



Contents

Forewords

Preface to the Third Edition

Preface to the First Edition

Contributors

vii

ix

xi

xiii

GENERAL SURGERY

1 Wound, Keloid and Hypertrophic Scar

1

- Types of wound: Classification
- Wound healing
- Compartment syndromes
- Hypertrophic scar and keloid
- What is new?/Recent advances
- General principles of management
- Factors affecting wound healing
- Classification of surgical wounds
- Healing of specialised tissues

2 Acute Infections, Sinus, Fistula and Surgical Site Infection

9

- Cellulitis, Ludwig's angina
- Abscess
- Erysipelas
- Carbuncle
- Necrotising fasciitis
- Surgical site infection
- Sinus and fistula
- Lymphangitis
- Tuberculous lymphadenitis
- Boil
- Chronic abscess
- Acute pyomyositis
- Asepsis and antiseptics
- What is new? / Recent advances

3 Tetanus and Gas Gangrene

24

- Tetanus
- Types of gas infections
- Gas gangrene
- What is new?/Recent advances

4 Hand and Foot Infections

31

- Paronychia
- Subcutaneous infections
- Apical subungual infection
- Deep palmar abscess
- Mycetoma pedis
- Acute lymphangitis
- Terminal pulp space infections
- Web space infections
- Tenosynovitis
- Ingrowing toe nail
- What is new? / Recent advances

5 Chronic Infectious Disease

39

- Actinomycosis
- Deformities in leprosy
- AIDS
- Leprosy
- Syphilis
- Clinical notes
- What is new? / Recent advances

6 Differential Diagnosis of Leg Ulcer and Pressure Sore

45

- Classification
- Management
- Clinical examination
- Wound dressings



xviii

Manipal Manual of Surgery

- Traumatic ulcer
- Trophic ulcer
- Post-thrombotic ulcer
- Diabetic ulcer foot

- Venous ulcer
- Tropical ulcer
- Rare ulcers
- Pressure sore
- What is new?/Recent advances

7 Lower Limb Ischaemia and Popliteal Aneurysm

- Lower limb ischaemia
- Clinical features
- Management
- Acute arterial occlusion
- Popliteal aneurysm
- Frost bite
- Fat embolism
- Fontaine classification

- Collateral circulation
- Clinical examination
- Differential diagnosis
- Critical limb ischaemia
- Ainhum
- Reperfusion injuries
- Air embolism
- What is new? / Recent advances

8 Upper Limb Ischaemia and Gangrene

- Raynaud's disease
- Axillary vein thrombosis
- Gangrene
- Acrocyanosis
- Subclavian steal syndrome

- Thoracic outlet syndrome
- Vasculitis syndrome
- Cancrum oris
- Drug abuse and gangrene
- What is new? / Recent advances

9 Lymphatics, Lymph Vessels and Lymphoma

- Lymphoedema—anatomy and physiology
- Primary lymphoedema
- Lymphangiography
- Non-Hodgkin's lymphoma
- Sezary's syndrome
- Immunohistochemistry

- Lymphatic circulation
- Secondary lymphoedema
- Hodgkin's lymphoma
- Burkitt's lymphoma
- Chyluria
- What is new?/Recent advances

10 Varicose Veins and Deep Vein Thrombosis

- Primary varicose veins
- Anatomy of venous system of legs
- Long saphenous varicosity
- Complications
- Deep vein thrombosis
- What is new? / Recent advances

- Secondary varicose veins
- Clinical examination
- Treatment
- Short saphenous varicosity
- Pulmonary thromboembolism

11 Skin Tumours

- Classification
- Basal cell carcinoma
- Melanocytic tumours
- Other malignant skin tumours
- What is new? / Recent advances

- Premalignant lesions
- Squamous cell carcinoma
- Malignant melanoma
- Other skin lesions

12 Haemorrhage, Shock and Blood Transfusion

- Haemorrhage
- Acute adrenal insufficiency
- Central venous pressure
- Blood transfusion
- Plasma substitutes

- Shock
- Hyperbaric oxygen
- Pulmonary capillary wedge pressure
- Blood products
- Bleeding disorders

