

Contents

<i>Forewords</i> by Dr Pravin Suryawanshi, Prof (Dr) D Maruthu Pandian, Dr Santhosh John Abraham and Dr Tejaswini Vallabha	<i>vii</i>
<i>Preface to the Seventh Edition</i>	<i>ix</i>
<i>Preface to the First Edition</i>	<i>x</i>
Competencies	<i>xix</i>

VOLUME 1

SECTION I: BASIC PRINCIPLES OF SURGERY

1. Doctor–Patient Relationship	3	16. Postoperative Complications	56
2. Communication and Counselling	6	□ Postoperative fever 56	
3. Ethics in General Surgery	10	□ Postoperative jaundice 58	
4. Surgical Audit	14	□ Postoperative hypoxia and desaturation 60	
5. Principles and Steps of Clinical Research in General Surgery	16	□ Perioperative acute kidney injury 61	
6. Perioperative Care	19	17. Shock and Haemorrhage	64
7. Pain Management	22	□ Haemorrhage 65	
8. Biohazard Disposal/Biomedical Waste Management	27	□ Indicators of fluid responsiveness 73	
9. Investigation and Interpretation	30	18. Blood Transfusion	77
10. Asepsis, Sterilization and Disinfection	34	□ Complications of blood transfusion 79	
11. Nutrition in Surgical Patients	38	□ Autologous transfusion 80	
□ Perioperative nutritional support 40		□ Hyperbaric oxygen 81	
□ Route of administration of nutrition 40		19. Acid–Base Balance	83
12. Prophylactic and Therapeutic Antibiotics in Surgery	44	□ Basic definitions 83	
13. Day Case/Care Surgery	47	□ The Henderson and Henderson-Hasselbalch equations 83	
14. Principles of Safe General Surgery	50	□ Regulation of acid–base balance 84	
15. Metabolic Response to Injury	52	□ Acid–base disorders 84	
		□ Rapid interpretation of an ABG report 87	
		20. Fluids and Electrolytes	90
		□ Normal physiology 91	
		□ Water regulation (regulation of volume) 91	
		□ Disturbances of volume 91	
		□ Regulation of sodium concentration 92	
		□ Disturbances in concentration 92	
		□ Disturbances in composition of body fluids 94	
		□ Perioperative fluid therapy 97	

SECTION II: GENERAL SURGERY

21. Wound, Keloid and Hypertrophic Scar	103	23. Tetanus and Gas Gangrene	128
□ Compartment syndrome 108		□ Tetanus 128	
□ Hypertrophic scar and keloid 109		□ Gas gangrene 130	
22. Acute Infections, and Surgical Site Infections	113	24. Hand and Foot Infections	135
Transmissible Viral Infections		□ Superficial infections 135	
□ Abscess 115		□ Deep infections 137	
□ Ludwig angina 118		□ Foot infections 141	
□ Vincent's angina 119		25. Chronic Infectious Disease and Tendon Transfer	144
□ Other special types of pyogenic infections 118		□ Actinomycosis 144	
□ Surgical site infections (SSIs) 122		□ Leprosy (Hansen's disease) 146	
□ Transmissible viral infections 124		□ Tendon transfer 148	

