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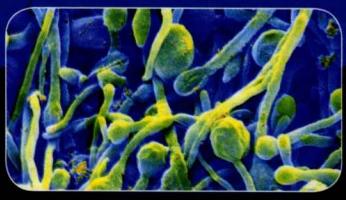

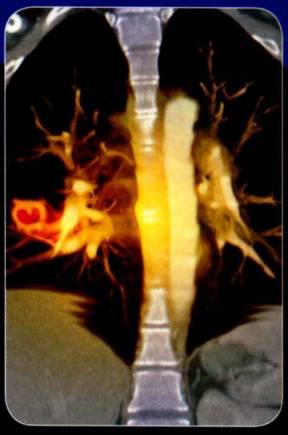

MEDICINE

fourth edition

LAWRENCE M. TIERNEY, Jr.
SANJAY SAINT
MARY A. WHOOLEY

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CURRENT ESSENTIALS *of* MEDICINE

Fourth Edition

Edited by

Lawrence M. Tierney, Jr., MD
Professor of Medicine
University of California, San Francisco
Associate Chief of Medical Services
Veterans Affairs Medical Center
San Francisco, California

Sanjay Saint, MD, MPH
Associate Chief of Medicine, Ann Arbor VA Medical Center
Director, VA/UM Patient Safety Enhancement Program
Professor of Internal Medicine, University of Michigan Medical School
Ann Arbor, Michigan

Mary A. Whooley, MD
Professor of Medicine, Epidemiology and Biostatistics
University of California, San Francisco
Department of Veterans Affairs Medical Center
San Francisco, California

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To Katherine Tierney: a sister whose absolute commitment to her parents at the end of their lives provides a model for anyone fortunate enough to know her.

Lawrence M. Tierney, Jr.

To my father, Prem Saint, and father-in-law, James McCarthy, whose commitment to education will inspire generations.

Sanjay Saint

In memory of my mother, Mary Aquinas Whooley (1940–2003).

Mary A. Whooley

Contributors

Timir Baman, MD
Cardiolology Fellow, University of Michigan Medical School, Ann Arbor, Michigan
Cardiovascular Diseases

Alex Benson, MD
Fellow, Department of Pulmonary and Critical Care Medicine, University of Colorado Hospital, Aurora, Colorado
Pulmonary Diseases

Aaron Berg, MD
Clinical Lecturer and Hospitalist, Department of Internal Medicine, University of Michigan Medical School, Ann Arbor, Michigan
Fluid, Acid–Base, and Electrolyte Disorders

Jeffrey Critchfield, MD
Associate Professor of Clinical Medicine, Department of Medicine, San Francisco General Hospital, University of California, San Francisco School of Medicine, San Francisco, California
Rheumatologic & Autoimmune Disorders

Vanja Douglas, MD
Assistant Clinical Professor, Department of Neurology, University of California, San Francisco, California
Neurologic Disorders

Rebecca A. Jackson, MD
Associate Professor & Chief, Obstetrics, Gynecology and Reproductive Sciences, San Francisco General Hospital, University of California, San Francisco, California
Gynecologic, Obstetric, and Breast Disorders

Kirsten Neudoerffer Kangelaris, MD
Research Fellow, Division of Hospital Medicine, University of California, San Francisco, California
Selected Genetic Disorders

Helen Kao, MD
Assistant Professor, Division of Geriatrics, Department of Medicine, University of California, San Francisco, San Francisco, California
Geriatrics

Kewchang Lee, MD
Associate Clinical Professor of Psychiatry, University of California, San Francisco; Director of Psychiatry Consultation, San Francisco Veterans Affairs Medical Center, San Francisco, California
Psychiatric Disorders

Joan C. Lo, MD
Research Scientist, Division of Research, Kaiser Permanente Northern California; Associate Clinical Professor of Medicine, University of California, San Francisco, Oakland, California
Endocrine Disorders

Michael P. Lukela, MD
Director, Medicine-Pediatrics Residency Program, University of Michigan Medical School, Ann Arbor, Michigan
Common Pediatric Disorders

Read G. Pierce, MD
Chief Resident, Internal Medicine, University of California, San Francisco, San Francisco, California
References