13 Burns, Skin Grafting and Flaps

150

- Burns
- Flaps
- Chemical burns
- Skin grafting
- Electrical burns
- What is new? / Recent advances

14 Acid-Base Balance

158

- Basic definitions
- Regulation of acid-base balance
- Rapid interpretation of an ABG report
- Henderson-Hasselbach equation
- Acid-base disorders

15 Fluids, Electrolytes and Nutrition

164

- Normal physiology
- Disturbances of volume
- Disturbances in concentration
- Clinical notes
- Special purpose solutions
- Water regulation
- Regulation of sodium concentration
- Disturbances in composition of body fluids
- Perioperative fluid therapy
- Nutrition

16 Tumours, Cysts and Neck Swellings

176

- Benign tumours
- Paraneoplastic syndromes
- Cystic swellings
- Swellings in the submandibular triangle
- Swellings in the posterior triangle
- Secondaries in the neck
- Pancoast's tumour
- Malignant tumours
- Soft tissue sarcoma
- Differential diagnosis of midline swellings
- Swellings in the carotid triangle
- AV fistula
- Different types of neck dissections
- What is new? / Recent advances

17 Oral Cavity, Odontomes, Lip and Palate

234

- Oral cancer
- General principles
- Carcinoma of tongue
- Carcinoma of the lip
- Nasopharynx cancer
- Odontomes, epulis
- Vincent's angina
- Ectopic salivary gland tumour
- What is new? / Recent advances
- Premalignant conditions
- Carcinoma of buccal mucosa
- Ulcers of the tongue
- Carcinoma maxillary antrum
- Benign lesions in the oral cavity
- Median mental sinus
- Cleft lip and cleft palate
- Mucous cysts

18 Salivary Glands

261

- Surgical anatomy
- Submandibular sialoadenitis
- Summary of malignant tumours
- Sjögren's syndrome
- Parotid fistula
- Peripheral nerve repair and transfers
- Acute parotitis
- Salivary gland tumours
- Frey's syndrome
- Mikulicz disease
- Surgery for facial nerve palsy
- What is new?/Recent advances

19 The Thyroid Gland

276

- Surgical anatomy
- Thyroid function tests
- Physiology
- Clinical examination



xx

Manipal Manual of Surgery

- Goitre
- Retrosternal goitre
- Malignant tumours
- Thyroiditis
- Complications of thyroidectomy
- Multinodular goitre
- Graves' disease
- Solitary nodule
- Lingual thyroid
- Ectopic thyroid

20 Parathyroid and Adrenals

314

- Surgical anatomy
- Physiology—action of PTH
- Hyperparathyroidism
- Acute hypercalcaemic crisis
- Disorders of adrenal cortex
- Pheochromocytoma
- Congenital anomaly
- Tetany
- Clinical notes
- Adrenal glands—anatomy, physiology
- Neuroblastoma
- Incidentaloma
- What is new?/Recent advances

21 Breast

326

- Congenital anomalies
- Cystic swellings of breast—classification
- Antiboma
- Phylloides tumour
- Aberrations of normal development and involution
- Duct ectasia—plasma cell mastitis
- Duct papilloma
- Galactorrhoea
- Effects of lymphatic obstruction from ca breast
- Carcinoma male breast
- Prophylactic mastectomy
- Mondor's disease
- Surgical anatomy
- Acute bacterial mastitis
- Retromammary abscess
- Intracystic carcinoma of breast
- Fibroadenoma
- Macrocysts
- Galactocoele
- Carcinoma of the breast
- Breast reconstruction
- Sentinel node biopsy
- Angiosarcoma breast
- Modified Van Nuys prognostic index
- What is new?/Recent advances

GASTROINTESTINAL SURGERY**22 Oesophagus and Diaphragm**

365

- Surgical anatomy
- GORD
- Achalasia cardia
- Stricture
- Diverticulum
- Surgical anatomy of the diaphragm
- Tracheo-oesophageal fistula
- Physiology
- Motility disorders
- Carcinoma
- Perforation
- Dysphagia
- Diaphragmatic hernia
- Nutcracker oesophagus

