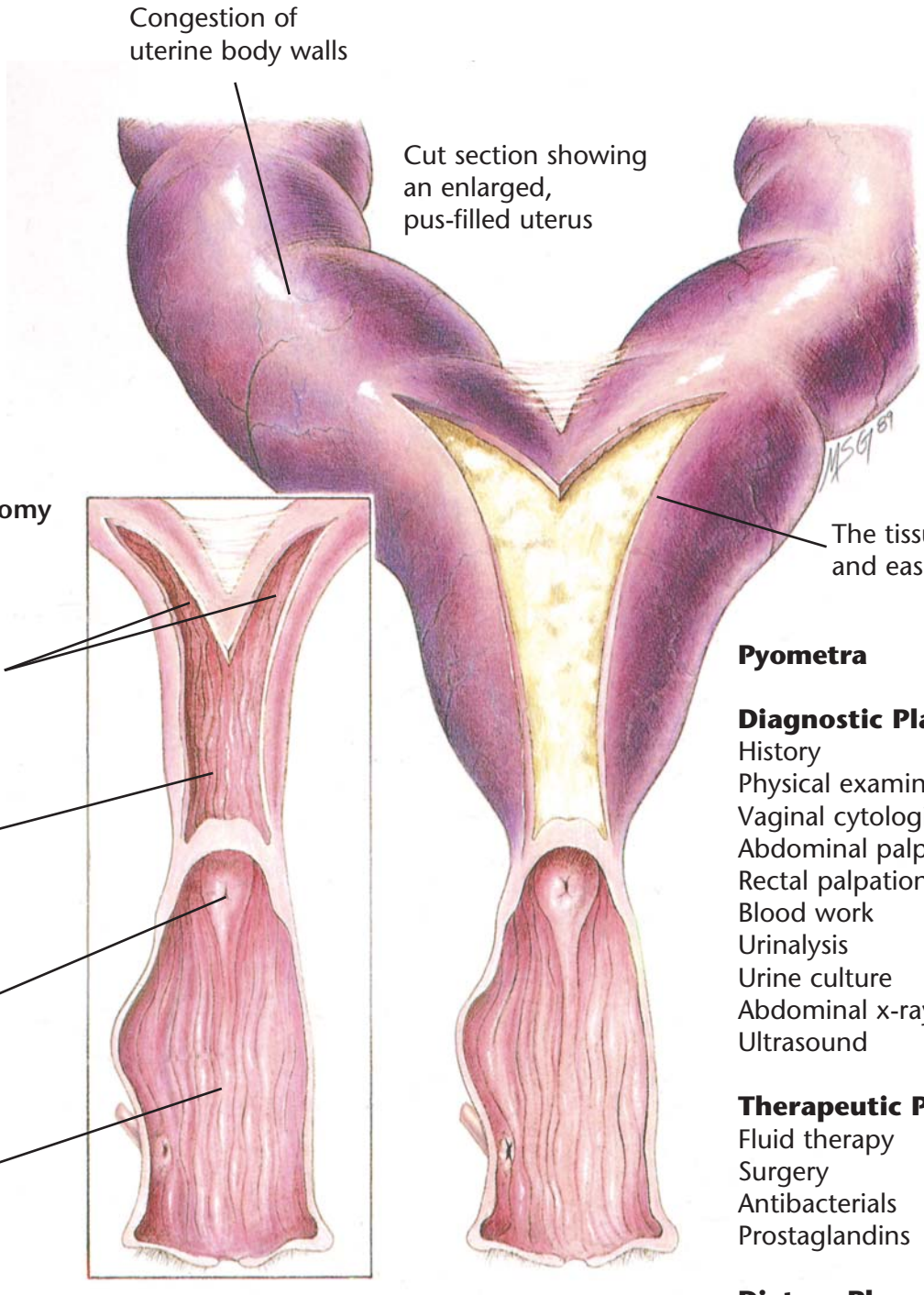


Ovariohysterectomy

Indications
Sterilization
Ovarian disease
Uterine disease
Behavioral problems
Vaginal hyperplasia
Diabetes
Epilepsy
Mammary tumor prevention

Dietary Plan
Postsurgically, a diet adequate for tissue repair

Pyometra



Pyometra

Diagnostic Plan

History
Physical examination
Vaginal cytologic study
Abdominal palpation
Rectal palpation
Blood work
Urinalysis
Urine culture
Abdominal x-rays
Ultrasound

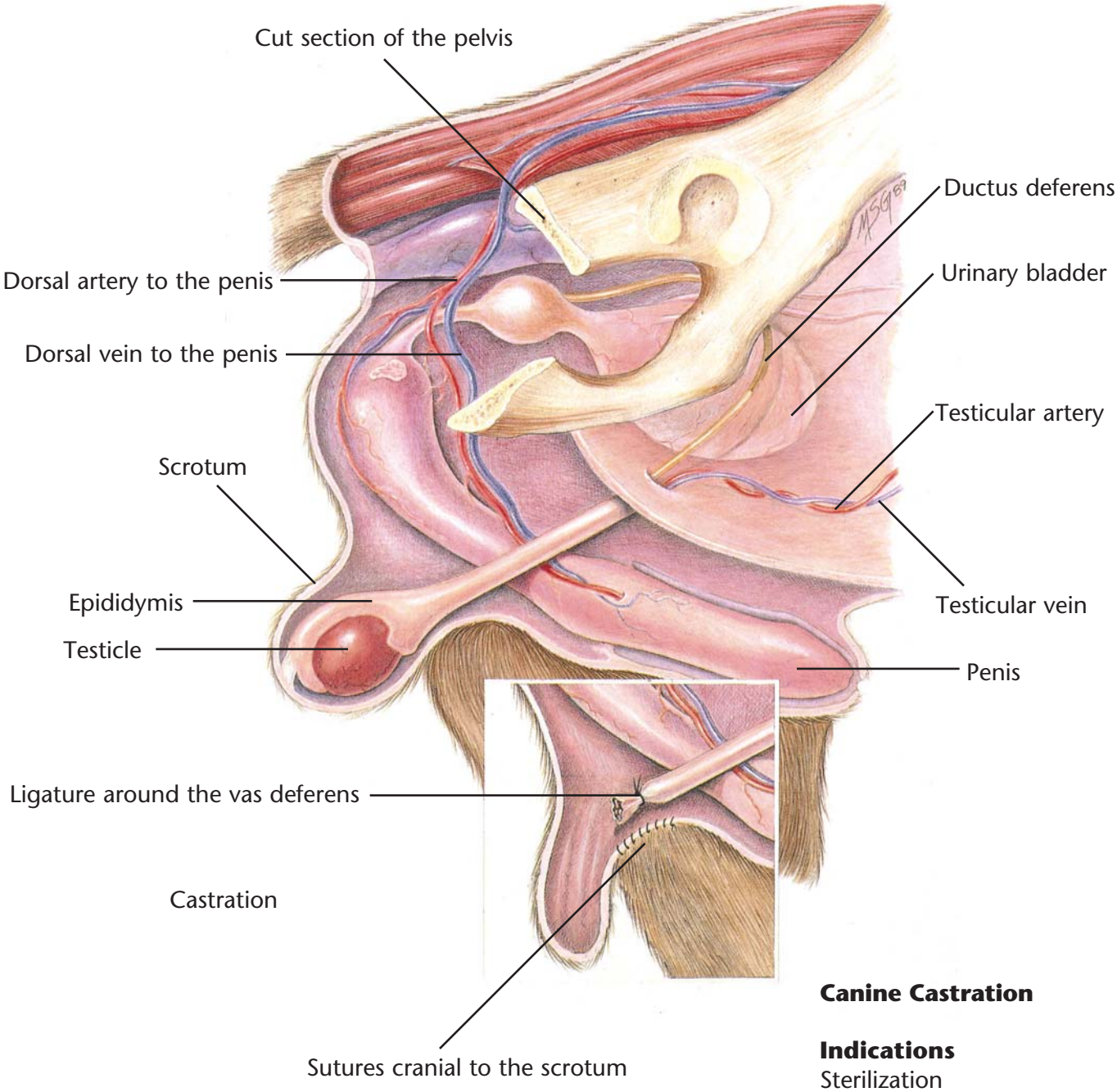
Therapeutic Plan

Fluid therapy
Surgery
Antibacterials
Prostaglandins

Dietary Plan

A diet based on individual patient evaluation including body condition and other organ system involvement
Postsurgically, a diet adequate for tissue repair

Canine Castration

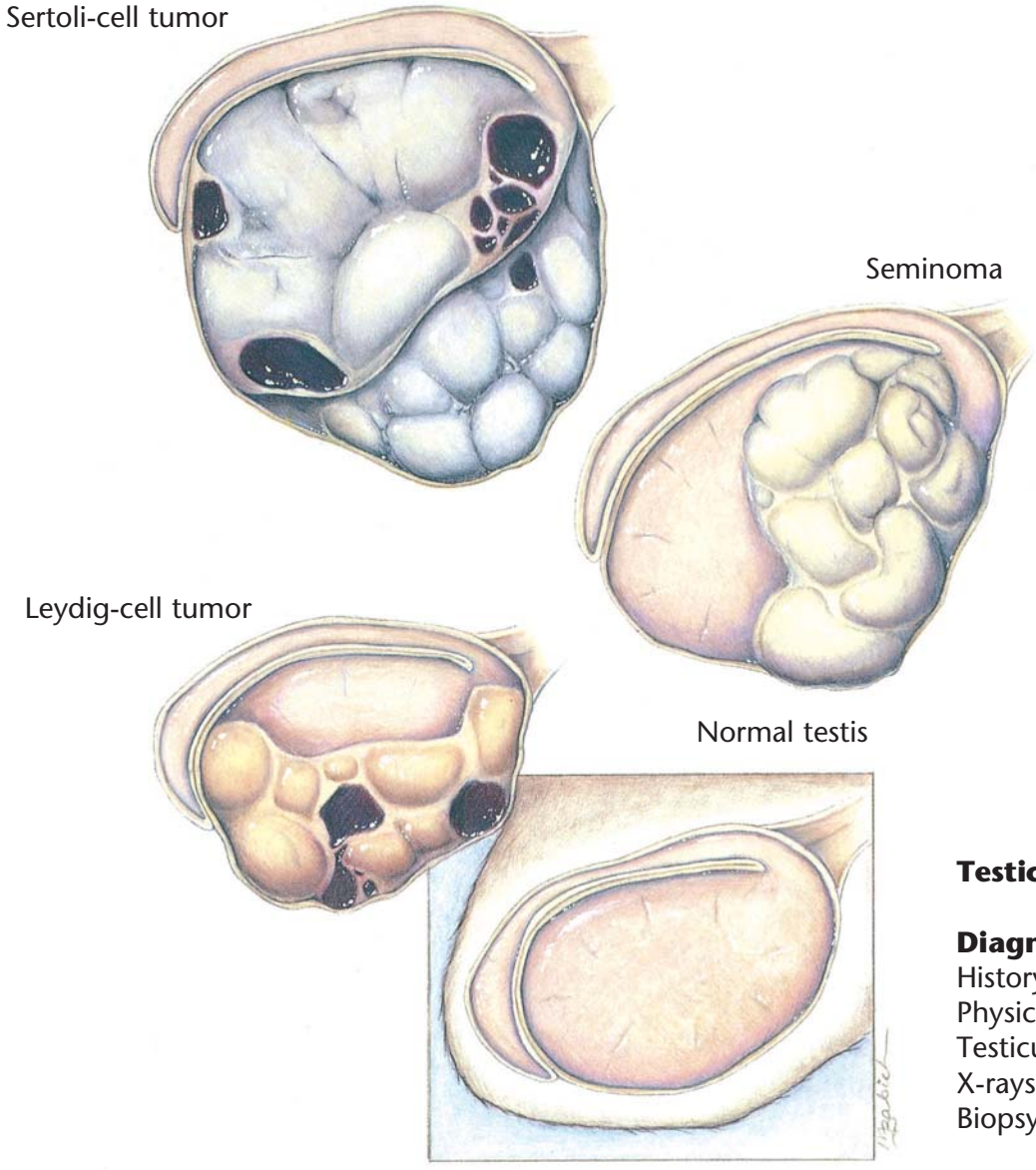


Canine Castration

Indications
Sterilization
Testicular disease
Prostatic disease
Behavioral problems
Retained testicles

