

FIGURE 1.1 Ancient Upper and Lower Egypt. (Adapted from reference 1, p. 1)

TABLE 1.1

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 Images Depicting Endocrine and Cranial Abnormalities in the Principal Rulers of Egypt's 18th Dynasty\*
 

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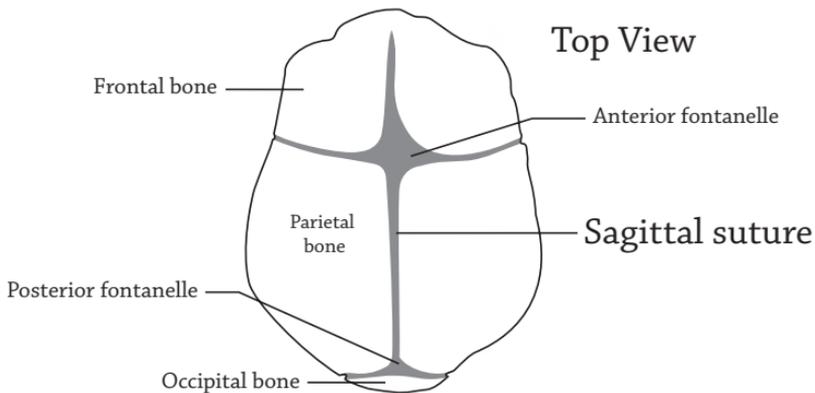
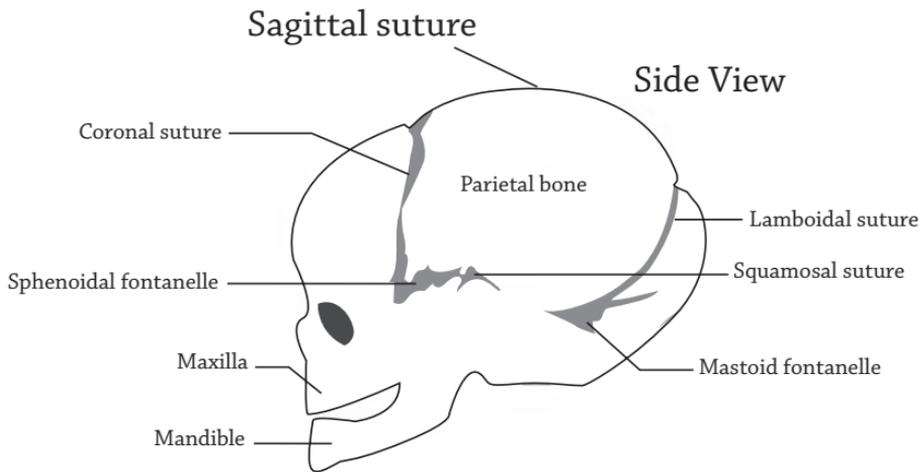
Ruler	Gynecomastia	Cranial Abnormality
Amosis	No data**	Absent
Amenophis I	Absent	Absent
Thutmose I†	Present	Present
Thutmose II	Absent	Present
Queen Hatshepsut	Not applicable	Present
Thutmose III	No data**	Present
Amenophis II	Present	No data**
Thutmose IV	Present	Present
Amenophis III	Present	Present
Amenophis IV/Akhenaten	Present	Present
Smenkhkare	Present	Present
Tutankhamun†	Present	Present
Aye	Absent	Absent
Horemheb	Absent	Absent

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\* Adapted from Braverman et al. (reference 56).

\*\* The presence or absence of cranial or endocrine abnormality in any statuary, painting, mummy, or relief.

† Patrilineal line of Tutankhamun begins with Thutmose I and ends with Tutankhamun.



**FIGURE 1.4** Drawing of the skull of a newborn child showing the various plates that fuse to form the adult skull and the location of the sagittal suture.

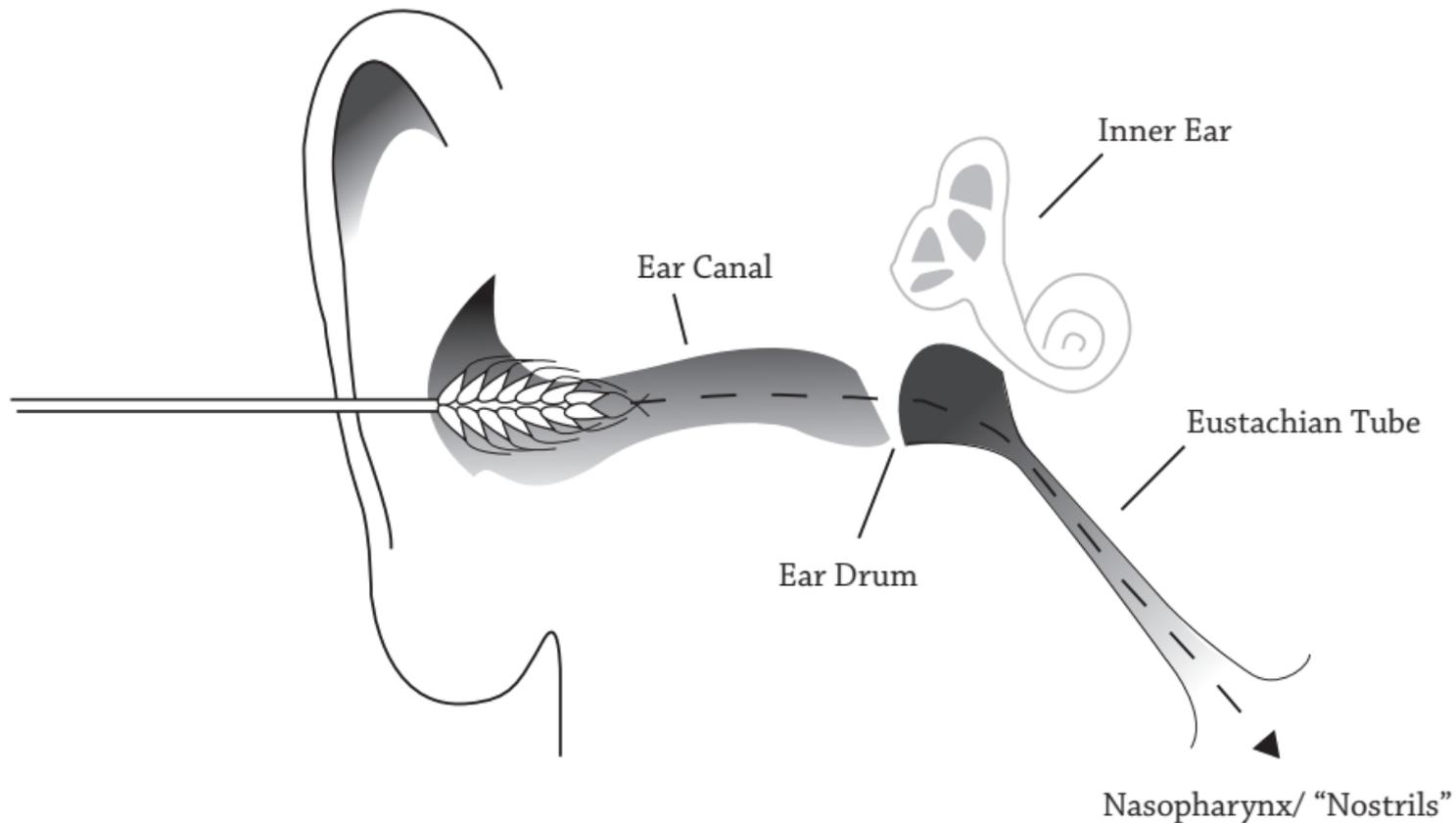


FIGURE 2.2 Anatomy of the ear, showing how grass inserted into the ear canal might find its way through a perforated ear drum to the “nostrils” via the Eustachian tube.