Jack Resneck, Jr., MD
Associate Professor of Dermatology and Health Policy, Department of Dermatology and Phillip R. Lee Institute for Health Policy Studies, University of California, San Francisco School of Medicine, San Francisco, California
Dermatologic Disorders

Michael Rizen, MD, PhD, and Stephanie T. Phan, MD
Eye Clinic of Bellevue, Ltd, P.S., Bellevue, Washington
Common Disorders of the Eye

Amandeep Shergill, MD
Assistant Clinical Professor of Medicine, Division of Gastroenterology, Department of Medicine, San Francisco Veterans Affairs Medical Center & University of California, San Francisco, San Francisco, California
Gastrointestinal Diseases
Hepatobiliary Disorders

Sanjay Shewarkramani, MD
Clinical Assistant Professor, Department of Emergency Medicine, Georgetown University Hospital, Washington, DC
Poisoning

Emily Shuman, MD
Clinical Lecturer, Department of Internal Medicine, Division of Infectious Diseases, University of Michigan, Ann Arbor, Michigan
Infectious Diseases

Jennifer F. Waljee, MD, MS
Department of Surgery, University of Michigan, Ann Arbor, Michigan
Common Surgical Disorders

Sunny Wang, MD
Assistant Clinical Professor of Medicine, Hematology/Oncology, University of California, San Francisco & San Francisco VA Medical Center, San Francisco, California
Hematologic Diseases
Oncologic Diseases

Suzanne Watnick, MD
Medical Director, VA Dialysis Unit, Associate Professor of Medicine, Portland VA Medical Center and Oregon Health & Science University, Portland, Oregon
Genitourinary and Renal Disorders

Katherine C. Yung, MD
Assistant Professor, Department of Otolaryngology-Head and Neck Surgery, Division of Laryngology, University of California, San Francisco, California
Common Disorders of the Ear, Nose, and Throat

Preface

The fourth edition of *Current Essentials of Medicine* (originally titled *Essentials of Diagnosis & Treatment*) continues a feature introduced in the second edition: a Clinical Pearl for each diagnosis. Pearls are timeless. Learners at every level, and in many countries, remember them as crucial adjuncts to more detailed information about disorders of every type. Ideally, a Pearl is succinct, witty, and often colloquial; it is stated with a certitude suggesting 100% accuracy. Of course, nothing in medicine is so, yet a Pearl such as "If you diagnose multiple sclerosis over the age of fifty, diagnose something else" is easily committed to memory. Thus, Pearls should be accepted as offered. Many have been changed since the previous editions, and we urge readers to come up with Pearls of their own, which may prove to be more useful than our own.

The fourth edition, like its predecessors, uses a single page to consider each disease, providing the reader with a concise yet usable summary about most of the common diseases seen in clinical practice. For readers seeking more detailed information, a current reference has been provided for each disease. We have expanded the number of diseases from the previous edition and updated the clinical manifestations, diagnostic tests, and treatment considerations with the help of our contributing subject-matter experts.

We hope that you enjoy this edition as much as, if not more than, the previous ones.

Lawrence M. Tierney, Jr., MD
San Francisco, California

Sanjay Saint, MD, MPH
Ann Arbor, Michigan

Mary A. Whooley, MD
San Francisco, California

Contents

1

Cardiovascular Diseases

Acute Coronary Syndrome

Essentials of Diagnosis

- Classified as ST-segment elevation (Q wave) myocardial infarction (MI), non–ST-segment elevation (non-Q wave) MI, or unstable angina
- Prolonged (> 30 minutes) chest pain, associated with shortness of breath, nausea, left arm or neck pain, and diaphoresis; can be painless in diabetics
- S_4 common; S_3, mitral insufficiency on occasion
- Cardiogenic shock, ventricular arrhythmias may complicate
- Unrelenting chest pain may mean ongoing jeopardized myocardium

Differential Diagnosis

- Stable angina; aortic dissection; pulmonary emboli
- Tietze's syndrome (costochondritis)
- Cervical or thoracic radiculopathy, including pre-eruptive zoster
- Esophageal spasm or reflux; cholecystitis
- Pericarditis; myocarditis; Takotsubo's (stress-induced) cardiomyopathy
- Pneumococcal pneumonia; pneumothorax