26. Differential Diagnosis of Leg Ulcer and Pressure Sore		34. Cystic Swellings, Neck Swellings and Metastasis Lymph Node Neck	298
□ Clinical examination of an ulcer 152 □ Management of ulcer 154 □ Traumatic ulcer 156 □ Venous ulcer 156 □ Arterial/ischaemic ulcer 156 □ Neurogenic ulcer, neuropathic ulcer, trophic ulcer 157 □ Tropical ulcer 157 □ Post-thrombotic ulcer 158 □ Rare ulcers 158 □ Diabetic foot 158 □ Pressure sores 166		□ Cystic swellings 298 □ Transilluminant swellings in the body 306 □ Differential diagnosis of midline swellings in the neck 310 □ Swellings in submandibular triangle 315 □ Differential diagnosis of swellings in the carotid triangle 315 □ Differential diagnosis of swellings in the posterior triangle 321 □ Congenital arteriovenous (AV) fistula (arterial haemangioma) 324 □ Lymph nodes secondaries (metastasis) in the head and neck 326 □ Neck dissections 330 □ Metastasis in cervical lymph nodes—various levels 330 □ Investigation and management of the unknown primary with metastasis in the neck 333 □ Pancoast's tumour 335	
27. Lower Limb Ischaemia and Popliteal Aneurysm	170	35. Oral Cavity, Odontomes, Lip and Palate	337
□ Acute arterial occlusion 176 □ Peripheral aneurysms 187		□ Oral cancer 337 □ Carcinoma of buccal mucosa 343 □ Carcinoma of tongue 346 □ Carcinoma of lip 350 □ Carcinoma maxillary antrum 353 □ Benign lesions in the oral cavity 354 □ Odontomes 355 □ Median mental sinus 358 □ Cleft lip and cleft palate 359 □ Miscellaneous 361 □ Mucous cysts 361	
28. Upper Limb Ischaemia and Gangrene	190	36. Salivary Glands	365
□ Thoracic outlet syndrome 192 □ Axillary vein thrombosis 197 □ Vasculitis syndromes 197 □ Gangrene 198 □ Various types of gangrene 199 □ Drug abuse and gangrene 200		□ Surgical anatomy of the parotid gland 365 □ Acute parotitis 366 □ Surgical anatomy of the submandibular salivary gland 367 □ Chronic submandibular sialoadenitis 368 □ Salivary gland tumours 370 □ Pleomorphic adenoma of parotid gland (mixed tumour) 370 □ Adenolymphoma (Warthin's tumour, papillary cystadenoma lymphomatosum) 374 □ Mucoepidermoid tumour 374 □ Other tumours 375 □ Minor salivary gland tumour 375 □ Malignant parotid tumours 376 □ Postoperative complications 377 □ Peripheral nerve repair and transfers 378 □ Rare causes of salivary gland enlargement 379	
29. Lymphatics, Lymphoedema, Tuberculous Lymphadenitis and Lymphoma	202	37. Thyroid Gland	383
□ Lymphoedema 202 □ Primary (congenital) lymphoedema 203 □ Secondary lymphoedema (acquired) 204 □ Cervical tuberculous lymphadenitis 210 □ Hodgkin's lymphoma (HL) 215 □ Non-Hodgkin's lymphoma (NHL) 218 □ Burkitt's lymphoma (small noncleaved lymphoma) 220 □ Sézary's syndrome 220 □ Chyluria 220		□ Surgical anatomy of thyroid gland 383 □ Physiology 386 □ Thyroid function tests 386 □ Clinical examination of thyroid swelling 387 □ Goitre 390 □ Multinodular goitre 391 □ Retrosternal goitre 394 □ Toxic goitre—thyrotoxicosis 396 □ Graves' disease 396 □ Malignant tumours 403 □ Well-differentiated carcinoma 403 □ Anaplastic carcinoma 412 □ Medullary carcinoma of the thyroid (MCT) 413	
30. Varicose Veins and Deep Vein Thrombosis	223		
□ Deep vein thrombosis (DVT) 236			
31. Skin Tumours	240		
□ Premalignant lesions of the skin and risk factors 240 □ Squamous cell carcinoma (SCC)/epithelioma 246 □ Melanocytic tumours 250 □ Malignant melanoma (melanocarcinoma) 250 □ Staged treatment (more details) and recent advances 258 □ Other malignant skin tumours 262			
32. Burns and Skin Grafting	268		
□ Free skin grafting 274			
33. Tumours and Soft Tissue Sarcoma	279		
□ Benign tumours 279 □ Neural tumours 283 □ Malignant tumours 286 □ Paraneoplastic syndromes (PNS) 287 □ Soft tissue sarcomas (STs) 288 □ Differential diagnosis of soft tissue sarcoma 292 □ Useful tips in a case of soft tissue sarcoma 296			

- Solitary nodule of the thyroid gland 415
- Thyroiditis 418
- Complications of thyroidectomy 419
- Miscellaneous 421
- Ectopic thyroid 422

38. Parathyroid and Adrenals 426

- Parathyroid glands 426
- Hyperparathyroidism 428
- Adrenal glands/suprarenal glands 434
- Disorders of adrenal cortex 435
- Tumours of the adrenal gland 436
- Incidentalomas 436

39. Breast 443

- Congenital anomalies of breast 443
- Surgical anatomy of breast 444
- Cystic swellings of breast 446
- Acute bacterial mastitis (breast abscess—pyogenic mastitis) 447
- Other types of breast abscesses 448

- Aberrations of normal development and involution of the breast 449
- Cyclical mastalgia with nodularity 451
- Idiopathic granulomatous mastitis (IGM) 455
- Macrocysts 455
- Galactoceles 456
- Discharge per nipple 456
- Duct papilloma 456
- Galactorrhoea 457
- Axillary tail hypertrophy 457
- Traumatic fat necrosis 457
- Gynaecomastia 457
- Phyllodes tumours 458
- Carcinoma breast 459
- Angiosarcoma of the breast 484
- Breast reconstruction 485
- Male breast carcinoma 488
- Mondor's disease 489
- Disorders of augmented breast 489
- Rare breast cancers 489
- Oncoplastic breast conservation surgery 490