FIGURE 2.3 X-ray appearance of a “bamboo” spine (right) compared to that of a normal spine (left).

DSM-IV Criteria Defining Antisocial and Narcissistic Personality Disorders

A. 301.7 ANTISOCIAL PERSONALITY DISORDER\*

Pervasive pattern of violation of the rights of others

1. Failure to conform to social norms
2. Deceitfulness
3. Impulsivity
4. Irritability and aggressiveness
5. Reckless disregard for safety of self or others
6. Irresponsibility (e.g., regarding finances)
7. Lack of remorse (for having injured another)

\*Evidence of disordered conduct before age 15 years

B. 301.81 NARCISSISTIC PERSONALITY DISORDER

Grandiosity, need for admiration, and lack of empathy

1. Grandiose, expects to be recognized as superior
  2. Fantasies of unlimited success, power, brilliance, beauty
  3. Believes that he/she is “special” and unique
  4. Requires excessive admiration
  5. Sense of entitlement, unreasonable expectations of automatic compliance
  6. Interpersonally exploitative
  7. Lacks empathy
  8. Envious of others or believes other envious of him/her
  9. Arrogant, haughty
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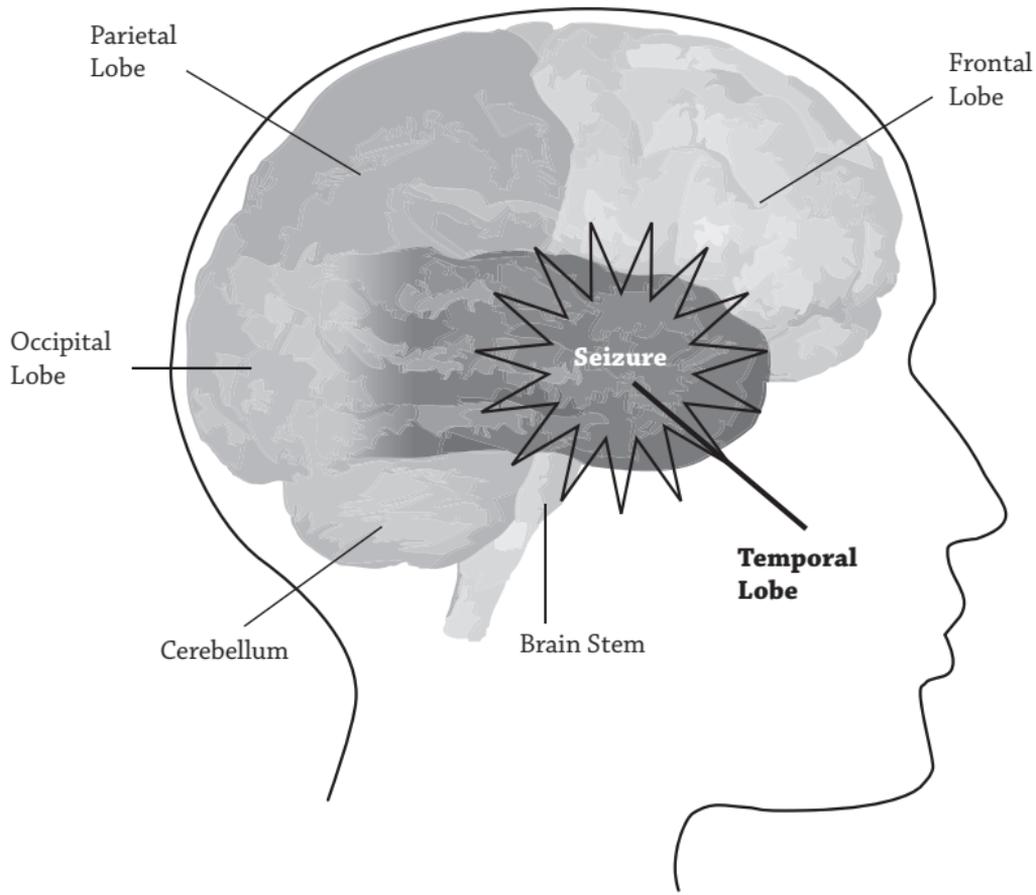


FIGURE 3.2 Drawing of the human brain showing the location of the temporal lobe in relation to the other cerebral lobes.



FIGURE 4.2 Map of the Near East in 1190 AD, showing Saladin's dominions 3 years before his death. (From Shepherd WR [1911]. *Europe and the Mediterranean Lands about 1190*. Available online at [http://www.lib.utexas.edu/maps/historical/shepherd\\_1911/shepherd-c-070-071.jpg](http://www.lib.utexas.edu/maps/historical/shepherd_1911/shepherd-c-070-071.jpg))

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FIGURE 5.3 Section of John Paul Jones' kidney prepared by Prof. Cornil and purportedly showing fibrosis of the glomeruli and interstitial nephritis (original magnification  $\times 100$ ). (With permission from the U.S. Naval Historical Center, Washington, DC)