23 Stomach and Duodenum

389

- Surgical anatomy
- Gastritis
- Acute complications of peptic ulcer
- Carcinoma stomach
- Gastric lymphoma
- Acid function tests
- Volvulus of stomach
- Idiopathic hypertrophic pyloric stenosis
- Duodenal anatomy and obstruction
- *H. pylori* infection
- Peptic ulcer disease
- Chronic complications of peptic ulcer
- Gastrointestinal stromal tumours (GIST)
- Complications of gastric operations
- Acute dilatation of stomach
- Bezoars
- Chronic duodenal ileus
- Gastric surgery for morbid obesity
- What is new? / Recent advances

24 Liver

438

- Surgical anatomy
- Pyogenic abscess
- Hydatid cyst
- Benign tumours
- Secondaries in the liver
- Ascites in portal hypertension
- Role of octreotide in surgery
- Haemobilia
- Physiology
- Amoebic abscess
- Other cystic diseases
- Hepatoma
- Portal hypertension
- Budd-Chiari syndrome
- Liver transplantation
- What is new? / Recent advances

25 Gall bladder and Pancreas

465

- Surgical anatomy
- Congenital anomalies
- Chronic cholecystitis
- Stricture CBD
- Choledochal cyst
- Chronic pancreatitis
- Congenital biliary atresia
- Carcinoma pancreas
- Acute pancreatitis
- Annular pancreas
- Cystic fibrosis
- Pancreatic fistula
- Pancreatic ascites
- Percutaneous cholecystostomy
- Bile
- Acute cholecystitis
- Obstructive jaundice
- Sclerosing cholangitis
- Caroli's disease
- Cholangiocarcinoma
- Carcinoma gall bladder
- Endocrine tumours
- Pseudocyst
- Ectopic pancreas
- Pancreatic divisum
- White bile
- Islet cell transplantation
- What is new? / Recent advances

26 Spleen

518

- Surgical anatomy
- Congenital abnormalities
- Purpura
- Thalassemia
- Splenectomy—indications, benefits
- Hairy cell leukaemia
- Interesting 'most common'
- Functions of the spleen
- Rupture
- Hereditary spherocytosis
- Sickle cell anaemia
- Splenic artery aneurysm
- OPSI
- What is new? / Recent advances

27 Peritoneum, Peritoneal Cavity, Mesentery and Retroperitoneum

531

- Peritoneum
- Subphrenic abscess
- Special types of peritonitis
- Omentum
- Retroperitoneum
- Retroperitoneal cyst, abscess, tumour
- Acute peritonitis
- Laparostomy
- Abdominal compartment syndrome
- Mesenteric cyst
- Retroperitoneal fibrosis
- What is new? / Recent advances

28 Small Intestine

551

- Anatomy
- Abdominal tuberculosis
- Glandular tuberculosis
- Inflammatory bowel diseases
- Surgical complications of enteric fever
- Peutz-Jegher syndrome
- GIST
- Diverticula
- Physiology
- Tuberculous peritonitis
- Intestinal tuberculosis
- Ulcerative colitis, Crohn's disease
- Intestinal amoebiasis
- Carcinoid tumour
- Short gut syndrome
- Intestinal fistula
- What is new?/Recent advances


xxii Manipal Manual of Surgery

29 Large Intestine

577

- Surgical anatomy
- Hereditary nonpolyposis
- Familial polyposis coli
- Carcinoma
- Diverticular disease
- Faecal fistula
- Function
- Colorectal cancer
- Tumours
- Colon screening
- Colonic stricture
- What is new?/Recent advances

30 Intestinal Obstruction

596

- Intestinal obstruction
- Meckel's diverticulum
- Gall stone ileus
- Food bolus obstruction
- Hirschsprung's disease
- Volvulus neonatorum
- Paralytic ileus, Colonic pseudo-obstruction
- Sigmoid volvulus
- Adhesions and bands
- Intussusception
- Mesenteric ischaemia
- Atresia and stenosis
- Imperforate anus
- Malrotation and midgut volvulus
- What is new? / Recent advances