SECTION III: UROLOGY

40. Investigations of the Urinary Tract 495

- Urine examination 495
- Blood tests 496
- X-ray KUB (kidney, ureter, bladder) 496
- Imaging 496
- Renal arteriography: Angiography 498
- Micturating cystourethrography (MCU) 499
- Computerised tomography (CT) scanning 500
- Endoscopy 501

41. Congenital Anomalies of the Genitourinary Tract 504

- Development of genitourinary tract 504
- Polycystic kidneys 505
- Horseshoe kidney 507
- Congenital hydronephrosis 508
- Anomalies in the urinary bladder and urethra 508
- Anomalies of the urethra 509
- Anomalies of the testis 511
- Ectopic testis 512

42. Kidney and Ureter 513

- Surgical anatomy of kidney 513
- Renal stones 514
- Ureteric stone 518
- Hydronephrosis 519
- Renal tuberculosis (TB) 523
- Renal neoplasms 525
- Wilms' tumour (nephroblastoma) 525
- Renal cell carcinoma (RCC) 527
- Renal mass in the surgical ward 531

43. Urinary Bladder and Urethra 535

- Surgical anatomy of the bladder 535
- Vesical calculus 536
- Carcinoma of the bladder 537
- Rupture of the urinary bladder 540

- Surgical anatomy of the urethra 540
- Rupture urethra 541
- Stricture urethra 543
- Differential diagnosis of urinary retention 544
- Interstitial cystitis 545
- Schistosoma haematobium 545
- Urinary diversion 545

44. Prostate and Seminal Vesicles 548

- Surgical anatomy 548
- Benign prostatic hyperplasia (BPH) 549
- Carcinoma of the prostate 551
- Prostatitis 555

45. Penis, Testis and Scrotum 558

- Surgical anatomy of the penis 558
- Phimosis 558
- Paraphimosis 559
- Carcinoma penis 559
- Peyronie's disease (penile fibromatosis) 563
- Differential diagnosis of ulcer penis 564
- Anatomy of the testis and epididymis 564
- Hydrocoele 565
- Cystic swellings in the scrotum 568
- Varicocele 569
- Torsion testis (torsion of the spermatic cord) 570
- Testicular tumours 570
- Interstitial cell tumours 574
- Fournier's gangrene (idiopathic gangrene of the scrotal skin) 574

46. Haematuria and Urinary Tract Infections 578

- History and examination 578
- Investigations 579
- Haematuria 581
- Urinary tract infections 581

SECTION IV: SPECIALITIES

47. Chest Trauma and Cardiothoracic Surgery	589	□ Chest trauma 589 □ Blunt trauma to the chest 590 □ Pulmonary injuries 591 □ Injury to trachea and major bronchi 595 □ Injury to the diaphragm 595 □ Injury to the aorta (rupture of the aorta) 595 □ Myocardial contusion 596 □ Surgical emphysema 596 □ Penetrating thoracic wounds 597 □ Mediastinal emphysema 597 □ Empyema 598 □ Bronchopleural fistula 599 □ Surgical anatomy of mediastinum and mediastinal masses 600 □ Anterior mediastinal masses 600 □ Middle mediastinal masses 602 □ Posterior mediastinal masses 602 □ Pulmonary aspergilloma 603 □ Bronchogenic carcinoma 603 □ Congenital heart diseases 606 □ Coronary artery bypass surgery 609 □ Off pump coronary artery bypass surgery 611
48. Neurosurgery	613	□ Pathophysiology and mechanism of head injuries 613 □ Intracranial haematoma 615 □ Chronic subdural haematoma 617 □ Raised intracranial pressure 618 □ Fracture skull 618
49. Principles of Anaesthesiology	622	□ CSF rhinorrhoea 618 □ Pott's puffy tumour 619 □ Trigeminal neuralgia 619 □ Brainstem death 619 □ Types of anaesthesia 622 □ Preoperative assessment and premedication 623 □ Airway management 625 □ Monitoring in anaesthesia 629 □ Local anaesthetics 630 □ Spinal and epidural anaesthesia 632 □ Other regional techniques 636 □ Complications of anaesthesia 637 □ General anaesthetic agents 639 □ Intravenous anaesthetic agents 641 □ Physiology of neuromuscular junction 643 □ Muscle relaxants 643
50. Organ Transplantation	647	□ Principles of transplantation 647 □ Liver transplantation 648 □ Renal transplantation 650 □ Medicolegal aspects of organ donation 652
51. Principles of Clinical Radiation Oncology and Chemotherapy	654	□ Radiation 654 □ Radiotherapy—sources and methods of delivery 655 □ Source of radiation 655 □ Oncology: Concise concepts of chemotherapy 662