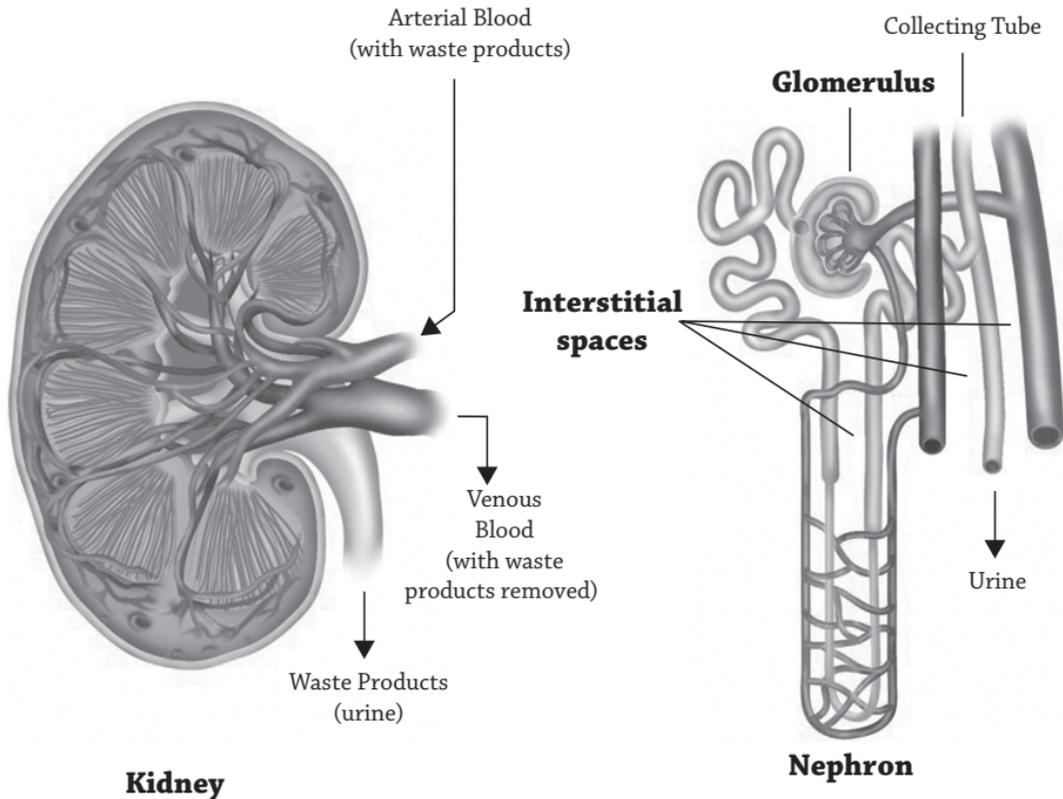


FIGURE 5.4 Diagram of the human kidney, showing the basic structure of the nephron, many thousands of which filter waste products from the blood and process them into urine. Note the glomerulus (the kidney's micro-filter) and the interstitial spaces, which are composed of support tissue and become infiltrated by inflammatory cells during "interstitial nephritis."



[eweems.com/goya](http://eweems.com/goya)

Museo de la Real Academia de Bellas Artes Madrid Spain

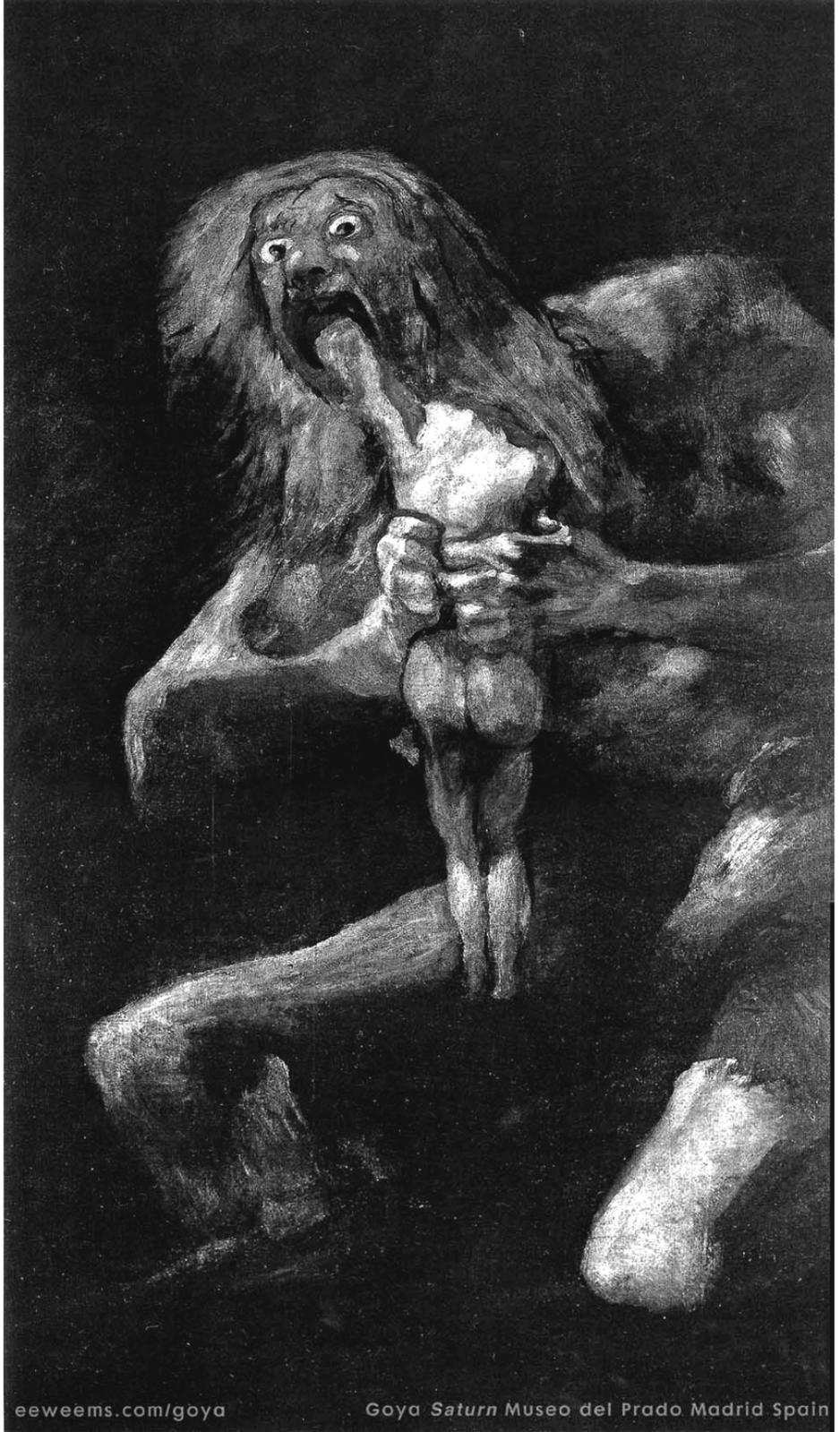
FIGURE 6.1 The patient as a young man. Self-portrait. (Museo de la Real Academia de Bellas Artes de San Fernando, Madrid)



FIGURE 6.2 Self-portrait of the patient with Dr. Arrieta, 1820. (The Minneapolis Institute of the Arts)



FIGURE 6.3 Goya. Self-portrait, c. 1797–1800. (Musee Goya Castres, France)



eeweems.com/goya

Goya Saturn Museo del Prado Madrid Spain

FIGURE 6.4 Goya, *Saturno devorando a su hijo* (Saturn Devouring His Son), 1820–24. Oil transferred to canvas from mural. (Museo Nacional del Prado, Madrid)