Dietary Plan
Postsurgically, a diet adequate for tissue repair

Testicular Tumors



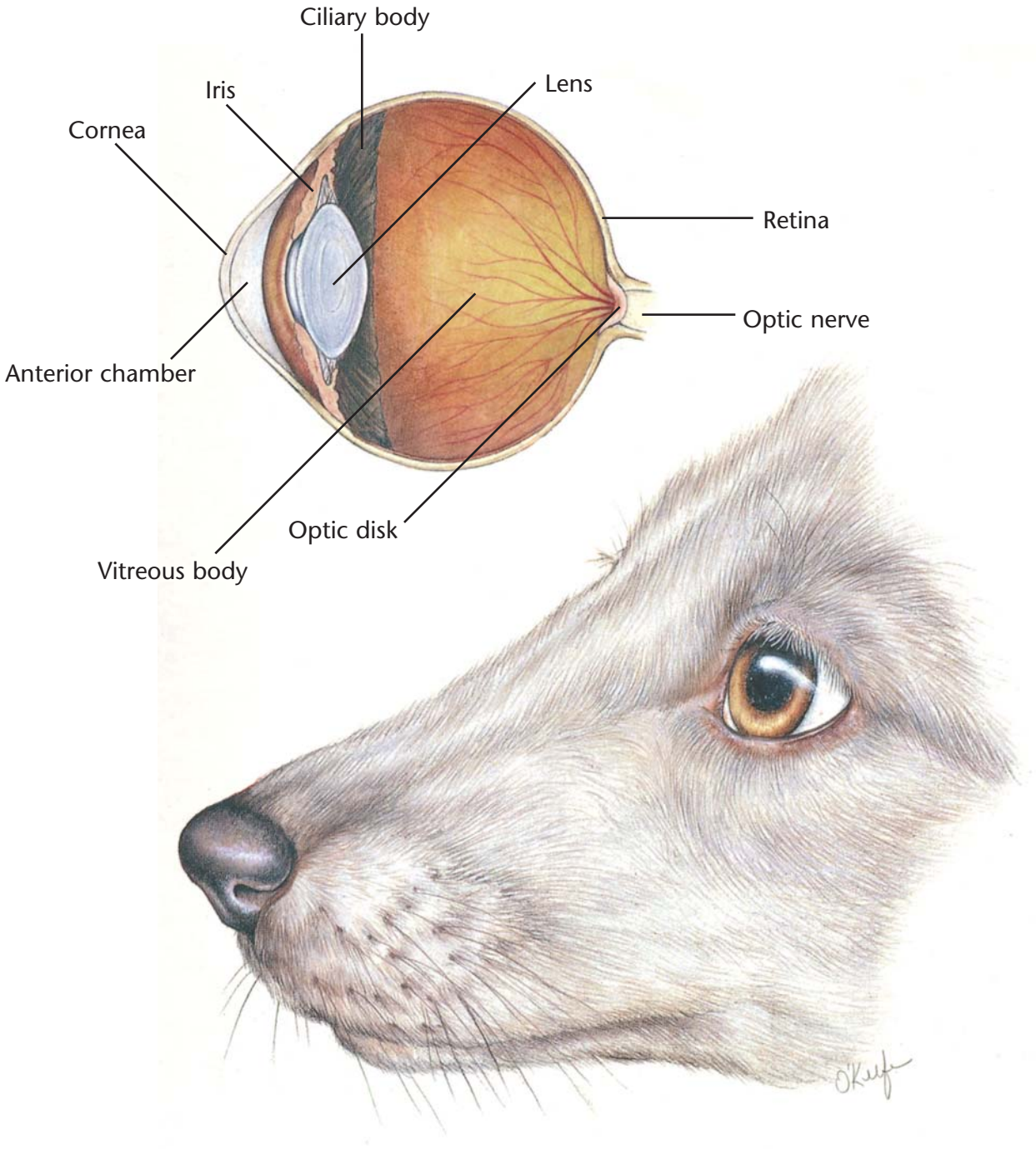
Testicular Tumors

Diagnostic Plan
History
Physical examination
Testicular palpation
X-rays of the abdomen
Biopsy

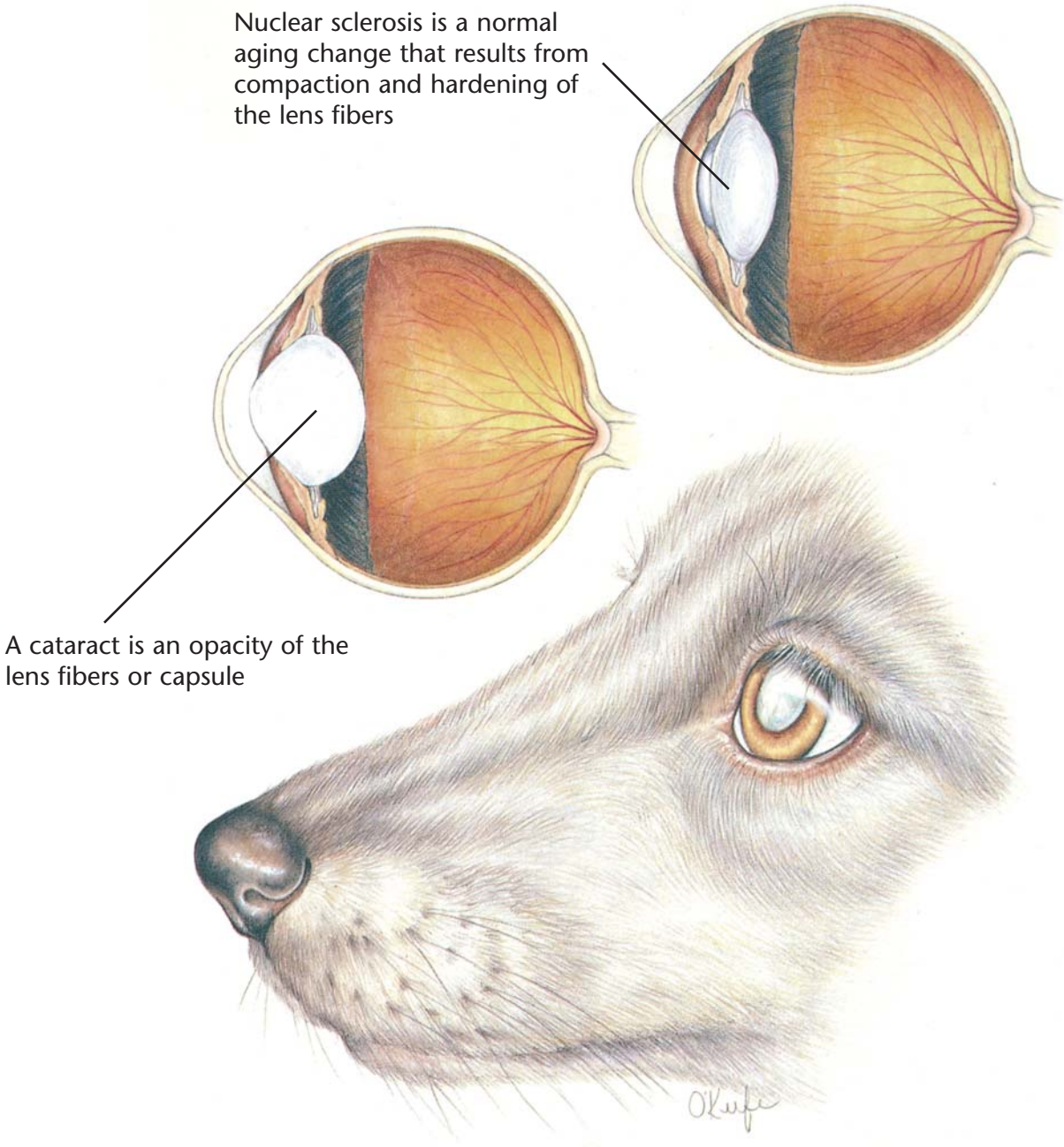
Therapeutic Plan
Surgery
Chemotherapy

Dietary Plan
Postsurgically, a diet adequate for tissue repair
Consider body condition; feed a diet appropriate to maintain ideal body weight

Normal Canine Eye



Nuclear Sclerosis/Cataracts



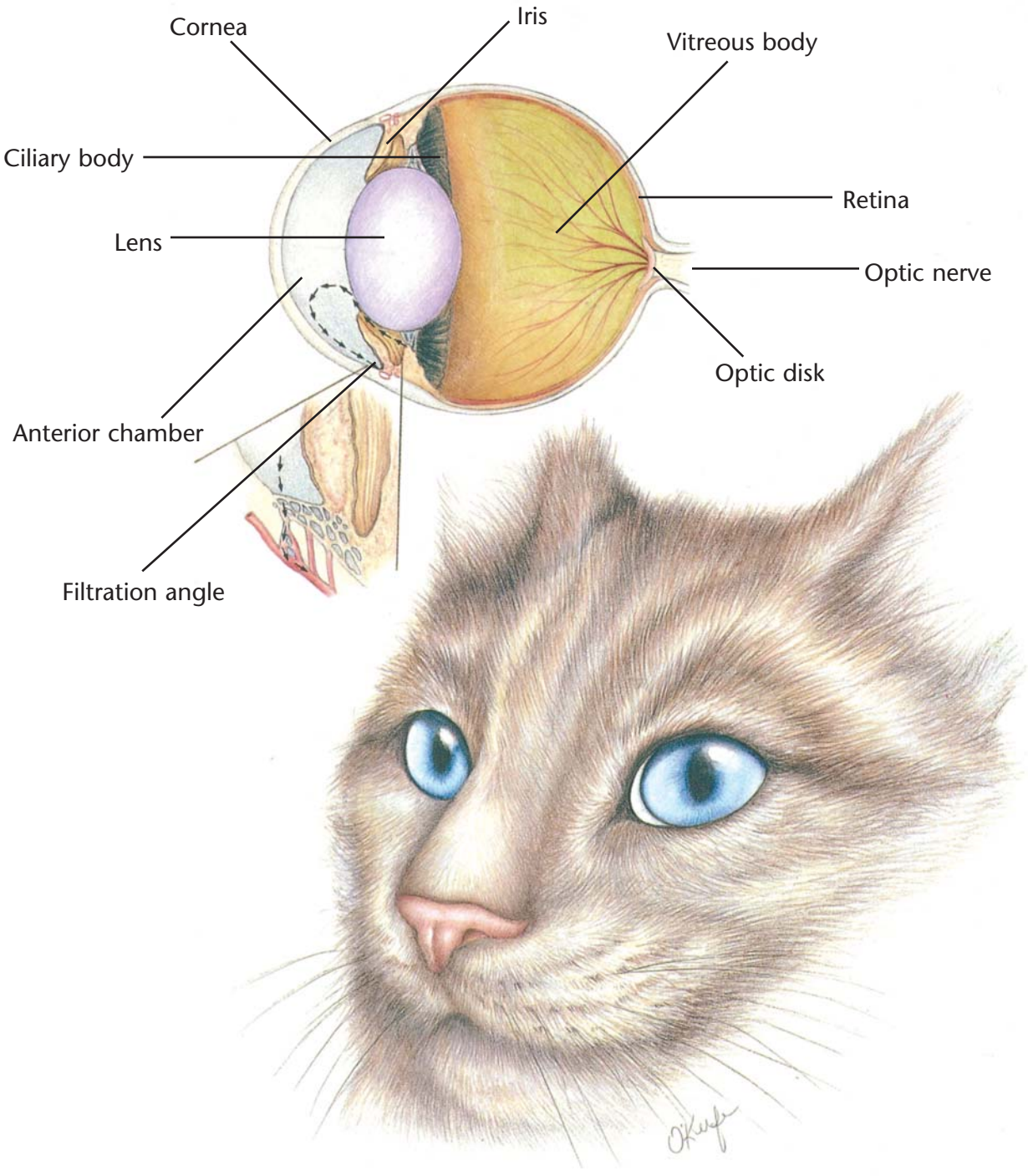
Nuclear Sclerosis/Cataracts

Diagnostic Plan
History
Physical examination
Ophthalmic examination
Blood tests
Urinalysis