VOLUME 2

SECTION V: GASTROINTESTINAL SURGERY

52. Oesophagus and Diaphragm	673	□ Gastro-oesophageal reflux disease 676 □ Barrett's oesophagus 682 □ Motility disorders of the pharynx and oesophagus 683 □ Carcinoma of the oesophagus 687 □ Transhiatal oesophagectomy (THE)—without thoracotomy—Orringer 695 □ Corrosive oesophageal stricture 697 □ Oesophageal perforations 699 □ Tracheo-oesophageal fistula 704
53. Stomach and Duodenum	707	□ Surgical anatomy 707 □ Gastric physiology 710 □ <i>Helicobacter pylori</i> infection 711 □ Gastritis 713 □ Zollinger-Ellison syndrome 714 □ Peptic ulcer disease 715 □ Acute complications of peptic ulcer 722 □ Haemorrhage from peptic ulcer 725 □ Differential diagnosis of haematemesis (upper GI tract bleeding) 727 □ Chronic complications of peptic ulcer 732 □ Carcinoma stomach 734 □ Other tumours of the stomach 746 □ Complications of gastrectomy 750 □ Volvulus of the stomach 753
54. Gallbladder and Pancreas	762	□ Bezoars 753 □ Idiopathic hypertrophic pyloric stenosis (IHPS) 754 □ Chronic duodenal ileus 755 □ Duodenal anatomy and obstruction 756 □ Surgical anatomy of the gallbladder and bile ducts 762 □ Physiology 763 □ Congenital anomalies of gallbladder 764 □ Bilirubin metabolism 764 □ Gallstone disease (cholelithiasis) 765 □ Acute cholecystitis 768 □ Chronic cholecystitis 772 □ Obstructive jaundice (surgical jaundice) 778 □ Other causes of obstructive jaundice 789 □ Chronic pancreatitis 794 □ Carcinoma of pancreas 801 □ Endocrine tumours of the pancreas 805 □ Acute pancreatitis 807 □ Pseudocyst of pancreas 818 □ Congenital anomalies of the pancreas 821 □ Miscellaneous 823
55. Liver	827	□ Pyogenic liver abscess 828 □ Amoebic liver abscess 830 □ Hydatid cyst of the liver 833 □ Other cystic disease 837