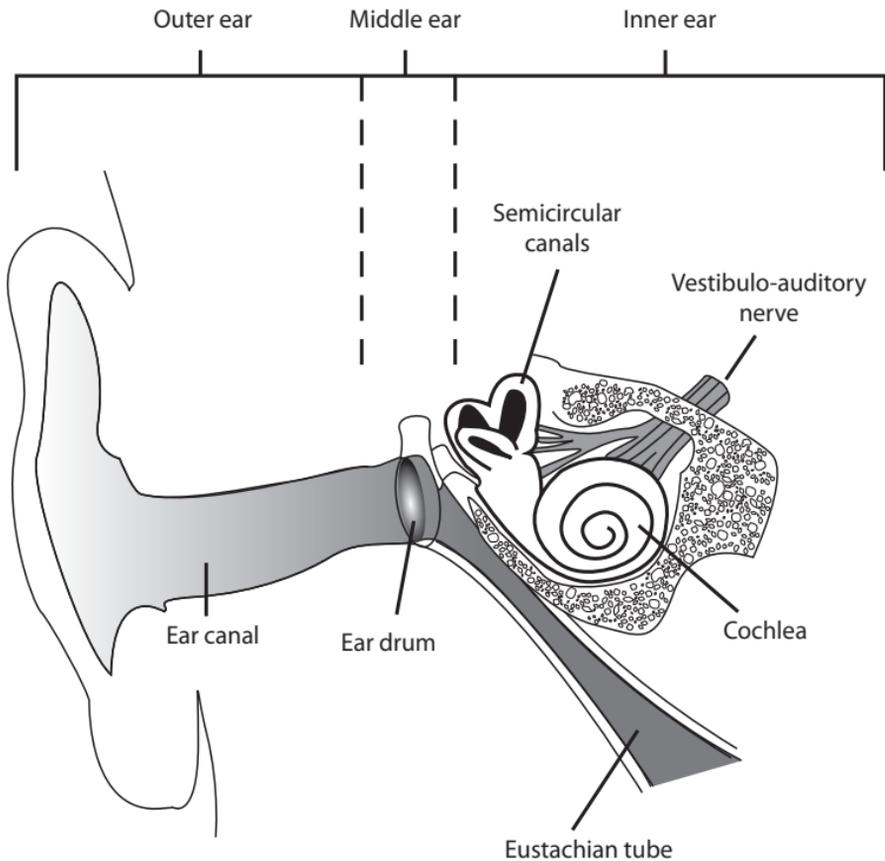


FIGURE 6.5 Drawing of the inner ear showing the location of the vestibulo-auditory (balance-hearing) nerve in relation to the semicircular canal (the sensory organ responsible for maintaining balance or equilibrium) and the cochlea (the principal hearing organ).



FIGURE 7.1 *Simón Bolívar, Libertador de Colombia*, by José Gil de Castro, Lima, 1827. Portrait currently resides in the John Carter Brown Library at Brown University.

TABLE 7.1

## Diagnostic Considerations and Potential Tests to be Performed on Bolívar's Remains

Possible Diagnoses	Cause	Test
INFECTIONS		
Tuberculosis	<i>Mycobacterium tuberculosis</i>	PCR or electron microscopy
Paracoccid- ioidomycosis	<i>Paracoccidioides brasiliensis</i>	"
Histoplasmosis	<i>Histoplasma capsulatum</i>	"
Melioidosis	<i>Burkholderia pseudomallei</i>	"
Syphilis	<i>Treponema pallidum</i>	"
Bacterial pneumonia	<i>Haemophilus influenzae</i>	"
	<i>Haemophilus</i> spp.	"
	<i>Streptococcus pneumoniae</i>	"
	<i>Staphylococcus aureus</i>	"
	<i>Klebsiella</i> spp.	"
	<i>Pseudomonas aeruginosa</i>	"
TOXINS		
Arsenicosis	Arsenic	Inductively coupled plasma mass spectrometry
Cantharidin intoxication	Extract from <i>Lytta vesicatoria</i>	Gas chromatography mass spectrometry
GENETIC OR ACQUIRED		
Diabetes mellitus	Insulin deficiency or resistance	None
Hemochromatosis	Genetic iron overload	PCR mutational analysis, tissue iron analysis
Wilson's disease	Genetic copper overload	Tissue copper analysis
Adrenal insufficiency	Steroid hormone deficiency	None
Familial Mediterranean fever	Autosomal recessive disease	PCR mutational analysis
Lung tumor	Cancer	Computed tomography of bony remains for metastases
Cardiac tumor	Cancer	Computed tomography of bony remains for metastases
Epilepsy	Seizure disorder	None

PCR, polymerase chain reaction.

Adapted from reference 41.

TABLE 7.2

### Clinical Features of Chronic Arsenic Intoxication Among 156 Cases Diagnosed in West Bengal

Symptoms	No. (%) of Cases	Signs	No. (%) of Cases
Weakness	110 (70.5)	Pigmentation <sup>6</sup>	156 (100.0)
Headache	32 (20.5)	Keratosiis <sup>6</sup>	96 (61.5)
Burning eyes	69 (44.2)	Anemia	74 (47.4)
Nausea	17 (10.9)	Hepatomegaly <sup>7</sup>	120 (76.9)
Abdominal pain	60 (38.4)	Splenomegaly <sup>8</sup>	49 (31.4)
Epigastric <sup>1</sup>	39 (25.0)	Ascites <sup>9</sup>	5 (3.0)
Periumbilical <sup>2</sup>	21 (13.4)	Pedal edema <sup>10</sup>	18 (11.5)
Diarrhea	51 (32.6)	Abnormal lung exam	45 (28.8)
Cough	89 (57.0)	Polyneuropathy <sup>11</sup>	21 (13.4)
Productive	53 (33.9)		
Nonproductive	36 (23.1)		
Hemoptysis <sup>3</sup>	8 (5.1)		
Dyspnea <sup>4</sup>	37 (23.7)		
Paresthesia <sup>5</sup>	74 (47.4)		

<sup>1</sup>Upper abdominal, <sup>2</sup>mid-abdominal, <sup>3</sup>bloody sputum, <sup>4</sup>shortness of breath, <sup>5</sup>tingling, numbness, or pain, <sup>6</sup>dark or horny areas of skin, <sup>7</sup>enlarged liver, <sup>8</sup>enlarged spleen, <sup>9</sup>abdominal fluid, <sup>10</sup>swollen feet, <sup>11</sup>multiple dysfunctional peripheral nerves.

Adapted from reference 45.