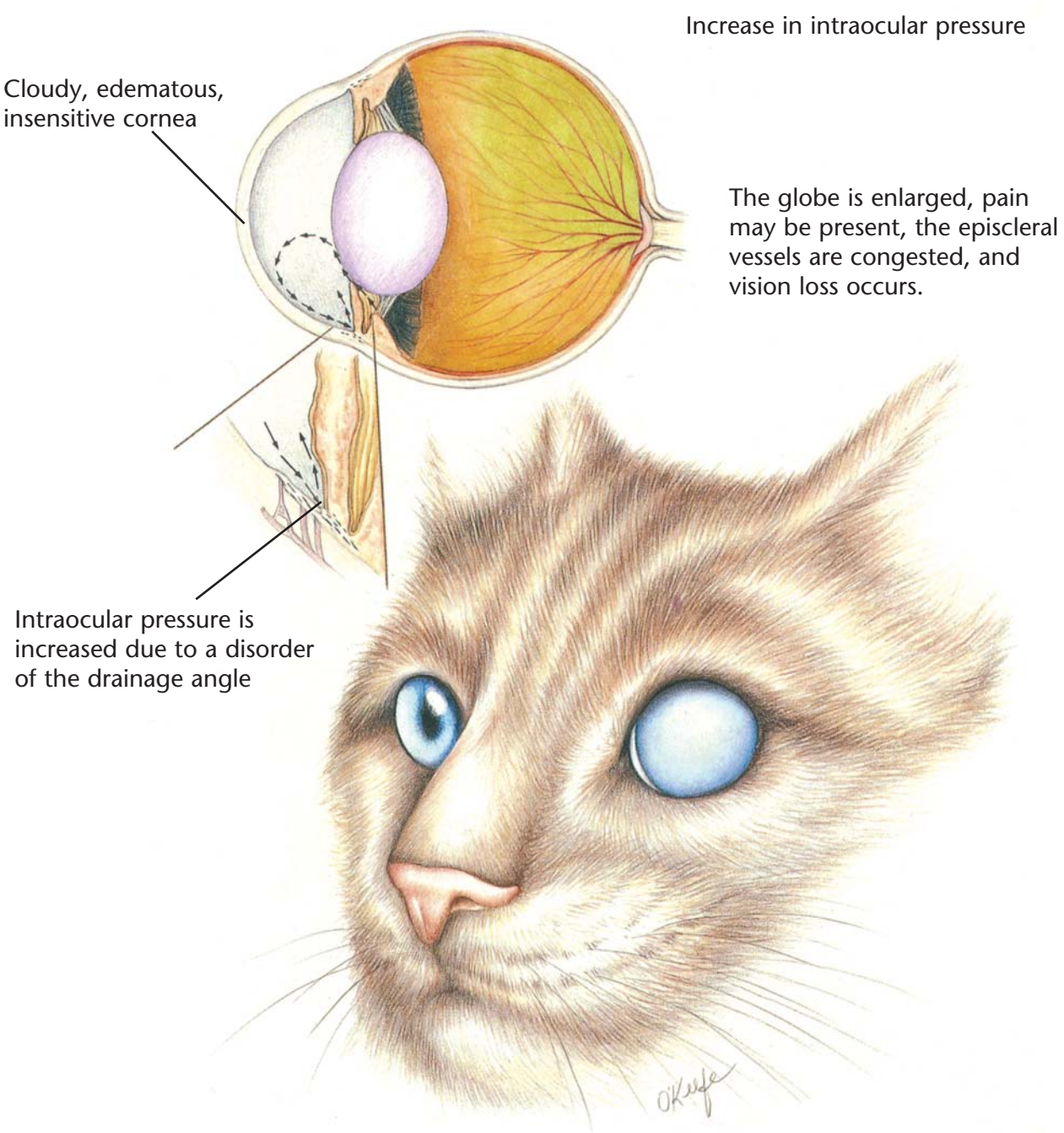
Therapeutic Plan
Surgery
Therapy for any concurrent disease
No therapy is necessary for nuclear sclerosis

Dietary Plan
A diet based on individual patient evaluation including body condition and other organ system involvement or disease

Normal Feline Eye



Glaucoma



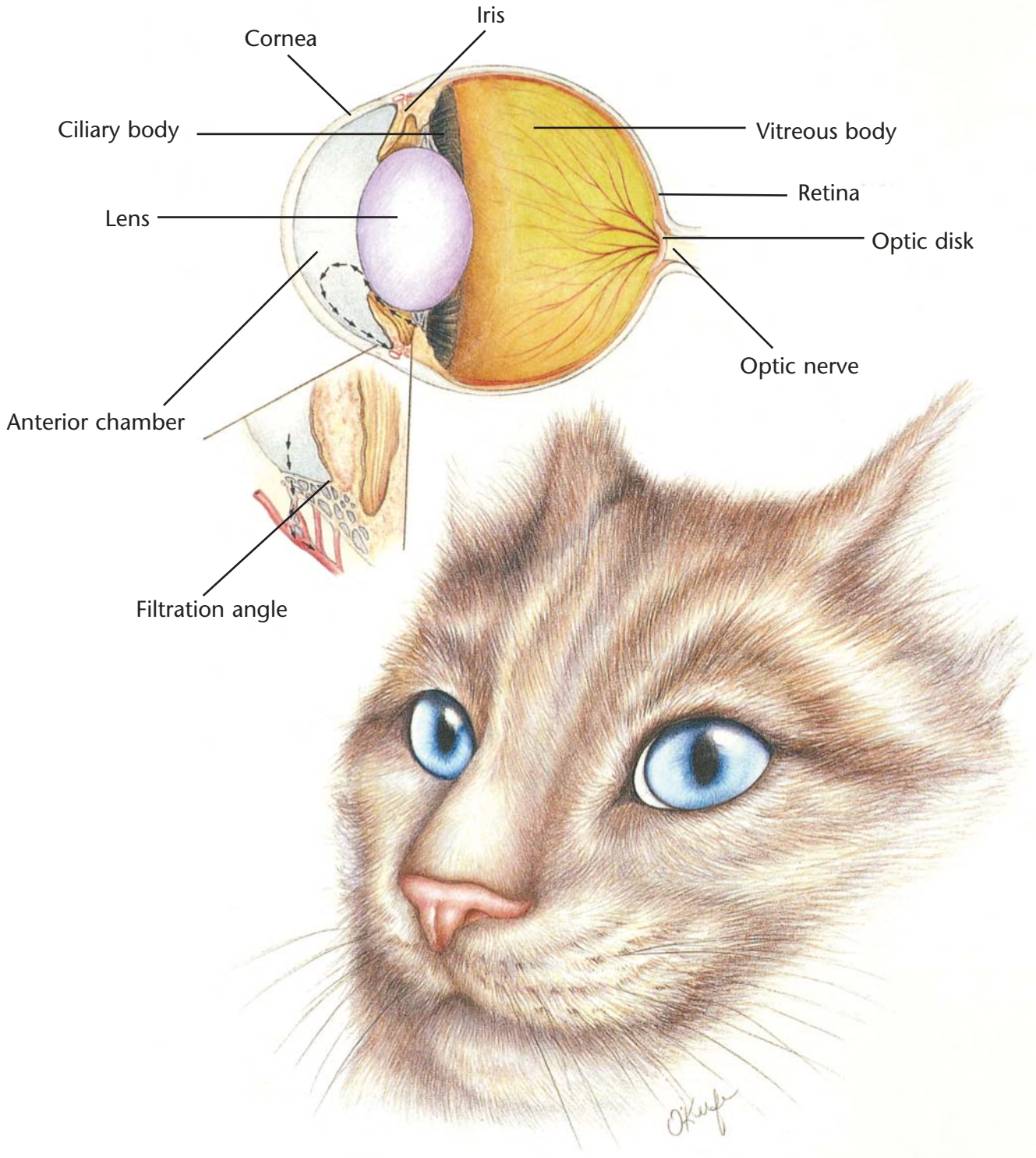
Glaucoma

Diagnostic Plan
History
Physical examination
Ocular examination
Measurement of intraocular pressure

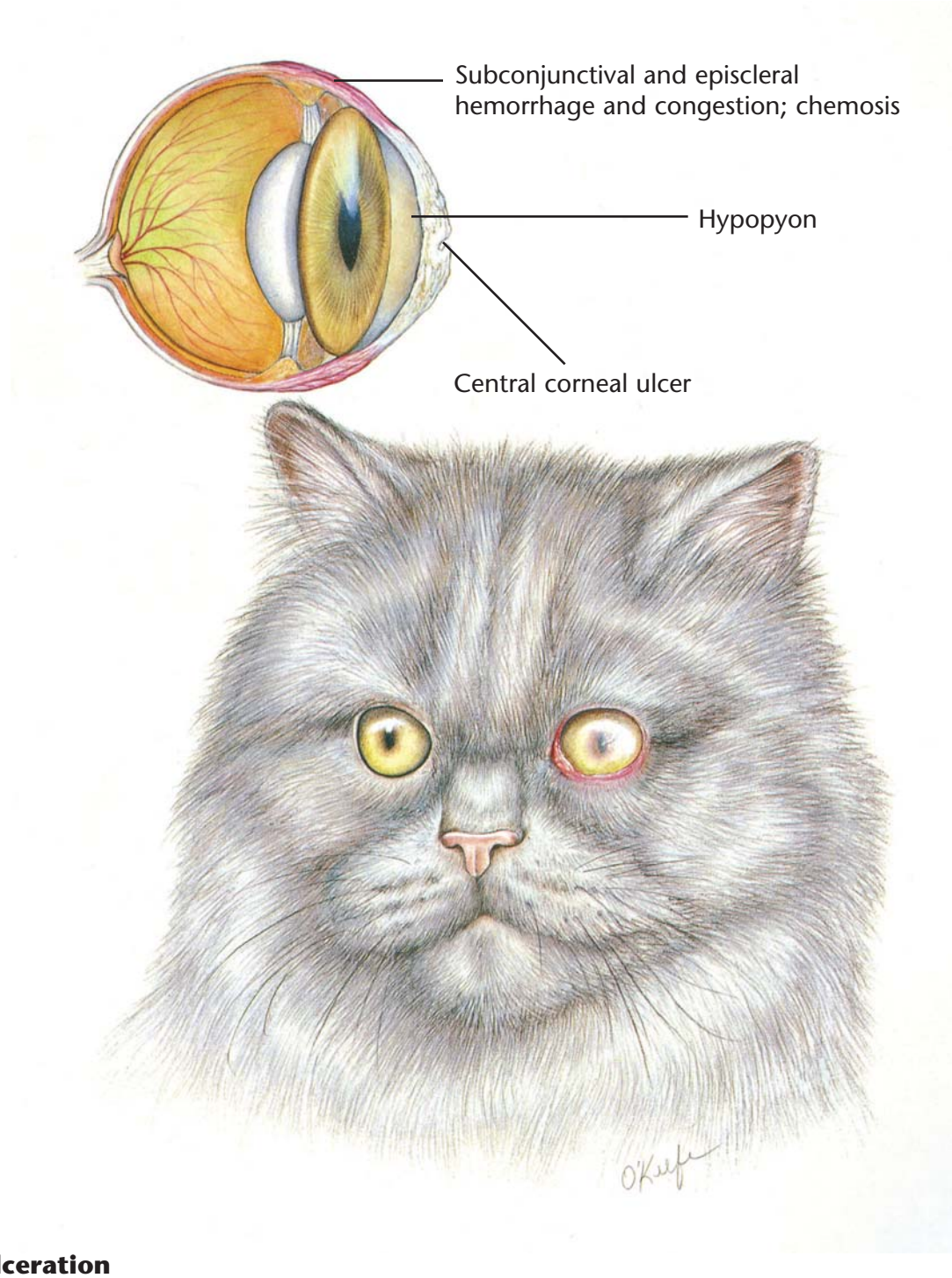
Therapeutic Plan
Drugs that relieve intraocular pressure
Surgery

Dietary Plan
A diet based on individual patient evaluation including body condition and other organ system involvement or disease