Treatment

- Monitoring, oxygen, aspirin, oral beta-blockers, and heparin if not contraindicated; consider clopidogrel
- Reperfusion by thrombolysis early or percutaneous coronary intervention (PCI) in selected patients with either ST-segment elevation or new left bundle-branch block on ECG
- Glycoprotein IIb/IIIa inhibitors considered for ST-segment elevation MI in patients undergoing PCI
- Nitroglycerin and morphine for recurrent ischemic pain; also useful for relieving pulmonary congestion, decreasing sympathetic tone, and reducing blood pressure
- Angiotensin-converting enzyme (ACE) inhibitors, angiotensin II receptor blockers, and aldosterone blockers such as eplerenone improve ventricular remodeling after infarcts

Pearl

Proceed rapidly to reperfusion in ST-segment elevation MI as time equals muscle.

Reference

Kumar A, Cannon CP. Acute coronary syndromes: diagnosis and management, part II. Mayo Clin Proc 2009;84:1021. [PMID: 19880693]

1 Acute Pericarditis

Essentials of Diagnosis

- Inflammation of the pericardium due to viral infection, drugs, recent myocardial infarction, autoimmune syndromes, renal failure, cardiac surgery, trauma, or neoplasm
- Common symptoms include pleuritic chest pain radiating to the shoulder (trapezius ridge) and dyspnea; pain improves with sitting up and expiration
- Examination may reveal fever, tachycardia, and an intermittent friction rub; cardiac tamponade may occur in any patient
- Electrocardiography usually shows PR depression, diffuse concave ST-segment elevation followed by T-wave inversions; no reciprocal changes are seen
- Echocardiography may reveal pericardial effusion

Differential Diagnosis

- Acute myocardial infarction
- Aortic dissection
- Pulmonary embolism
- Pneumothorax
- Pneumonia
- Cholecystitis and pancreatitis

Treatment

- Aspirin or nonsteroidal anti-inflammatory agents such as ibuprofen or indomethacin to relieve symptoms; colchicine has been shown to reduce recurrence; rarely, steroids for recurrent cases
- Hospitalization for patients with symptoms suggestive of significant effusions, cardiac tamponade, elevated biomarkers, or recent trauma or surgery

Pearl

Patients with pericarditis often present with chest pain that is worse when lying flat.

Reference

Imazio M, Cecchi E, Demichelis B, et al. Myopericarditis versus viral or idiopathic acute pericarditis. Heart 2008;94:498. [PMID: 17575329]

Acute Rheumatic Fever

1

Essentials of Diagnosis

- A systemic immune process complicating group A beta-hemolytic streptococcal pharyngitis
- Usually affects children between the ages of 5 and 15; rare after 25
- Occurs 1–5 weeks after throat infection
- Diagnosis based on Jones' criteria (two major or one major and two minor) and confirmation of recent streptococcal infection
- Major criteria: Erythema marginatum, migratory polyarthritis, subcutaneous nodules, carditis, and Sydenham's chorea; the latter is the most specific, least sensitive
- Minor criteria: Fever, arthralgias, elevated erythrocyte sedimentation rate, elevated C-reactive protein, PR prolongation on ECG, and history of pharyngitis

Differential Diagnosis

- Juvenile or adult rheumatoid arthritis
- Endocarditis
- Osteomyelitis
- Systemic lupus erythematosus
- Lyme disease
- Disseminated gonococcal infection

Treatment

- Bed rest until vital signs and ECG become normal
- Salicylates and nonsteroidal anti-inflammatory drugs reduce fever and joint complaints but do not affect the natural course of the disease; rarely, corticosteroids may be used
- If streptococcal infection is still present, penicillin is indicated
- Prevention of recurrent streptococcal pharyngitis until 18 years old (a monthly injection of benzathine penicillin is most commonly used)

Pearl

Inappropriate tachycardia in a febrile child with a recent sore throat suggests this diagnosis.