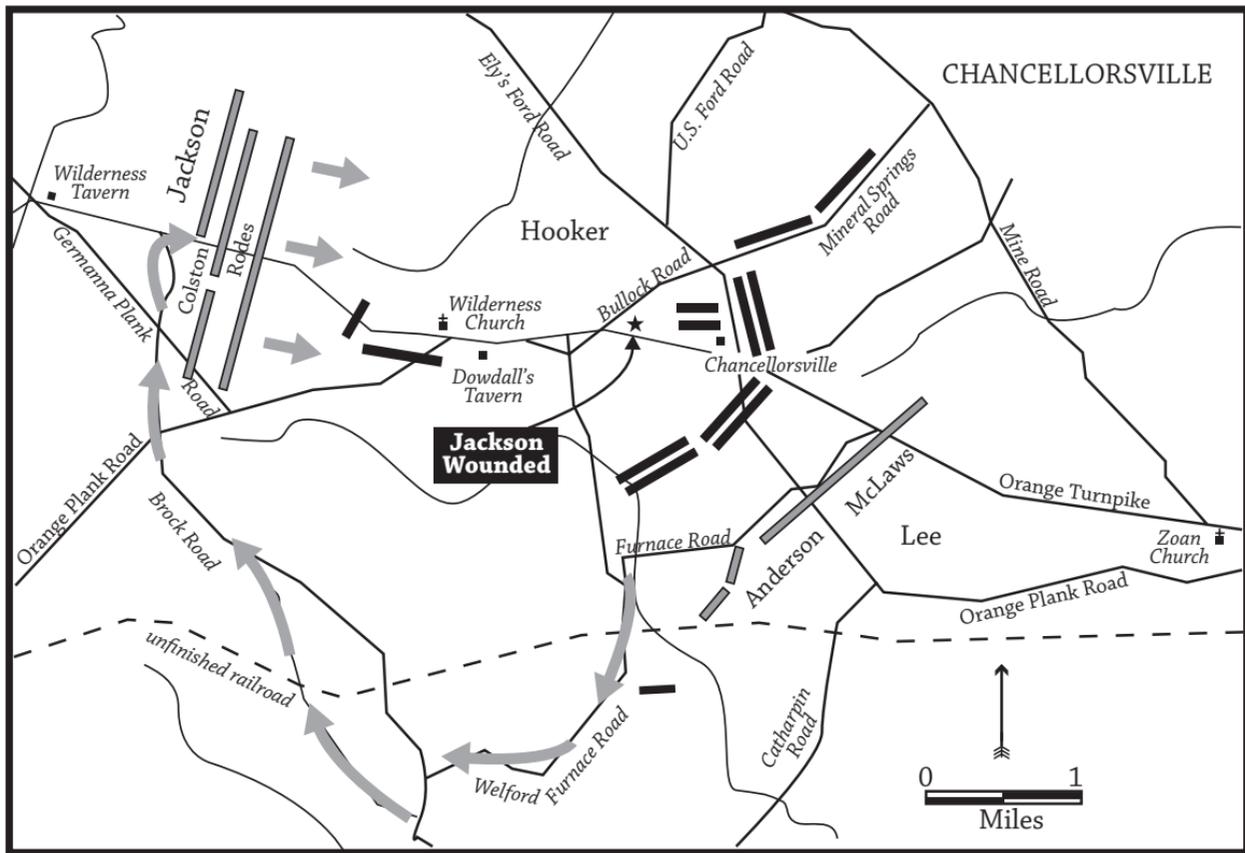


FIGURE 8.1 Map showing the disposition of Confederate (*gray bars*) and Union (*black bars*) forces at Chancellorsville at the time of the patient's celebrated flanking maneuver. (Adapted from Robertson, ref. 37)

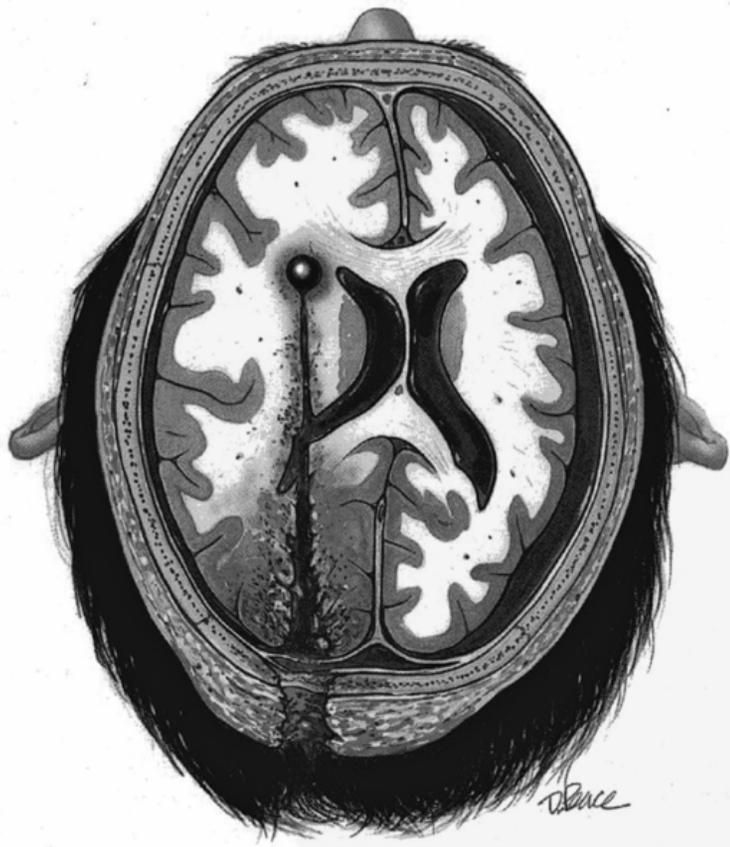
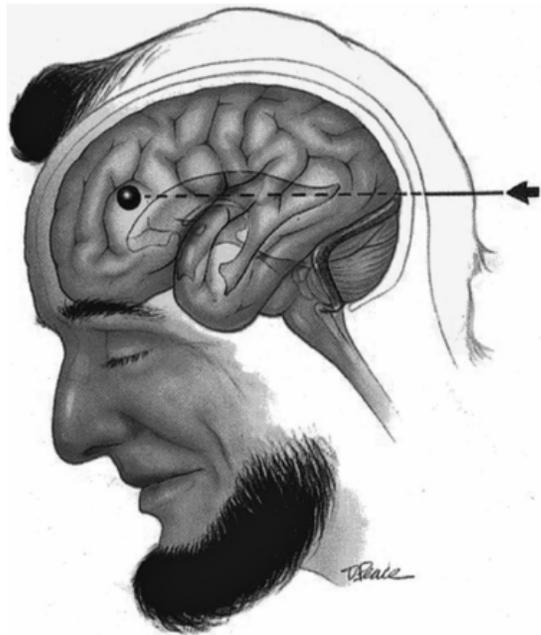


FIGURE 9.2 Artist's depiction of the patient's gunshot wound (*left*) and its damage to the patient's brain as revealed at autopsy (*right*). (From reference 62, with permission from Elsevier)