Normal Feline Eye



Corneal Ulceration



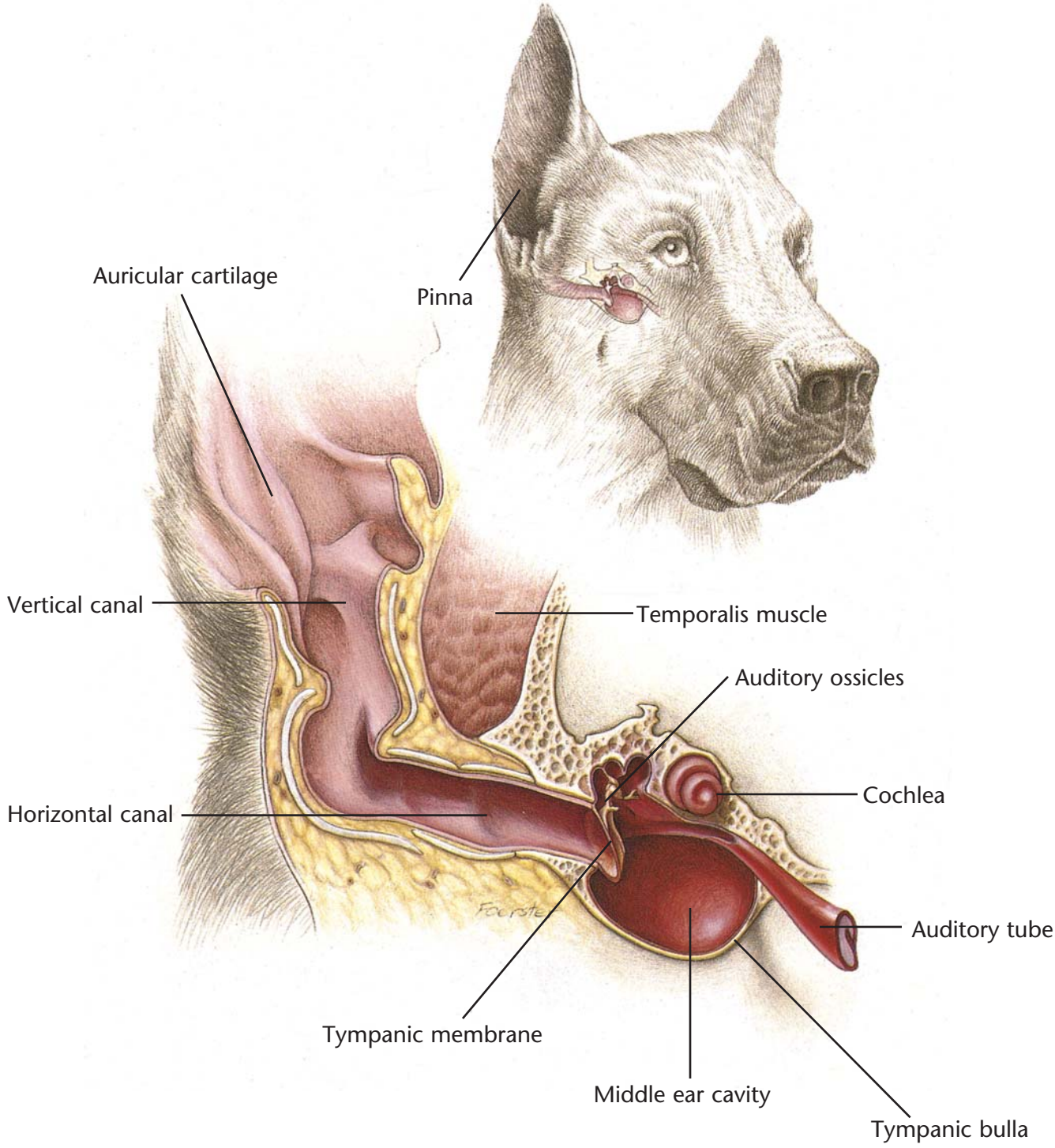
Corneal Ulceration

Diagnostic Plan
History
Physical examination
Ocular examination
Fluorescein stain
Culture
Cytologic examination

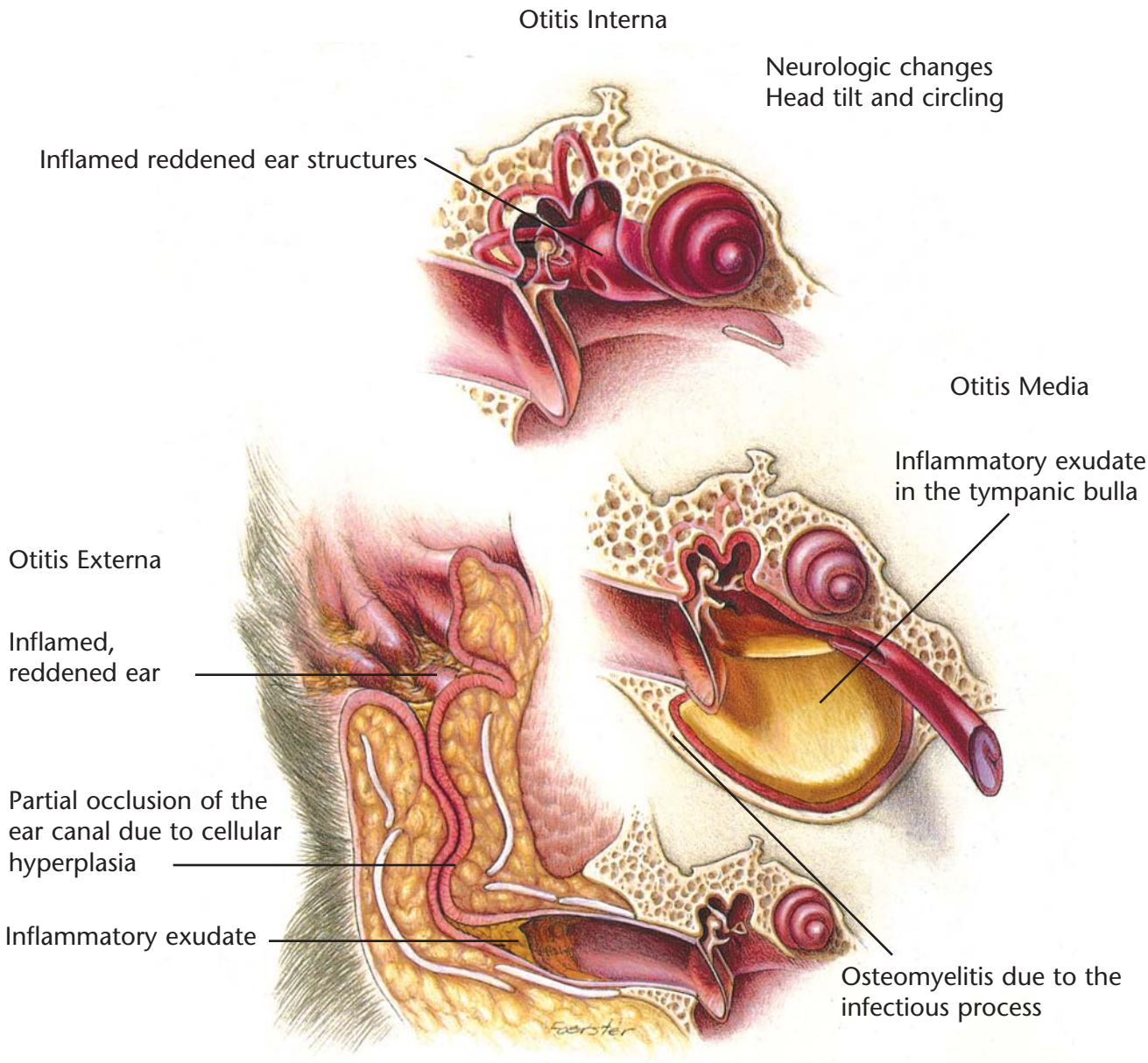
Therapeutic Plan
Antibacterial ointment and solutions
Drugs that dilate the pupil
Surgery
Drugs to lessen the risk of pigment formation in the cornea

Dietary Plan
A diet based on individual patient evaluation including body condition and other organ system involvement or disease

Normal Hearing Apparatus



Otitis Externa, Media, Interna



Otitis Externa, Media, Interna

Diagnostic Plan
History
Physical examination
Ear examination
Ear cultures
Thyroid hormone levels
Intradermal skin testing
X-rays
Therapeutic trials with insecticides and hypoallergenic diets

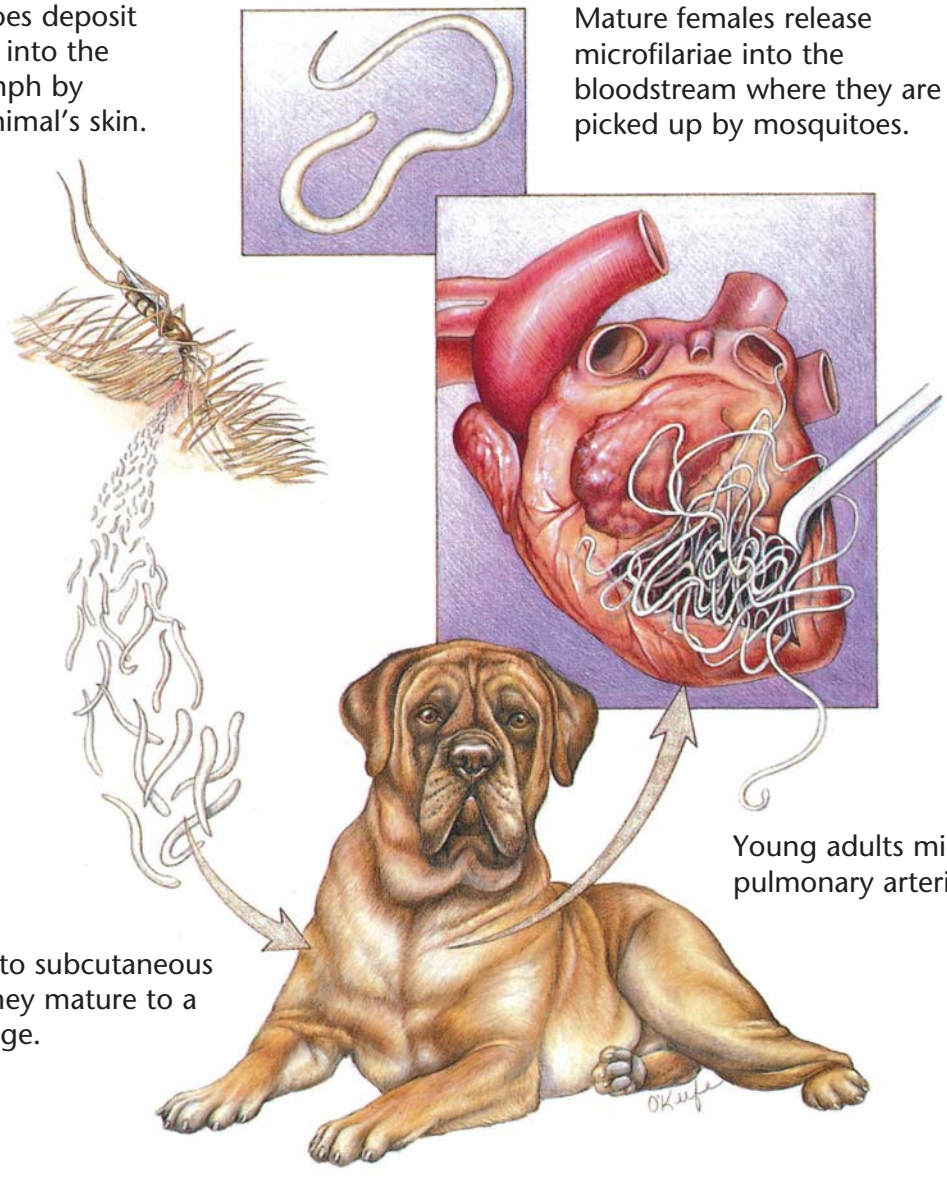
Therapeutic Plan
Removal of ear canal hair
Ear cleaning
Topical application of antibacterials/corticosteroids
Systemic antibacterials
Systemic corticosteroids
Surgery

Dietary Plan
A diet based on individual patient evaluation including body condition and other organ system involvement or disease
Hypoallergenic diets

Heartworms

Infected mosquitoes deposit heartworm larvae into the animal's hemolymph by puncturing the animal's skin.

Mature females release microfilariae into the bloodstream where they are picked up by mosquitoes.



Young adults migrate to the pulmonary arteries and heart.

Larvae migrate to subcutaneous tissues where they mature to a young-adult stage.