Reference

van Bemmel JM, Delgado V, Holman ER, et al. No increased risk of valvular heart disease in adult poststreptococcal reactive arthritis. Arthritis Rheum 2009;60:987. [PMID: 19333942]

1 Angina Pectoris

Essentials of Diagnosis

- Generally caused by atherosclerotic coronary artery disease and severe coronary obstruction; cigarette smoking, diabetes mellitus, hypertension, hypercholesterolemia, and family history are established risk factors
- Stable angina characterized by pressure-like episodic precordial chest discomfort, precipitated by exertion or stress, relieved by rest or nitrates; unstable angina can occur with less exertion or at rest
- Stable angina is predictable in initiation and termination; unstable angina is not
- S_4, S_3, mitral murmur, paradoxically split S_2 may occur transiently with pain
- Electrocardiography usually normal between episodes (or may show evidence of old infarction); electrocardiography with pain may show evidence of ischemia, classically ST depression
- Diagnosis from history and stress tests; confirmed by coronary arteriography

Differential Diagnosis

- Other coronary syndromes (myocardial infarction, vasospasm)
- Tietze's syndrome (costochondritis)
- Intercostal neuropathy, especially caused by herpes zoster
- Cervical or thoracic radiculopathy, including pre-eruptive zoster
- Esophageal spasm or reflux disease; cholecystitis
- Pneumothorax; pulmonary embolism; pneumonia

Treatment

- Address risk factors; sublingual nitroglycerin for episodes
- Ongoing treatment includes aspirin, long-acting nitrates, beta-blockers, and calcium channel blockers
- Angioplasty with stenting considered in patients with anatomically suitable stenoses who remain symptomatic on medical therapy
- Bypass grafting for patients with refractory angina on medical therapy, three-vessel disease (or two-vessel disease with proximal left anterior descending artery disease) and decreased left ventricular function, or left main coronary artery disease

Pearl

Many patients with angina will not say they are having pain; they will deny it but say they have discomfort, heartburn, or pressure.

Reference

Poole-Wilson PA, Vokó Z, Kirwan BA, de Brouwer S, Dunselman PH, Lubsen J; ACTION investigators. Clinical course of isolated stable angina due to coronary heart disease. Eur Heart J 2007;28:1928. [PMID: 17562665]

Aortic Coarctation

Essentials of Diagnosis

- Elevated blood pressure in the aortic arch and its branches with reduced blood pressure distal to the left subclavian artery
- Lower extremity claudication or leg weakness with exertion in young adults is characteristic
- Systolic blood pressure is higher in the arms than in the legs, but diastolic pressure is similar compared with radial
- Femoral pulses delayed and decreased, with pulsatile collaterals in the intercostal areas; a harsh, late systolic murmur may be heard in the back; an aortic ejection murmur suggests concomitant bicuspid aortic valve
- Electrocardiography with left ventricular hypertrophy; chest x-ray may show rib notching inferiorly due to collaterals
- Transesophageal echo with Doppler or MRI is diagnostic; angiography confirms gradient across the coarctation

Differential Diagnosis

- Essential hypertension
- Renal artery stenosis
- Renal parenchymal disease
- Pheochromocytoma
- Mineralocorticoid excess
- Oral contraceptive use
- Cushing's syndrome

Treatment

- Surgery is the mainstay of therapy; balloon angioplasty in selected patients
- Twenty-five percent of patients remain hypertensive after surgery

Pearl

Intermittent claudication in a young person with no vascular disease should suggest this problem; listen to the back for the characteristic murmur.

Reference

Tomar M, Radhakrishanan S. Coarctation of aorta: intervention from neonates to adult life. Indian Heart J 2008;60(suppl D):D22. [PMID: 19845083]

1 Aortic Dissection

Essentials of Diagnosis

- Most patients between age 50 and 70; risks include hypertension, Marfan's syndrome, bicuspid aortic valve, coarctation of the aorta, and pregnancy
- Type A involves the ascending aorta or arch; type B does not
- Sudden onset of chest pain with interscapular radiation in at-risk patient
- Unequal blood pressures in upper extremities, new diastolic murmur of aortic insufficiency occasionally seen in type A
- Chest x-ray nearly always abnormal; ECG unimpressive unless coronary artery compromised
- CT, transesophageal echocardiography, MRI, or aortography usually diagnostic

Differential Diagnosis

- Acute myocardial infarction
- Angina pectoris
- Acute pericarditis
- Pneumothorax
- Pulmonary embolism
- Boerhaave's syndrome

Treatment

- Nitroprusside and beta-blockers to lower systolic blood pressure to approximately 100 mm Hg, pulse to 60/min
- Emergent surgery for type A dissection; medical therapy for type B is reasonable, with surgery or percutaneous intra-aortic stenting reserved for high-risk patients

Pearl

The pain of dissection starts abruptly; that of ischemic heart disease increases to maximum over several minutes.