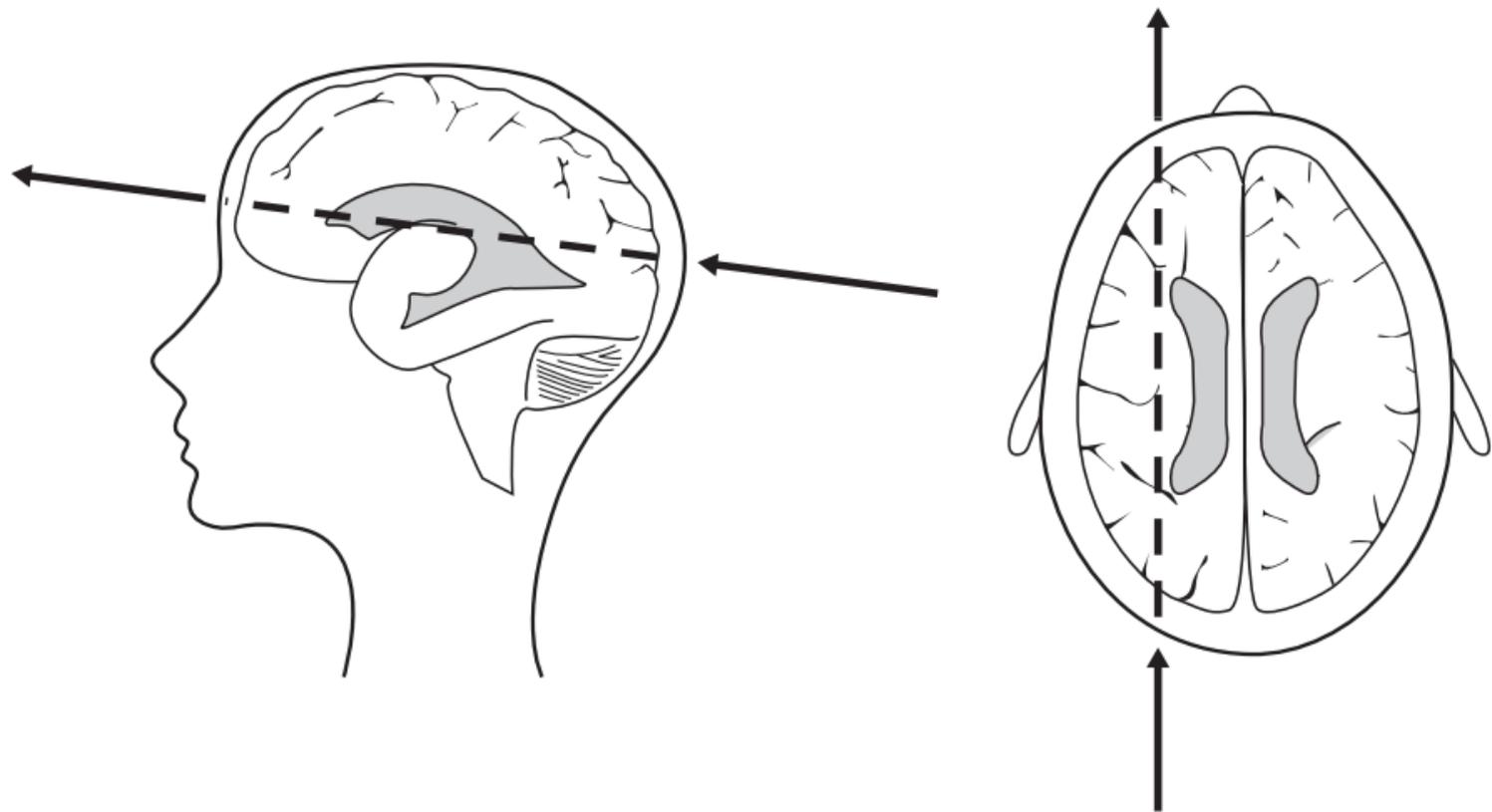


FIGURE 9.4 Path taken by a bullet through Rep. Giffords' brain as reported by the *Guardian* on January 10, 2011.

TABLE 10.1

## Diagnostic Evaluation of Patients with Cyclic Vomiting Syndrome (60, 61)

Alternative Diagnosis <sup>†</sup>	Diagnostic Tests	Potential Harm Caused by the Tests
Esophageal reflux <sup>a</sup>	EGD, UGI, PPI trial	Bleeding, cardiopulmonary complications of sedation, bowel perforation, aspiration
Gastritis/PUD/achalasia <sup>a</sup>	EGD (with biopsy), antibody assay and/or stool antigen or breath test for <i>H. pylori</i>	Bleeding, cardiopulmonary complications of sedation, bowel perforation, aspiration
Pancreatitis <sup>a</sup>	Serum amylase and lipase, endoscopic ultrasound	Bleeding, cardiopulmonary complications of sedation, bowel perforation, aspiration
Gallbladder disease <sup>a,b</sup>	Abdominal ultrasound, endoscopic retrograde cholangio-pancreatography	Bleeding, cardiopulmonary complications of sedation, bowel perforation, aspiration, pancreatitis
Partial bowel obstruction <sup>a,b</sup>	UGI (with small bowel follow-through), colonoscopy, abdominal CT scan (with contrast)	Bowel perforation, bleeding, radiation exposure, contrast-induced ARF
Pyelonephritis	Urinalysis, urine culture and sensitivity	None
Appendicitis <sup>a,b</sup>	CBC, abdominal CT scan (with contrast)	Radiation exposure, contrast-induced ARF
Delayed gastric emptying <sup>a</sup>	Radionucleotide gastric emptying study	Radiation exposure
Porphyria <sup>c</sup>	Urine porphyrins	None
Plumbism	Whole blood lead concentration	None
Abdominal epilepsy/migraine <sup>d</sup>	EEG, head CT (with contrast) and MRI (with gadolinium), antimigraine drug trial	Radiation exposure, contrast-induced ARF, gadolinium-induced nephrogenic sclerosis
Crohn's disease <sup>a</sup>	EGD, abdominal CT (with contrast), colonoscopy, capsule endoscopy	Bleeding, bowel perforation, radiation exposure

(continued)

TABLE 10.1 (Continued)

Alternative Diagnosis <sup>1</sup>	Diagnostic Tests	Potential Harm Caused by the Tests
SLE <sup>e</sup>	Assays for antinuclear, anti-double-stranded DNA and anti-Sm nuclear antigen antibodies	None
Psychiatric disorder <sup>d,f</sup>	EEG, head CT (with contrast) and MRI/MRA (with gadolinium)	Radiation exposure, contrast-induced ARF, gadolinium-induced nephrogenic sclerosis
Chagas disease <sup>g</sup>	<i>T. cruzi</i> antibody assay	None

<sup>1</sup>Subspecialty consultation obtained: a, Gastroenterology; b, General surgery; c, Endocrinology; d, Neurology; e, Rheumatology; f, Psychiatry; g, Infectious diseases.

PUD, peptic ulcer disease; SLE, systemic lupus erythematosus; EGD, esophagogastric duodenoscopy; UGI, upper gastrointestinal barium study; PPI, proton pump inhibitor; CBC, complete blood count; CT, computed tomography; MRI, magnetic resonance imaging; MRA, magnetic resonance angiography; EEG, electroencephalogram; ARF, acute renal failure.