□ Benign tumours of the liver 837 □ Primary liver cancer—hepatoma or hepatocellular carcinoma (HCC) 638 □ Liver resections 845		□ Haemorrhoids (piles) 1033 □ Stapler haemorrhoidopexy 1038 □ Anorectal abscess 1038 □ Fistula <i>in ano</i> 1040 □ Fissure <i>in ano</i> 1043 □ Pilonidal sinus (jeep-bottom) 1045 □ Sacrococcygeal teratoma 1046 □ Malignant tumours of anal canal 1047 □ Stricture of anal canal and rectum 1048 □ Proctalgia fugax 1048 □ Pruritus ani 1048 □ Hidradenitis suppurativa 1049	
56. Spleen	849	62. Lower Gastrointestinal Bleeding	1052
□ Surgical anatomy 849 □ Functions of the spleen 850 □ Congenital abnormalities 851 □ Rupture of the spleen 851 □ Haematological indications for splenectomy 856 □ Splenectomy for other conditions 860 □ OPSI 863		63. Appendix	1064
57. Peritoneum, Peritoneal Cavity, Mesentery and Retroperitoneum	866	□ Development and anomalies 1064 □ Surgical anatomy of the appendix 1065 □ Acute appendicitis 1066 □ Scoring system 1070 □ Differential diagnosis of acute appendicitis 1074 □ Neoplasm of the appendix 1078 □ Mucocoele of the appendix 1078	
□ Peritoneum 866 □ Intra-abdominal sepsis 867 □ Abdominal compartment syndrome 877 □ Complications of peritonitis 879 □ Special types of peritonitis 883 □ Tumours of the peritoneum 888 □ Mesentery 890 □ Retroperitoneum 891 □ Retroperitoneal abscess 892		64. Hernia	1083
58. Small Intestine	900	□ Anatomy of the inguinal region 1083 □ Inguinal defence mechanisms 1085 □ Aetiology of hernia: What causes hernia? 1085 □ Classification of hernia 1085 □ Indirect hernia 1086 □ Direct hernia 1087 □ Clinical examination of a case of hernia 1088 □ Complications of hernia 1095 □ Recurrent hernia 1097 □ Special hernias 1098 □ Femoral hernia 1101 □ Ventral hernia 1103 □ Incisional hernia 1107 □ Management of massive abdominal wall hernias 1111 □ Epigastric hernia 1113 □ Rare external hernias 1113	
□ Abdominal tuberculosis (TB) 903 □ Inflammatory bowel diseases 911 □ Surgical complications of enteric fever 921 □ Small bowel tumours 924 □ Neuroendocrine tumours (NET) 926 □ Short gut syndrome 928 □ Intestinal fistulae 930 □ Small intestinal diverticula 932		65. Umbilicus, Wound Dehiscence, Wound Closure and Abdominal Wall Swellings	1120
59. Large Intestine (Colon)	937	□ Classification of umbilical diseases 1121 □ Umbilical inflammation 1121 □ Umbilical fistulae 1121 □ Umbilical neoplasms 1122 □ Umbilical hernia 1122 □ Abdominal wall 1122 □ Burst abdomen: Abdominal dehiscence 1123 □ Fibromatoses: Desmoid tumour 1126 □ Divarication of recti 1127 □ Endometriosis of the abdominal wall 1127 □ Miscellaneous 1127	
□ Surgical anatomy 937 □ Colectomy 940 □ Colonic function 942 □ Examination of colon 943 □ Tumours of the large intestine 944 □ Carcinoma colon 947 □ Surgeries in a case of carcinoma colon 958 □ Colon screening 960 □ Diverticular disease of colon 960 □ Miscellaneous 964		66. Trauma—Initial Management, Blunt Abdominal Trauma, War and Blast Injuries and Triage	1129
60. Intestinal Obstruction	968	□ Initial management of trauma victims 1129 □ Blast injuries 1135 □ Warfare injuries 1135 □ Missile wounds of abdomen 1136 □ Gunshot wounds 1136 □ Blunt abdominal trauma 1138 □ Vascular trauma 1152	
□ Causes of intestinal obstruction as per age 978 □ Differential diagnosis of intestinal obstruction 978 □ Mesenteric vascular occlusion 991 □ Neonatal intestinal obstruction 996 □ Anorectal anomalies 1001 □ Paralytic ileus (neurogenic ileus) 1002 □ Intestinal obstruction—special causes 1004 □ Malrotation and midgut volvulus 1006			
61. Rectum and Anal Canal	1010		
□ Surgical anatomy of the rectum 1010 □ Surgical anatomy of anal canal 1012 □ Carcinoma rectum 1015 □ Colostomy 1025 □ Anorectal physiology 1028 □ Anal incontinence 1028 □ Prolapse rectum 1029			

SECTION VI: VIVA VOCE EXAMINATION

67. Principles of Radiology and Imaging**1157**

- Plain X-rays 1157
- Barium studies 1161
- Angiography 1166
- Ultrasonography 1168
- Computed tomography (CT) 1169
- Virtual colonoscopy 1170
- Cholangiogram/ERCP/MRCP 1172
- Magnetic resonance imaging (MRI) 1173
- Positron emission tomography (PET scan) 1175
- Interventional radiology 1176

68. Instruments, Sutures, Needles, Skin and Anastomosis**1179**

- Needle and sutures 1191
- Suture materials 1192
- Skin closure techniques 1194
- Intestinal resection and anastomosis 1195

69. Specimens**1199****70. Operative Surgery, Laparoscopic Surgery and Accessories****1208**

- History of surgery 1208
- Operative surgery 1209
- Excision of swellings 1209
- Surgery for hydrocoele 1211

- Incision and drainage (I and D) 1213
- Circumcision 1215
- Venesection or cut down 1215
- Vasectomy 1216
- Tracheostomy 1217
- Thyroidectomy 1218
- Amputations 1221
- Amputations in leg 1221
- Upper limb amputations 1224
- Abdominal incisions 1225
- Appendicectomy 1225
- Bassini's herniorrhaphy 1228
- Open cholecystectomy 1232
- Vagotomy gastrojejunostomy (GJ) 1233
- Staplers in surgery 1234
- Laparoscopic surgery 1235
- Hernia repair: TAPP (transabdominal preperitoneal mesh repair) 1239
- SILS (LESS) 1240
- Natural orifice transluminal endoscopic surgery (NOTES) 1241
- VAAFT technique 1241
- Robotic surgery 1242
- Energy sources in surgery 1243
- Harmonic scalpel 1244