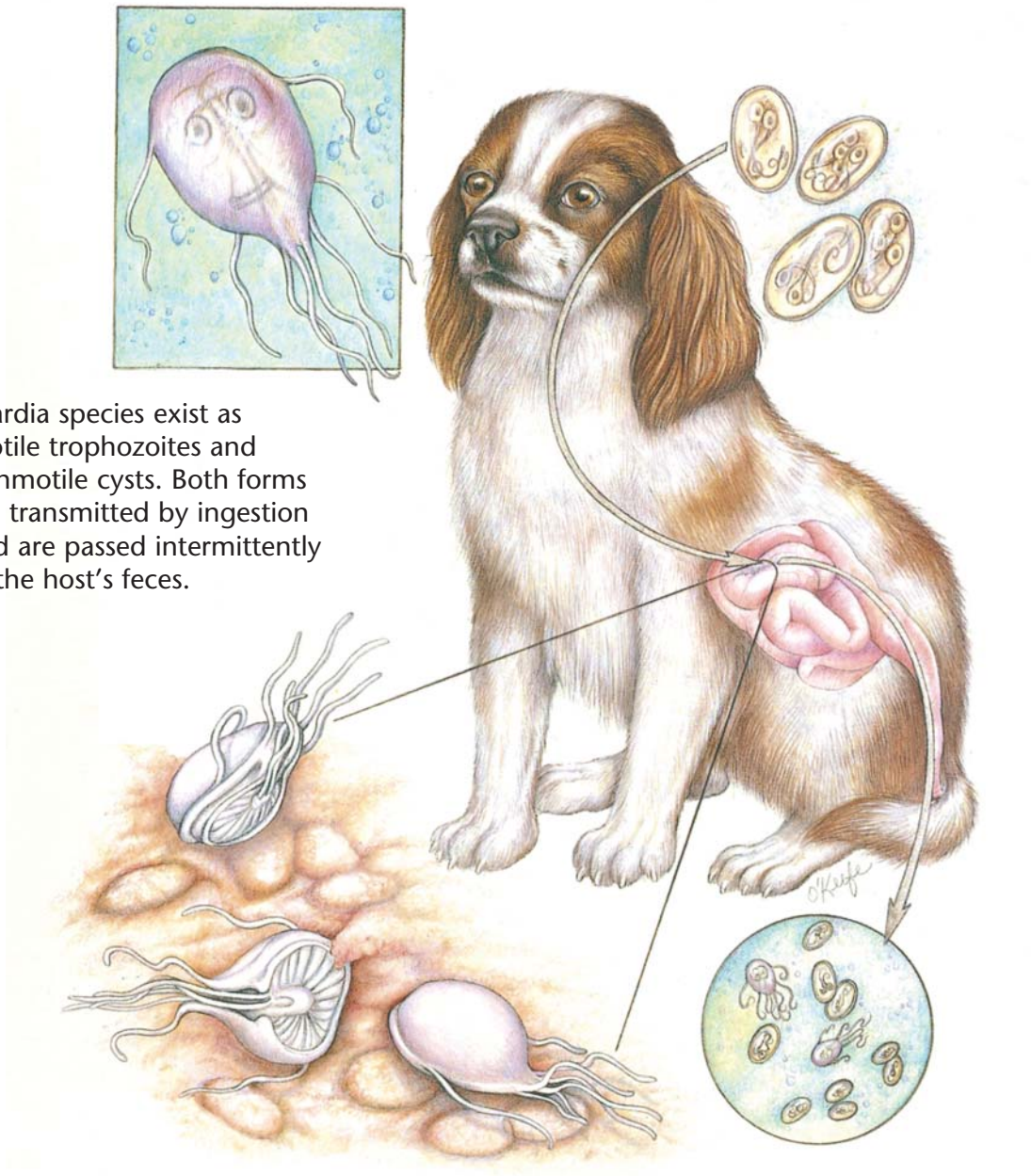
Heartworms

Diagnostic Plan
History
Physical examination
Heartworm check
Chest x-rays
Blood work
Urinalysis

Therapeutic Plan
Drugs to kill adult worms
Aspirin
Corticosteroids
Restricted exercise
Drugs to kill larvae in the bloodstream
Prevention
Surgery

Dietary Plan
A diet with controlled levels of protein, phosphorus, and sodium
Consider body condition

Giardia



Giardia species exist as motile trophozoites and nonmotile cysts. Both forms are transmitted by ingestion and are passed intermittently in the host's feces.

Giardia

Diagnostic Plan

History
Physical examination
Stool analysis
Analysis of intestinal scrapings collected during endoscopy
Blood test (Giardia antigen test)

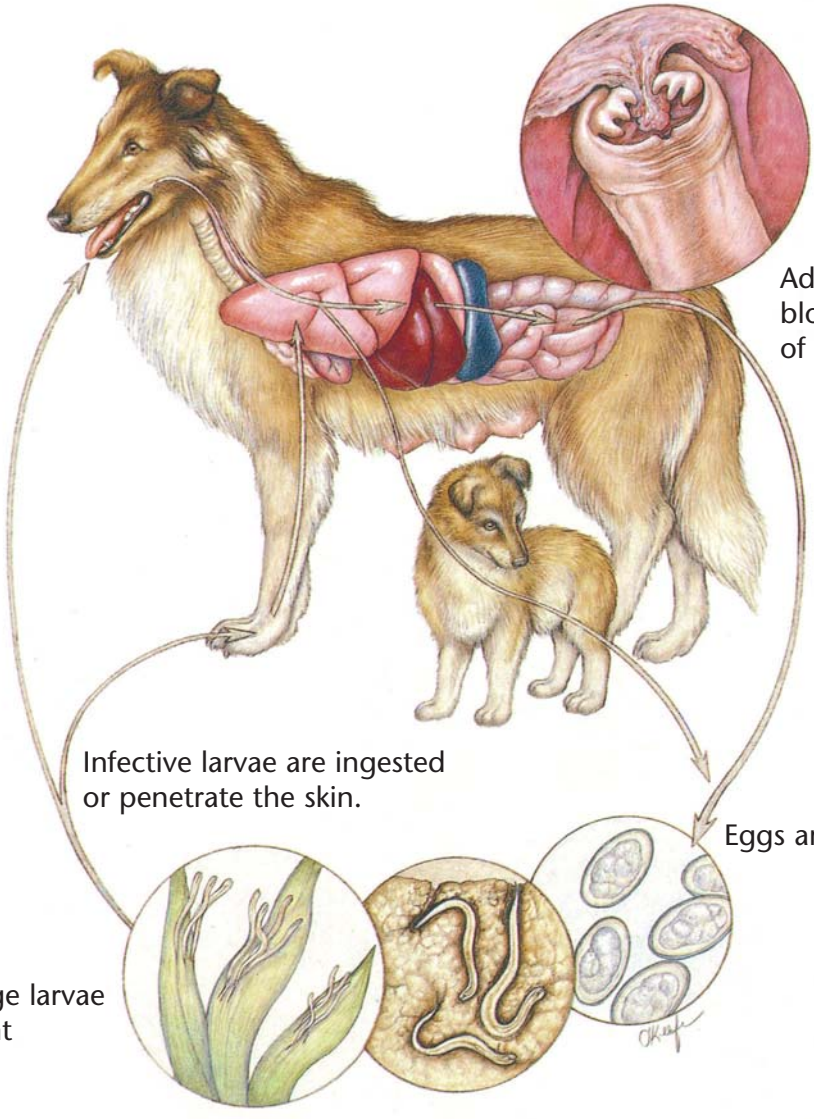
Therapeutic Plan

Drugs to kill the parasite

Dietary Plan

A diet based on individual patient evaluation including body condition and other organ system involvement or disease

Hookworms



Hookworms

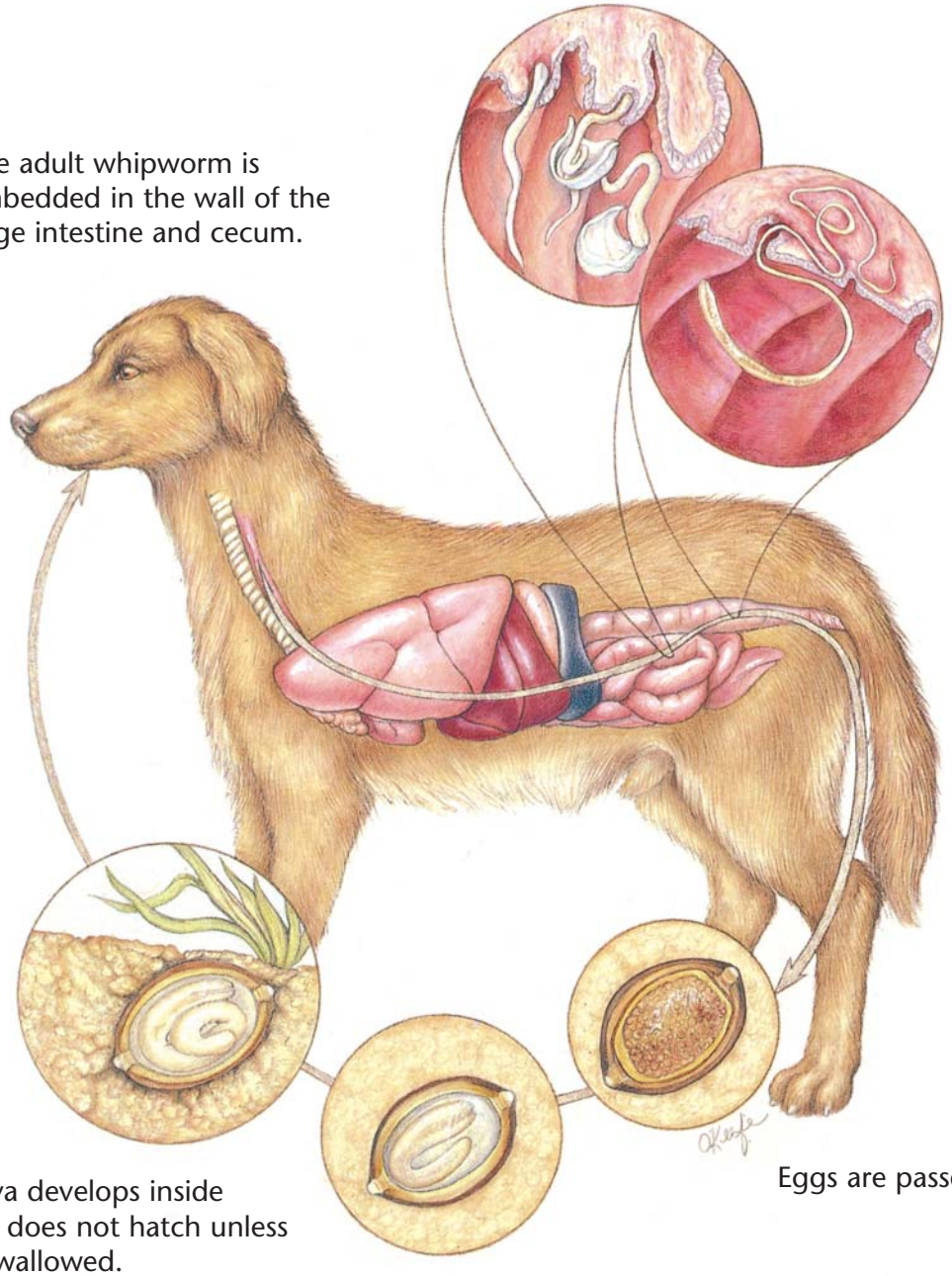
Diagnostic Plan
History
Physical examination
Stool analysis
Blood work

Therapeutic Plan
Dewormers
Blood transfusions
Supportive therapy

Dietary Plan
A diet based on individual patient evaluation including body condition and other organ system involvement or disease

Whipworms

The adult whipworm is embedded in the wall of the large intestine and cecum.



Infected larva develops inside the egg but does not hatch unless the egg is swallowed.

Eggs are passed in the feces.