TABLE 10.2

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DSM-IV Diagnostic Criteria for 300.7, Hypochondriasis (66)

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- A. Preoccupation with fears of having, or the idea that one has, a serious disease based on the person's misinterpretation of bodily symptoms.
  - B. The preoccupation persists despite appropriate medical evaluation and reassurance.
  - C. The belief in Criterion A is not of delusional intensity (as in Delusional Disorder, Somatic Type) and is not restricted to a circumscribed concern about appearance (as in Body Dysmorphic Disorder).
  - D. The preoccupation causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.
  - E. The duration of the disturbance is at least 6 months.
  - F. The preoccupation is not better accounted for by Generalized Anxiety Disorder, Obsessive-Compulsive Disorder, Panic Disorder, a Major Depressive Episode, Separation Anxiety, or another Somatoform Disorder.
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TABLE 11.1

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## Types of Stroke by Etiology

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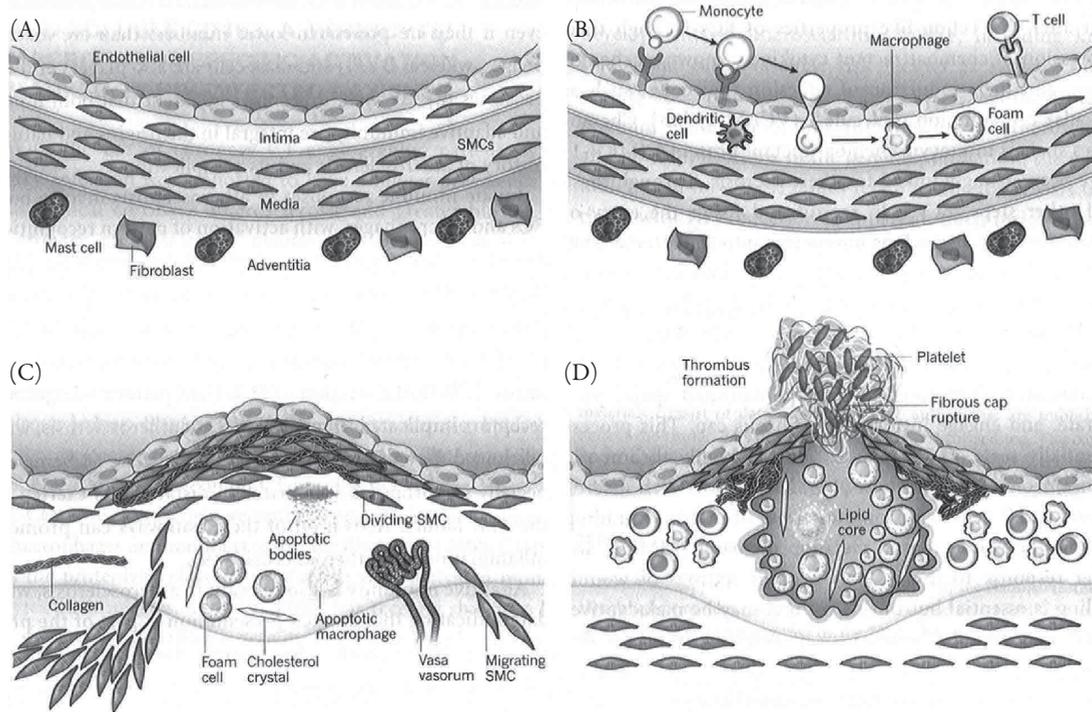
### A. ACUTE STROKE

1. Central nervous system (brain, spinal cord, retinal) infarction
2. Intracerebral (parenchymal) hemorrhage
3. Subarachnoid hemorrhage
4. Cerebral venous thrombosis

### B. SILENT STROKE

1. Silent brain infarct (may be as frequent as 8–28%)
  2. Silent cerebral hemorrhage (including microhemorrhage)
- 

From reference 60.



**FIGURE 11.2** Stages in the development of atherosclerotic plaques. (A) The three layers of a normal arterial wall: the inner layer, or intima, lined by endothelial cells in direct contact with blood flowing through the lumen of the vessel; the middle layer, or media, containing smooth muscle cells (SMC) embedded in a complex extracellular matrix; and the adventitia, the outer layer, containing mast cells, nerve endings, and nutrient microvessels. (B) The initial phase of atherosclerosis involving adhesion to and then invasion of the intima by inflammatory cells and then uptake of lipid by the inflammatory cells, converting them to “foam cells.” (C) Plaque formation involving proliferation of SMCs, accumulation of foam cells, deposition of cholesterol crystals, and invasion by microvessels. (D) Ulceration of a lipid-laden plaque, leading to the formation of a clot in the ulcerated area and occlusion of the vessel lumen. (Reprinted by permission from Macmillan Publishers Ltd., Nature Publishing Group. Libby P, Ridker PM, Hansson GK. Progress and challenges in translating the biology of atherosclerosis. *Nature* 2011;473:317–325)

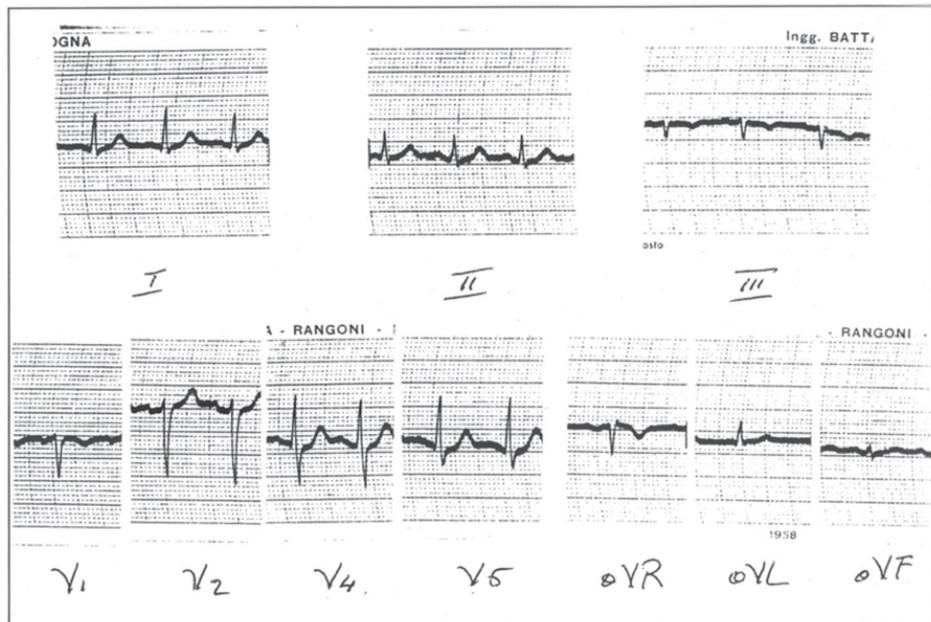
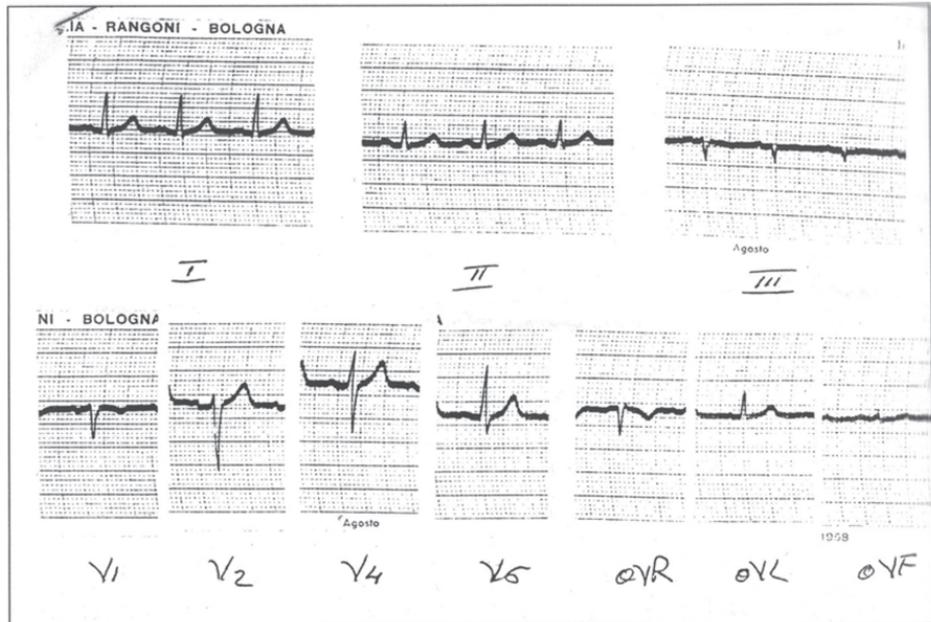