31 Rectum and Anal Canal

627

- Surgical anatomy
- Prolapse rectum
- Haemorrhoids
- Fistula-in-ano, Fissure-in-ano
- Sacrococcygeal teratoma
- Stricture of anal canal and rectum
- Carcinoma rectum
- Surgical anatomy of anal canal
- Anorectal abscess
- Pilonidal sinus
- Malignant tumours of the anal canal
- Anal incontinence
- What is new?/Recent advances

32 Lower Gastrointestinal Bleeding

657

- Causes
- Investigations
- Haemobilia
- Clinical examination
- Exploratory laparotomy
- Angiodysplasia
- What is new?/Recent advances

33 The Appendix

666

- Surgical anatomy
- Acute appendicitis
- Appendicular mass
- Faecal fistula
- Congenital anomalies
- Differential diagnosis
- Complications
- What is new?/Recent advances

34 Hernia

677

- Anatomy
- Direct hernia
- Complications
- Sliding hernia
- Femoral hernia
- Incisional hernia
- Interparietal hernia
- Obturator hernia
- Perineal hernia
- Indirect hernia
- Clinical examination
- Recurrent hernia
- Special hernias
- Umbilical hernia
- Epigastric hernia
- Spigelian hernia
- Lumbar hernia
- What is new?/Recent advances

35 Umbilicus and Abdominal Wall

703

- Classification of umbilical diseases
- Umbilical fistulae
- Abdominal dehiscence
- Rectus sheath haematoma
- Desmoid tumour
- Umbilical infections
- Umbilical neoplasms
- Divarication of recti
- Meleney's gangrene
- Endometriosis
- What is new?/Recent advances

36 Blunt Abdominal Trauma, War and Blast Injuries, Triage

710

- Liver injuries
- Duodenal injuries
- Renal injuries
- Blast injuries
- Missile wounds of abdomen
- Small bowel injuries
- Pancreatic injuries
- Retroperitoneal injuries
- Warfare injuries
- Triage
- What is new?/Recent advances

37 Abdominal Mass

725

- Clinical examination of abdominal mass
- Mass in the umbilical region
- Mass in the epigastrium
- Mass in the right iliac fossa
- Cystic mass in the abdomen
- Mass in the right hypochondrium
- What is new?/Recent advances

UROLOGY**38 Investigations of the Urinary Tract**

742

- Urine
- Intravenous urogram
- Renal arteriography
- Urethrography
- Computed tomography
- Endoscopy
- Blood
- Retrograde pyelography
- Cystography
- Ultrasonography
- Radioisotope scanning
- What is new?/Recent advances

39 Kidney and Ureter

749

- Surgical anatomy
- Horseshoe kidney
- Ureteric stone
- Renal tuberculosis
- Pyonephrosis
- Dialysis
- Polycystic kidney
- Renal stones
- Hydronephrosis
- Renal tumours
- Perinephric abscess
- Renal transplantation
- What is new? / Recent advances

40 The Urinary Bladder and Urethra

771

- Surgical anatomy
- Vesical calculus
- Ectopia vesicae
- Diverticula
- Physiology
- Carcinoma bladder
- Acute cystitis
- Urinary fistulae

xxiv

Manipal Manual of Surgery

- Schistosoma haematobium
- Rupture bladder
- Stricture urethra
- Retention of urine

- Urinary diversion
- Rupture urethra
- Hypospadias
- Posterior urethral valve
- What is new?/Recent advances

41 Prostate and Seminal Vesicles

787

- Surgical anatomy
- BPH
- Prostatitis

- Structural anatomy
- Carcinoma prostate
- What is new?/Recent advances

42 Penis, Testis and Scrotum

795

- Surgical anatomy of penis
- Paraphimosis
- Peyronie's disease
- Hydrocoele
- Ectopic testis
- Spermatocoele
- Torsion testis
- Fournier's gangrene

- Phimosis
- Carcinoma penis
- Anatomy of the testis
- Undescended testis
- Varicocoele
- Epididymal cyst
- Testicular tumours
- What is new?/Recent advances