Reference

Tran TP, Khoynezhad A. Current management of type B aortic dissection. Vasc Health Risk Manag 2009;5:53. [PMID: 19436678]

Aortic Regurgitation

Essentials of Diagnosis

- Causes include congenital bicuspid valve, endocarditis, rheumatic heart disease, Marfan's syndrome, aortic dissection, ankylosing spondylitis, reactive arthritis, and syphilis
- Acute aortic regurgitation: Abrupt onset of pulmonary edema
- Chronic aortic regurgitation: Asymptomatic until middle age, when symptoms of left heart failure develop insidiously
- Soft, high-pitched, decrescendo holodiastolic murmur in chronic aortic regurgitation; occasionally, an accompanying apical low-pitched diastolic rumble (Austin Flint murmur) in nonrheumatic patients; in acute aortic regurgitation, the diastolic murmur can be short (or not even heard) and harsh
- Acute aortic regurgitation: Reduced S_1 and an S_3; rales
- Chronic aortic regurgitation: Reduced S_1, wide pulse pressure, water-hammer pulse, subungual capillary pulsations (Quincke's sign), rapid rise and fall of pulse (Corrigan's pulse), and a diastolic murmur over a partially compressed femoral artery (Duroziez's sign)
- ECG shows left ventricular hypertrophy
- Echo Doppler confirms diagnosis, estimates severity

Differential Diagnosis

- Pulmonary hypertension with Graham Steell murmur
- Mitral, or rarely, tricuspid stenosis
- Left ventricular failure due to other cause
- Dock's murmur of left anterior descending artery stenosis

Treatment

- Vasodilators (eg, nifedipine and ACE inhibitors) do not delay the progression to valve replacement in patients with mild to moderate aortic regurgitation
- In chronic aortic regurgitation, surgery reserved for patients with symptoms or ejection function < 50% on echocardiography
- Acute regurgitation caused by aortic dissection or endocarditis requires surgical replacement of the valve

Pearl

The Hodgkin-Key murmur of aortic regurgitation is harsh and raspy, caused by leaflet eventration typical of luetic aortopathy.

Reference

Kamath AR, Varadarajan P, Turk R, Sampat U, Patel R, Khandhar S, Pai RG. Survival in patients with severe aortic regurgitation and severe left ventricular dysfunction is improved by aortic valve replacement. Circulation 2009; 120(suppl):S134. [PMID: 19752358]

1 Aortic Stenosis

Essentials of Diagnosis

- Causes include congenital bicuspid valve and progressive calcification with aging of a normal three-leaflet valve; rheumatic fever rarely, if ever, causes isolated aortic stenosis
- Dyspnea, angina, and syncope singly or in any combination; sudden death in less than 1% of asymptomatic patients
- Weak and delayed carotid pulses (pulsus parvus et tardus); a soft, absent, or paradoxically split S_2; a harsh diamond-shaped systolic ejection murmur to the right of the sternum, often radiating to the neck, but on occasion heard apically (Gallavardin's phenomenon)
- Left ventricular hypertrophy by ECG and chest x-ray may show calcification in the aortic valve
- Echo confirms diagnosis and estimates valve area and gradient; cardiac catheterization confirms severity if there is discrepancy between physical exam and echo; concomitant coronary atherosclerotic disease present in 50%

Differential Diagnosis

- Mitral regurgitation
- Hypertrophic obstructive or dilated cardiomyopathy
- Atrial or ventricular septal defect
- Syncope due to other causes
- Ischemic heart disease without valvular abnormality

Treatment

- Surgery is indicated for all patients with severe aortic stenosis (mean aortic valve gradient > 40 mm Hg or valve area ≤ 1.0 cm^2) and the presence of symptoms or ejection fraction < 50%
- Percutaneous balloon valvuloplasty for temporary (6 months) relief of symptoms in poor surgical candidates

Pearl

In many cases, the softer the murmur, the worse the stenosis.

Reference

Dal-Bianco JP, Khandheria BK, Mookadam F, Gentile F, Sengupta PP. Management of asymptomatic severe aortic stenosis. J Am Coll Cardiol 2008;52:1279. [PMID: 18929238]