FIGURE 12.2 Lanza's electrocardiogram, supposedly taken on February 14, 1959. Close inspection reveals that it is labeled "Ragoni-Bologna," and although presented in Lanza's son's book as his father's electrocardiogram, is more likely that of some other patient.

VITAL SIGNS — GRAPH SHEET

PRE-OP  
OR  
ADM.  
(CROSS  
OUT ONE)

BLOOD PRESSURE

HARKNESS 11/1/62

ANNA B. ROOSEVELT, 11

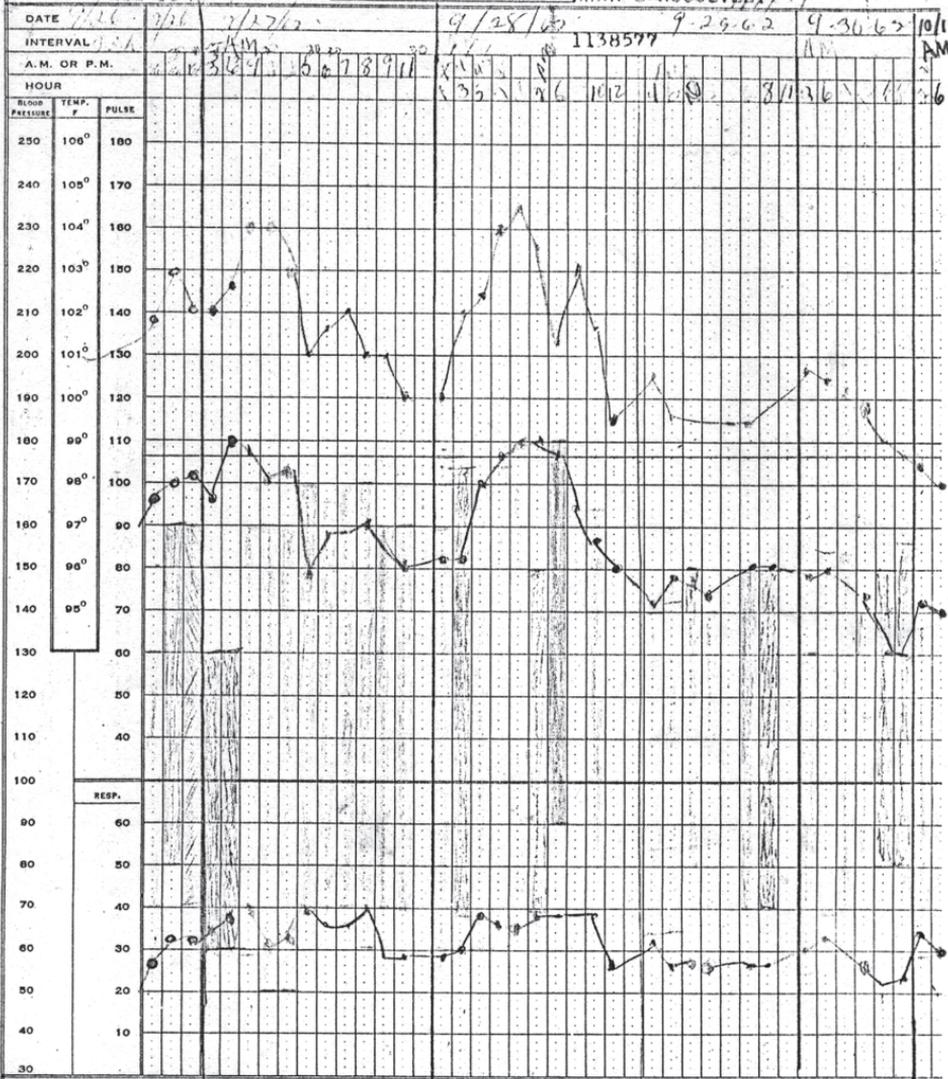


FIGURE 13.1 The patient's Presbyterian Hospital Vital Signs-Graph Sheet during her September 1962 admission. The temperature curve (top) is odd to the extent that while febrile, the patient's peak temperatures (on September 27 and 28) occur in the morning rather than the late afternoon/early evening, when such peaks typically occur.

ANNE ELEANOR ROOSEVELT

AGE: 78

AUTOPSY 20,993

WARD: Patient Expired at Home

HISTORY 1138577

ADMISSION: Many Previous Admissions

X-RAY 1138577

DIED: 11/7/62 at 6:15 P.M.

AUTOPSY: 11/7/62

DRS. SPIRO AND WIENER

FINAL ANATOMIC DIAGNOSES

APLASTIC ANEMIA, (Steroid treated), with  
hypocellular bone marrow and petechial  
hemorrhages of skin  
Fibrocalcific tuberculosis (old) involving  
both pulmonary apices and hilar lymph nodes  
Disseminated tuberculosis acutissima (treated)  
involving lungs, liver, spleen, kidneys,  
hilar lymph nodes and left temporal lobe  
Active duodenal ulcer, steroid induced

SECONDARY DIAGNOSES

Generalized arteriosclerosis, slight  
Hydronephrosis and hydroureter, slight, right  
Superficial cystitis (catheter)  
Diverticulae, jejunal, multiple  
Nabothian cysts  
Cystic dilatation of endometrial glands

FIGURE 13.3 Eleanor Roosevelt's final anatomical diagnoses as they appear on her actual autopsy report (31).