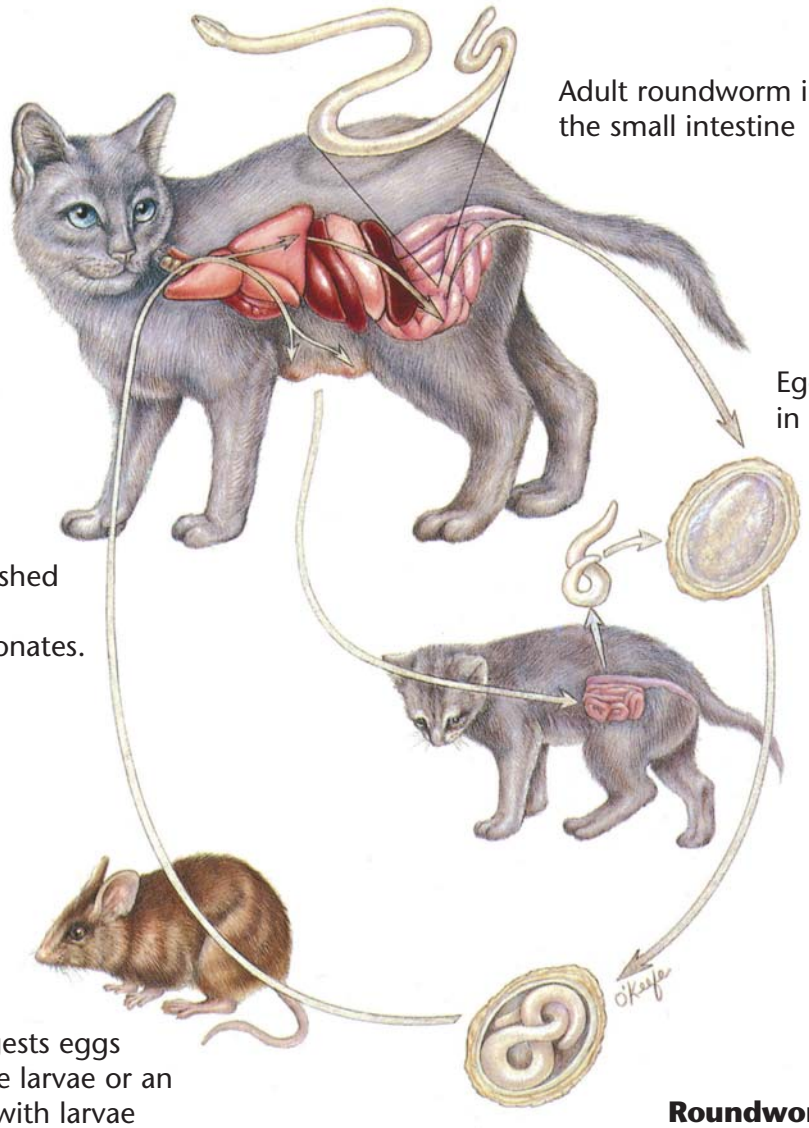
Whipworms

Diagnostic Plan
History
Physical examination
Stool analysis
Colonoscopy
Therapeutic deworming

Therapeutic Plan
Dewormers
Supportive therapy

Dietary Plan
A diet based on individual patient evaluation including body condition and other organ system involvement or disease

Roundworms



Roundworms

Diagnostic Plan
History
Physical examination
Stool analysis

Therapeutic Plan
Dewormers
Supportive therapy

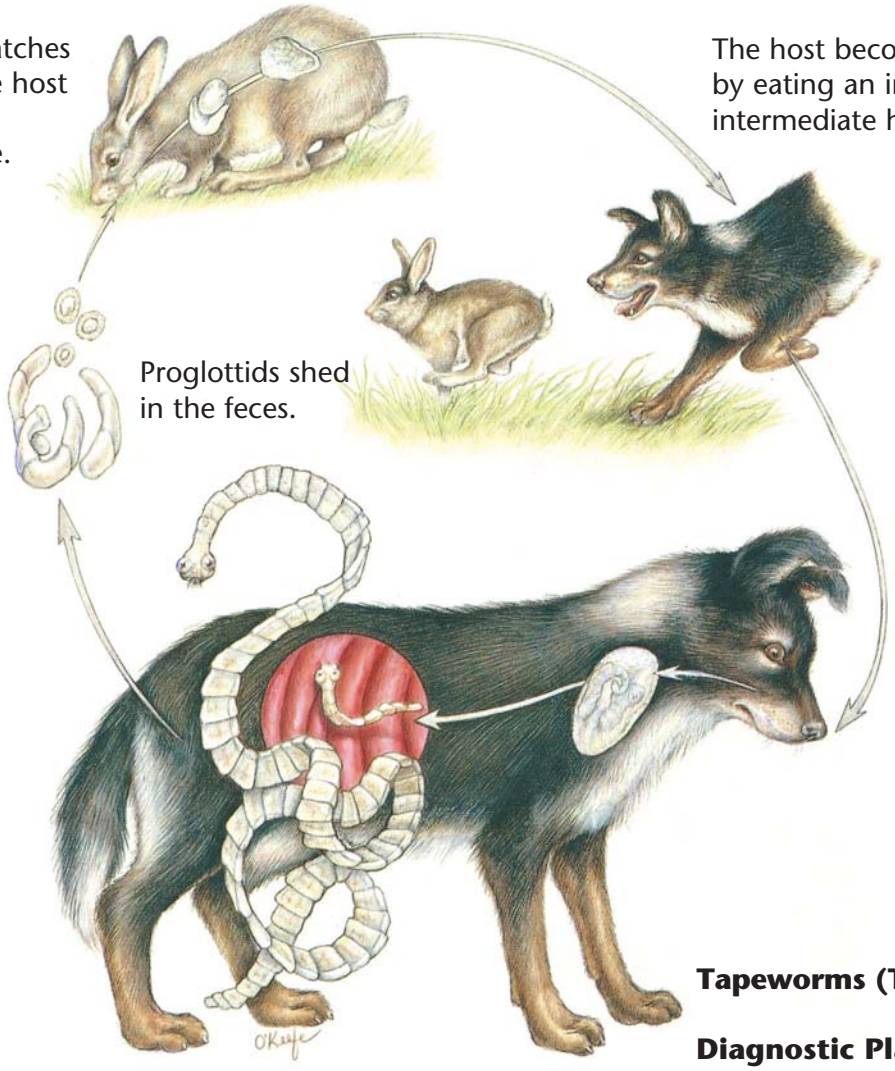
Dietary Plan
A diet based on individual patient evaluation including body condition and other organ system involvement or disease

Tapeworms *(Taenia)*

The oncosphere hatches in the intermediate host and differentiates into a metacestode.

The host becomes infected by eating an infected intermediate host.

Proglottids shed in the feces.



Adult tapeworm in the small intestine

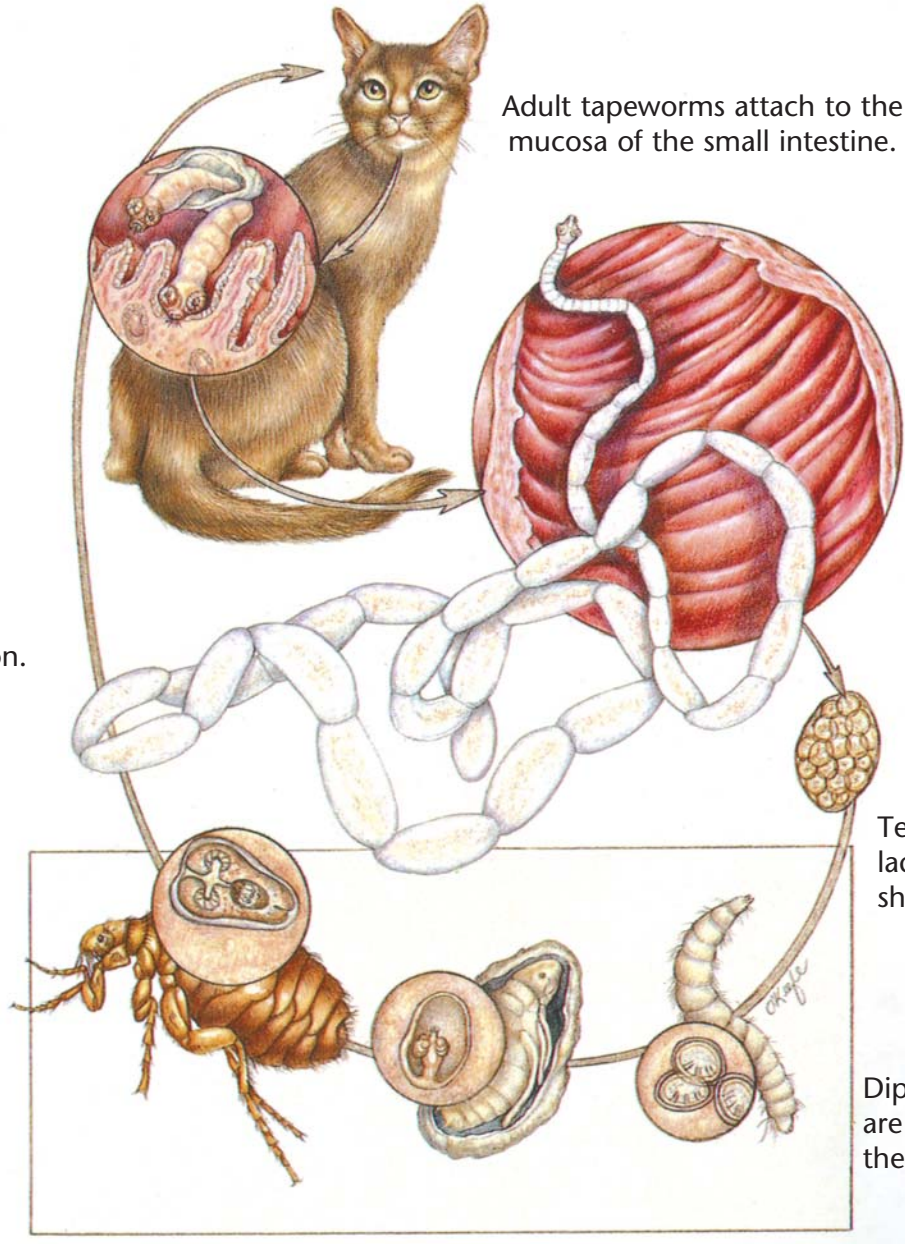
Tapeworms (Taenia)

Diagnostic Plan
History
Physical examination
Detection of tapeworm segments in the stool

Therapeutic Plan
Dewormers
Control of patient's hunting and eating habits

Dietary Plan
A diet based on individual patient evaluation including body condition and other organ system involvement or disease

Tapeworms (Dipylidium caninum)



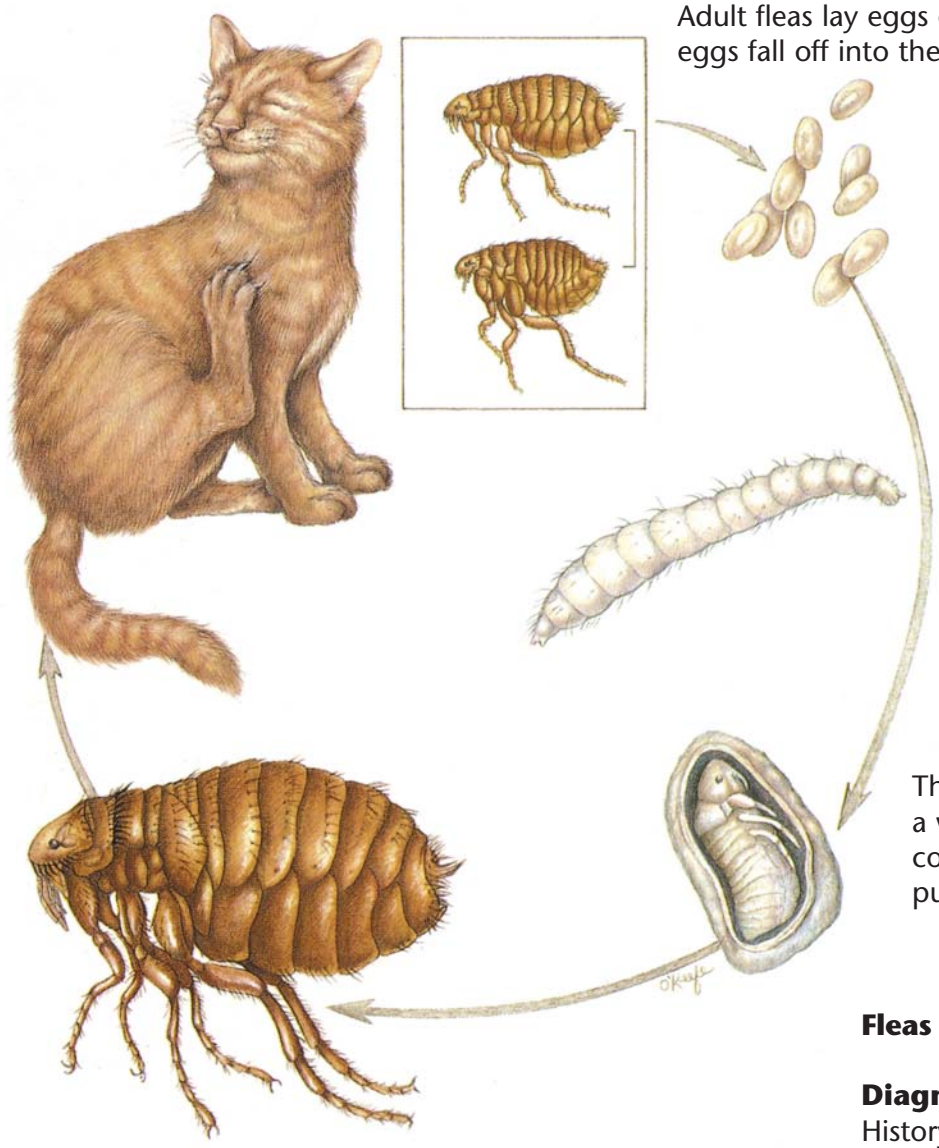
Tapeworms (Dipylidium caninum)

Diagnostic Plan
History
Physical examination
Detection of tapeworm segments in the stool
Detection of fleas or flea dirt

Therapeutic Plan
Dewormers
Flea control

Dietary Plan
A diet based on individual patient evaluation including body condition and other organ system involvement or disease

Fleas



Adult fleas lay eggs on pet then eggs fall off into the environment.