43 Differential Diagnosis of Haematuria

814

- Causes
- Haematuria

- Investigations
- History
- What is new? / Recent advances

SPECIALITIES**44 Cardiothoracic Surgery and Abdominal Aortic Aneurysm**

818

- Chest trauma
- Pulmonary injuries
- Myocardial contusion
- Mediastinal emphysema
- Patent ductus arteriosus
- Coronary artery bypass graft
- Abdominal Aortic Aneurysms (AAA)

- Blunt trauma
- Tracheobronchial injuries
- Surgical emphysema
- Congenital heart diseases
- Coarctation of aorta
- Off pump coronary artery bypass
- What is new?/Recent advances

45 Neurosurgery

832

- Classification
- Secondary damage
- Fracture skull
- Pott's puffy tumour
- Hydrocephalus
- Raised intracranial pressure

- Primary lesions
- Extradural haematoma
- CSF rhinorrhoea
- Chronic subdural haematoma
- Brain tumours
- Brainstem death

46 Principles of Radiology

842

- Barium swallow
- Barium meal follow through

- Barium meal
- Barium enema

- Enteroclysis
- Splenoportography
- Computed tomography
- Magnetic resonance imaging
- Myelography
- Virtual colonoscopy

- Angiography
- Sialography
- Ultrasonography
- Peripheral venography
- Interventional radiology
- **BI-RADS** classification system
- What is new?/Recent advances

47 Principles of Clinical Radiation Oncology

852

- Radiation
- Sources and methods
- Clinical uses
- Palliative treatment
- Dose fractionation
- Measurement
- Curative treatment
- Radiotherapy reactions
- What is new?/Recent advances

48 Principles of Anaesthesiology

860

- Preoperative assessment
- Muscle relaxants
- Monitoring
- Regional anaesthesia
- Complications of anaesthesia
- General anaesthetic agents
- Endotracheal intubation
- Local anaesthetic agents
- Pain relief
- Cardiopulmonary resuscitation

49 Nuclear Medicine in Surgery

895

- What is Nuclear Medicine?
- Radionuclide tests of thyroid
- Thyroid cancer
- Meckel's diverticulum
- Gastroesophageal reflux study
- PET scan
- Radionuclides used in thyroid diseases
- Solitary thyroid nodule
- Liver and spleen
- Gastrointestinal bleeding
- Hyperparathyroidism
- Sentinel node imaging
- What is new?/Recent advances

VIVA VOCE EXAMINATION**50 X-rays**

906

- Plain X-rays
- Barium swallow
- T-tube cholangiography
- Aortography
- Barium meal
- Barium enema
- ERCP
- Splenoportography

51 Instruments

914

- Forceps
- Occlusion clamps
- Tracheostomy set
- Catheters
- Retractors
- Dilators
- Rubber tubes
- Sengstaken tube
- What is new?/Recent advances



xxvi

Manipal Manual of Surgery

52 Specimens

925

- TB lymphadenitis
- Carcinoma tongue
- Linitis plastica
- Carcinoma rectum
- Carcinoma colon
- Polycystic kidney
- Hydronephrosis
- Seminoma testis
- Hydatid cyst
- Lipoma
- Thyroidectomy
- Hodgkin's lymphoma
- Chronic gastric ulcer
- Intussusception
- Gangrenous appendicitis
- Meckel's diverticulum
- Renal cell carcinoma
- Carcinoma penis
- Cholecystectomy
- Carcinoma breast
- Malignant melanoma
- Wide excision of skin

53 Operative Surgery, Laparoscopic Surgery and Accessories

933

- Appendicectomy
- Partial excision and eversion of sac
- Breast abscess drainage
- Vasectomy
- Suprapubic cystostomy
- Amputation
- Vagotomy GJ
- Colonic surgery
- Accessories
- Herniorrhaphy
- Incision and drainage
- Venesection
- Tracheostomy
- Thyroidectomy
- Open cholecystectomy
- Excision of swelling
- Laparoscopic surgery
- What is new?/Recent advances

Appendix

961

Index

963