Eggs hatch into larvae that molt three times.

The third molt produces a white larva that spins a cocoon in which the larva pupates for up to one year.

The adult flea emerges from the cocoon and seeks a host on which to feed.

Fleas

Diagnostic Plan
History
Physical examination
Stool inspection for tapeworm segments

Therapeutic Plan
Flea control

Dietary Plan
A diet based on individual patient evaluation including body condition and other organ system involvement or disease

Ticks

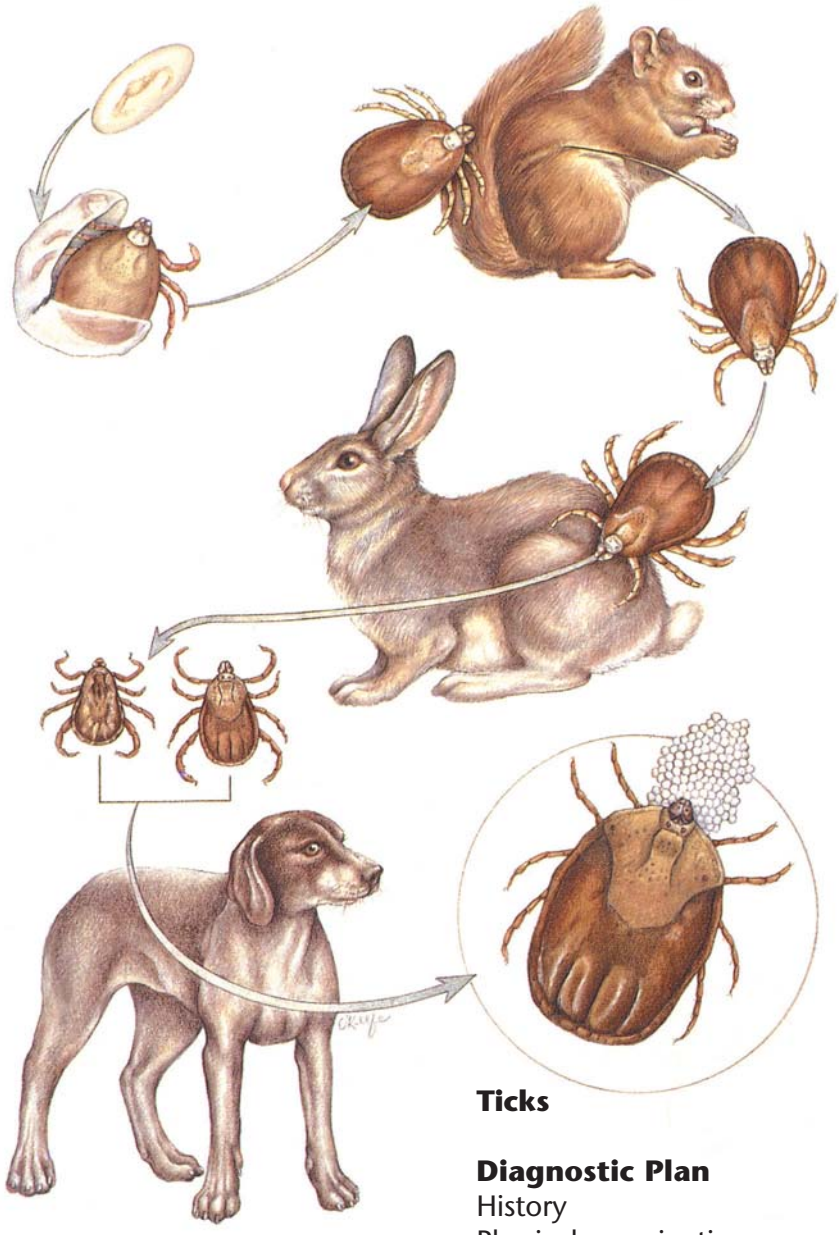
Adult ticks lay thousands of eggs, which undergo two molts: larva to nymph and nymph to adult.

Larvae, nymphs, and adults feed on blood and lymph.

Dermacentor variabilis larvae and nymphs feed on small mammals and drop off between molts.

Adults feed on pets.

Rhipicephalus sanguineus larvae, nymphs, and adults all feed on pets.



Ticks

Diagnostic Plan
History
Physical examination

Therapeutic Plan
Tick removal
Insecticide baths or dips
Topical insecticide dips or baths

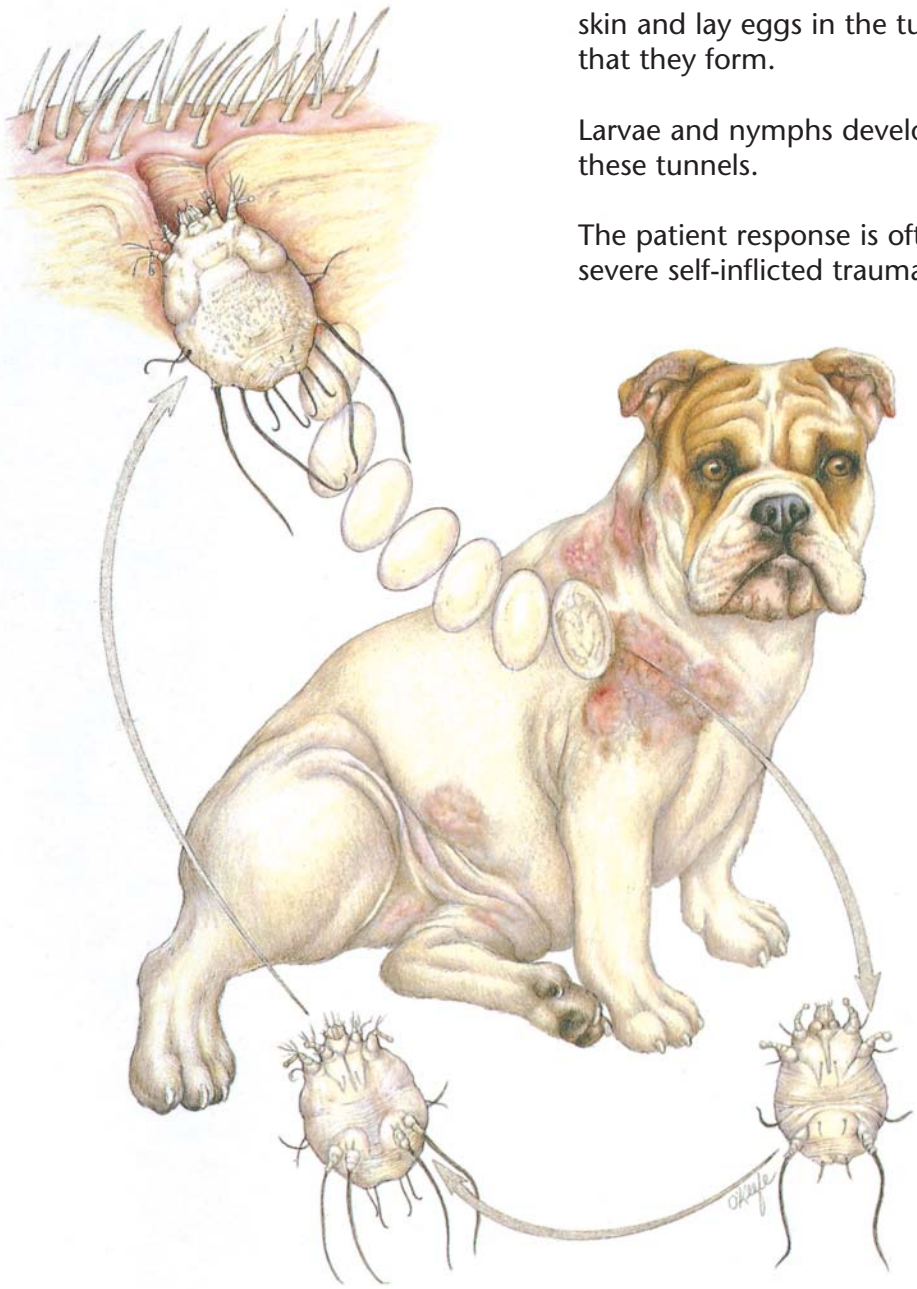
Dietary Plan
A diet based on individual patient evaluation including body condition and other organ system involvement or disease

Sarcoptes

Female mites burrow into the skin and lay eggs in the tunnels that they form.

Larvae and nymphs develop in these tunnels.

The patient response is often severe self-inflicted trauma.



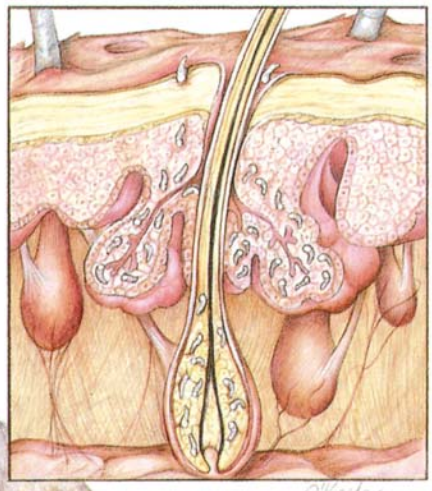
Sarcoptes

Diagnostic Plan
History
Physical examination
Skin scrapings
Skin biopsy
Therapeutic trial

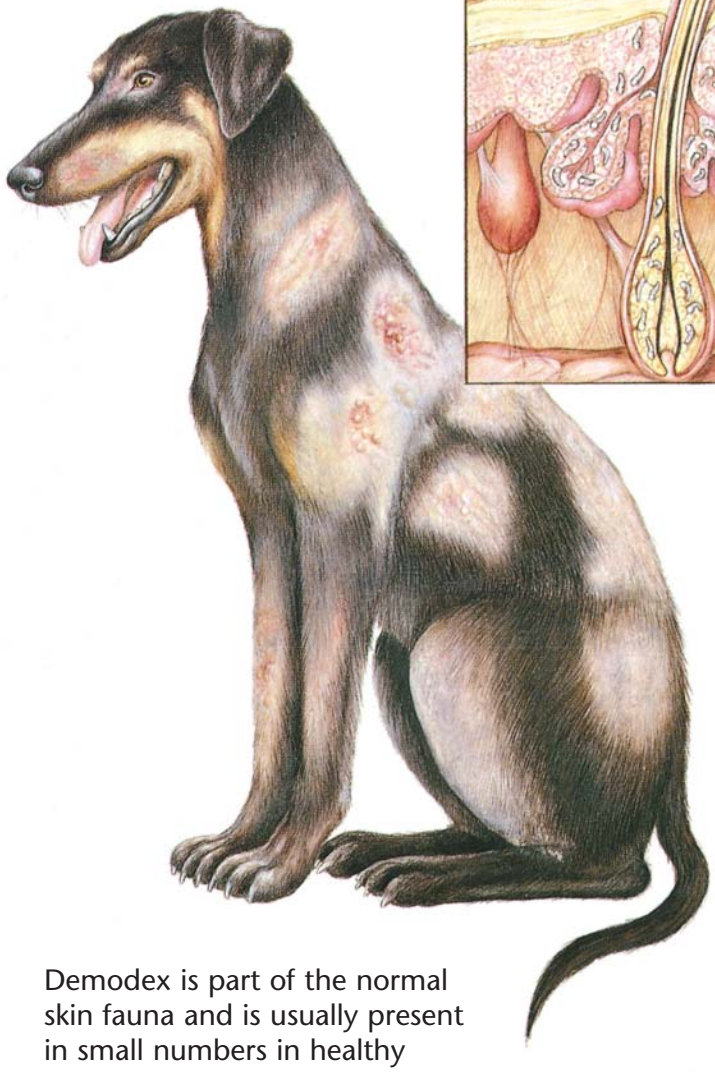
Therapeutic Plan
Coat clipping
Parasiticidal dips
Antibacterials

Dietary Plan
A diet based on individual patient evaluation including body condition and other organ system involvement or disease

Demodex



The entire life cycle is spent on the host in the hair follicles or sebaceous glands.



Demodex is part of the normal skin fauna and is usually present in small numbers in healthy animals.

Adult Demodex mite

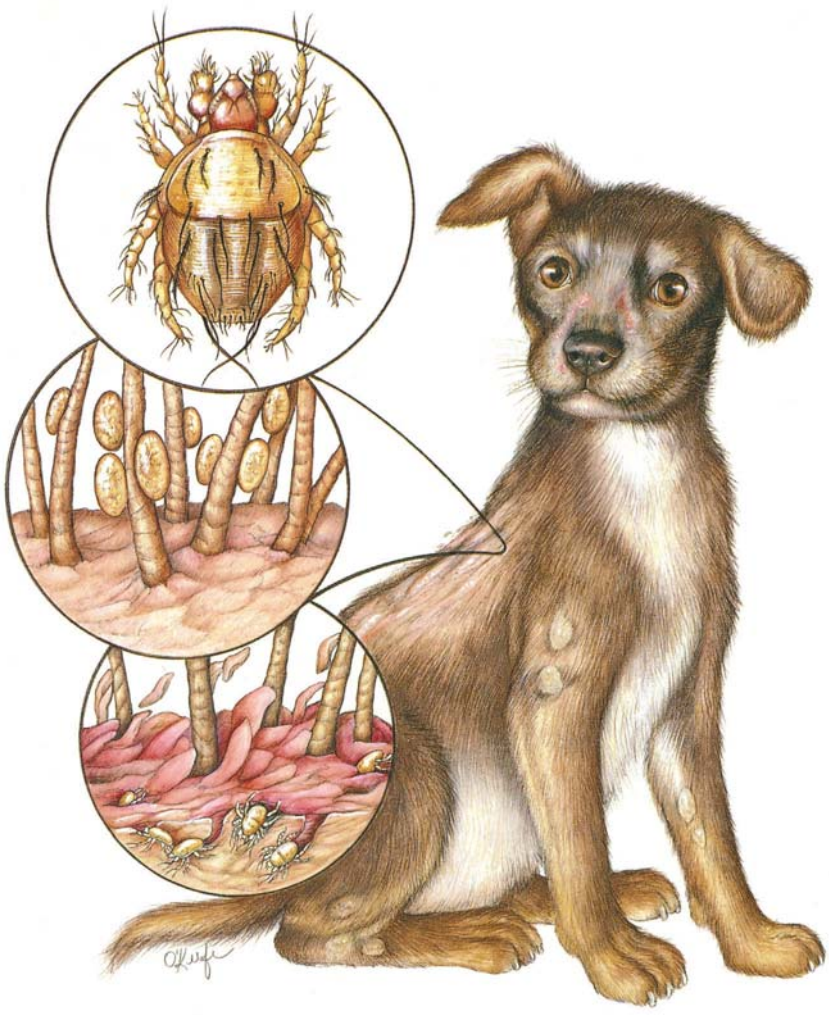
Demodex

Diagnostic Plan
History
Physical examination
Skin scrapings
Skin biopsy
Skin culture

Therapeutic Plan
Topical keratolytic agents
Antibacterials
Topical drugs to kill the mite

Dietary Plan
A diet adequate for tissue repair
A diet based on individual patient evaluation including body condition and other organ system involvement or disease
Medication to kill the mite

Cheyletiella



These mites live in keratin on the skin's surface and feed on tissue fluids.

The entire life cycle is thought to occur on the host.

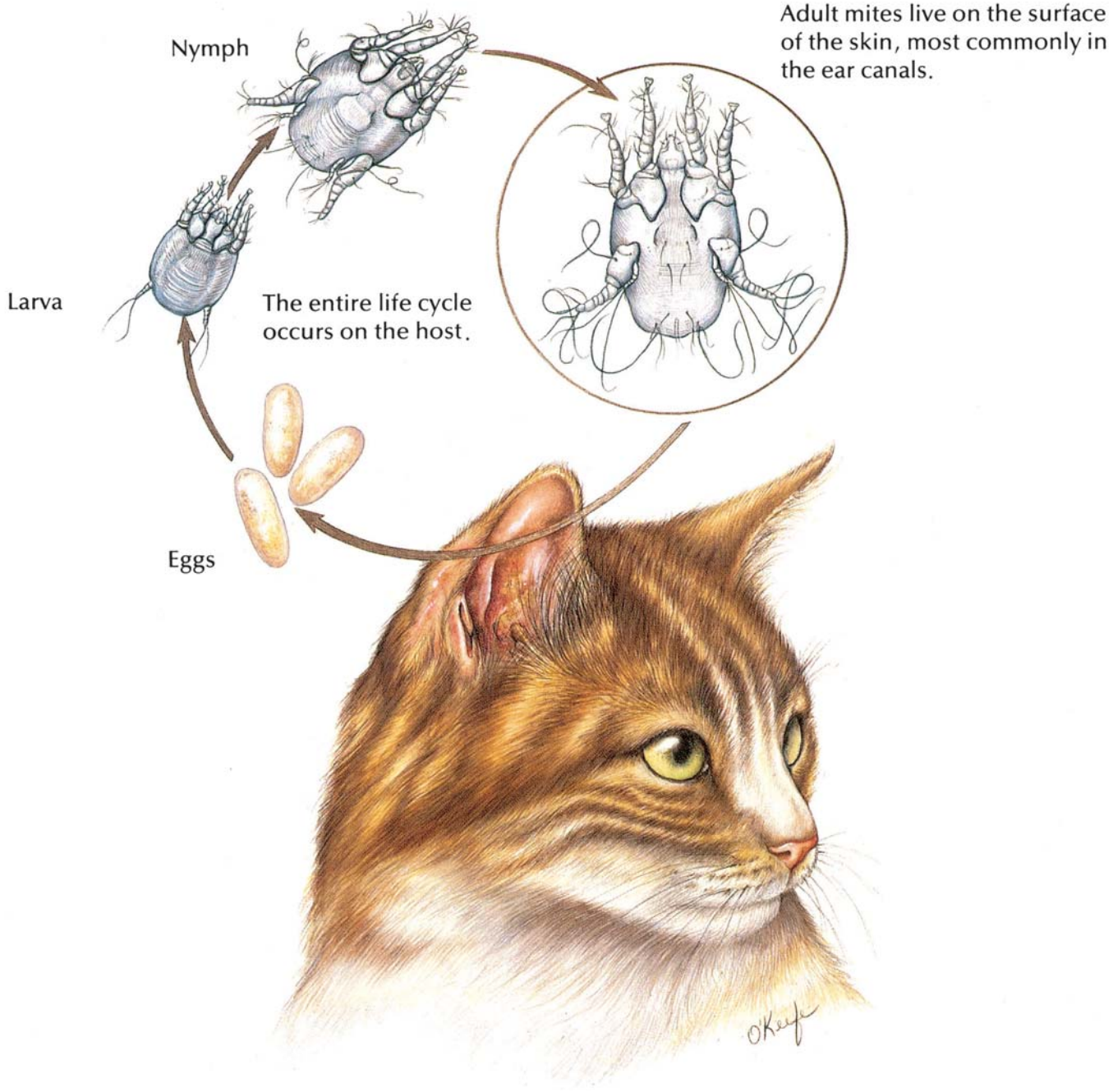
Cheyletiella

Diagnostic Plan
History
Physical examination
Skin scrapings
Skin biopsy
Acetate tape impressions
Direct visualization of the parasite

Therapeutic Plan
Parasiticidal dips

Dietary Plan
A diet based on individual patient evaluation including body condition and other organ system involvement or disease

Ear Mites



Ear Mites

Diagnostic Plan
History
Physical examination
Ear examination
Microscopic examination of ear canal exudate

Therapeutic Plan
Ear canal cleaning
Drugs to kill the mites
Surgical repair of aural hematomas
Antibacterials, if needed

Dietary Plan
A diet adequate for tissue repair
A diet based on individual patient evaluation including body condition and other organ system involvement or disease

Bibliography

1. Evans, H.E.; Christensen, G.C.: *Miller's Anatomy of the Dog*, 2nd Ed. W.B. Saunders, Philadelpia, Pa., 1979.
2. Fox, P.R. (ed.): *Canine and Feline Cardiology*. Churchill Livingstone, New York, N.Y., 1988.
3. Georgi, J.R.: *Parasitology for Veterinarians*, 4th Ed. W.B. Saunders, Philadelphia, Pa., 1985.
4. Harvey, C.E.: *Veterinary Dentistry*. W.B. Saunders, Philadelphia, Pa., 1985.
5. Holzworth, J. (ed.): *Diseases of the Cat: Medicine & Surgery*. W.B. Saunders, Philadelphia, Pa., 1987.
6. Jones, B.D. (ed.): *Canine and Feline Gastroenterology*. W.B. Saunders, Philadelphia, Pa., 1986.
7. *Key to Dietary Management With Prescription Diet® Products*. Hill's Pet Products, Topeka, Kan.
8. Kirk, R.W.; Bistner, S.I.: *Veterinary Procedures & Emergency Treatment*, 4th Ed. W.B. Saunders, Philadelphia, Pa., 1985.
9. Kirk, R.W. (ed.): *Current Veterinary Therapy IX: Small Animal Practice*. W.B. Saunders, Philadelphia, Pa., 1986.
10. Lewis, L.D. et al: *Small Animal Clinical Nutrition III*. Mark Morris Associates, Topeka, Kan., 1987.
11. Magrane, W.G.: *Canine Ophthalmology*, 3rd Ed. Lea & Febiger, Philadelphia, Pa., 1977.
12. *Managing Canine and Feline Urolithiasis*. Veterinary Medicine Publishing, Lenexa, Kan., 1989.
13. *Managing Fiber-Responsive Diseases*. Veterinary Medicine Publishing, Lenexa, Kan., 1988.
14. Morgan, R.V. (ed.): *Handbook of Small Animal Practice*. Churchill Livingstone, New York, N.Y., 1987.
15. Muller, G.H.; Kirk, R.W.: *Small Animal Dermatology*, 2nd Ed. W.B. Saunders, Philadelphia, Pa., 1976.
16. *Proc. 5th Ann. Vet. Med. Forum*, ACVIM. San Diego, Calif., 1987.
17. *Proc. 6th Ann. Vet. Med. Forum*, ACVIM. Washington, D.C., 1988.
18. *Proc. 7th Ann. Vet. Med. Forum*, ACVIM. San Diego, Calif., 1989.
19. Rawlings, C.A.: *Heartworm Disease in Dogs and Cats*. W.B. Saunders, Philadelphia, Pa., 1986.
20. *Scientific Proceedings*, 56th Ann. Mtg., AAHA, St. Louis, Mo., 1989.
21. Sherding, R.G. (ed.): *Medical Emergencies*. Churchill Livingstone, New York, N.Y., 1985.
22. Sherding, R.G. (ed.): *The Cat: Diseases and Clinical Management*. Churchill Livingstone, New York, N.Y., 1989.
23. Slatter, D.H. (ed.): *Textbook of Small Animal Surgery*. W.B. Saunders, Philadelphia, Pa., 1985.
24. Soulsby, E.J.L.: *Helminths, Arthropods and Protozoa of Domesticated Animals*, 7th Ed. Lea & Febiger, Philadelphia, Pa., 1982.