

Topographical Anatomy and Operative Surgery

Tsyhykalo O. V.

**TOPOGRAPHICAL ANATOMY
AND OPERATIVE SURGERY**

TEXTBOOK FOR ENGLISH-SPEAKING FOREIGN STUDENTS

3rd edition

Vinnytsia
Nova Knyha
2018

*Рекомендовано Міністерством охорони здоров'я України
як підручник для студентів вищих медичних навчальних закладів IV рівня акредитації,
які опановують навчальну дисципліну англійською мовою (протокол № 2 від 12.10.2009 року)*

*Рекомендовано вченою радою вищого державного навчального закладу України
“Буковинський державний медичний університет” як підручник для студентів вищих медичних
навчальних закладів (протокол № 8 від 26 квітня 2018 року)*

Reviewers:

- Koval's'kyi M. P.**, MD, Professor, Head of the Topographic Anatomy and Operative Surgery Department of the National O. O. Bohomolets Medical University;
Chornokul's'kyi S. T., MD, Professor of Human Anatomy Department of the National O. O. Bohomolets Medical University;
Hnatiuk M. S., MD, Professor of the Topographic Anatomy and Operative Surgery Department of the I. Ya. Horbachevskiy Ternopil' State Medical University.
Pivtorak V. I., MD, Professor, Head of the Topographic Anatomy and Operative Surgery Department of the National Pirogov Memorial Medical University.

Tsyhykalo O. V.

Т58 Topographical Anatomy and Operative Surgery = Топографічна анатомія та оперативна хірургія : textbook for English-speaking foreign students / Tsyhykalo O. V. – 3rd ed. – Vinnytsia : Nova Knyha, 2018. – 528 p. : il.

ISBN 978-966-382-699-8

The textbook compiled in accordance with the Program of the educational subject “Topographic Anatomy and Operative Surgery” for higher medical educational institutions of the III–IV levels of accreditation of the Ministry of Health of Ukraine.

The textbook presents up-to-date data in Topographic Anatomy and Operative Surgery of the regions of head, neck, thorax, abdomen, pelvis, spine and limbs. The topographic specific characteristics of organs and anatomical structures have been ascertained and they should be taken into account in the process of performing diagnostic and treatment procedures. A technique of principal surgical operations with due regard for the history and the modern state of the medical science is adduced in detail.

For medical students, internship doctors, residents.

Підручник підготовлений відповідно до Програми навчальної дисципліни “Топографічна анатомія та оперативна хірургія” для вищих медичних закладів освіти III–IV рівнів акредитації МОЗ України.

У підручнику викладено сучасні дані з топографічної анатомії та оперативної хірургії ділянок та органів голови, шиї, грудей, живота, поперекової ділянки, таза, хребта та кінцівок. Визначено топографічні особливості органів та анатомічні структури, які слід враховувати при виконанні діагностичних та лікувальних процедур. Детально подано техніки основних хірургічних операцій з урахуванням історичних даних та сучасного стану медичної науки.

Для студентів, лікарів-інтернів, клінічних ординаторів.

УДК 611.9:616-089(075.8)

Навчальне видання

Цигикало Олександр Віталійович

Топографічна анатомія та оперативна хірургія

Підручник для іноземних англомовних студентів (англ. мовою)

Фото на обкладинку запозичене з колекції відомого німецького анатома Х. фон Хагенса

Редактор *Марчук О. В.*

Коректор *Шутова Л. Я.*

Комп'ютерна верстка: *Мацяка Д. Г.*

Підписано до друку 24.04.18. Формат 60×84/8. Папір офсетний.
Гарнітура Таймс. Друк офсетний. Ум. друк. арк. 61,6. Зам. № 979.

ПП “Нова Книга”

21029, м. Вінниця, вул. М. Ващука, 20

Свідцтво про внесення суб'єкта видавничої справи до Державного реєстру видавців,

виготівників і розповсюджувачів видавничої продукції

ДК № 2646 від 11.10.2006 р.

Тел. (0432) 56-01-87. Факс 56-01-88

E-mail: info@novaknyha.com.ua

www.novaknyha.com.ua

© Tsyhykalo O. V., 2011

© Tsyhykalo O. V., 2018

© Nova Knyha, 2018

Contents

Chapter I.

GENERAL PROBLEMS OF TOPOGRAPHICAL ANATOMY AND OPERATIVE SURGERY	8
Medical and Anatomical Terminology	9
Directional Terms	10
Classification of Operations	12
Stages of Surgical Operation	13
Surgical Instruments and Rules of Their Use	16
General Principles of Pediatric Anatomy:	24
Types of Suture Material	24
Suturing Apparatus	25
Anesthesia	25
The use of Laser, Ultrasound and Adhesive Agents in Applied Medicine	28
Methods of Temporal and Definitive Haemostasis	29
The Principles of Primary Surgical Treatment of Wound (Initial debridement, Initial Handling)	29
Questions for Self-Control	30

Chapter 2

HEAD	31
Cerebral Part of the Head (the Skull)	31
Temporal Region	36
Mastoid Region	36
Meninges of the Brain	37
The Brain	40
Base of the Skull	43
Operations on the Head	47
Primary Surgical Treatment of cranial wounds	47
Trepanation of the Skull (Craniotomy)	47
Antrotomy (Mastoid Process Trepanation)	49
Suboccipital Puncture	49
Gamma Knife Radiosurgery	49
Facial Part of the Head	49
Buccal Region	49
Parotidomasseter Region	52
The Parotid Gland	53
Profound Facial Region	54
Operative Surgery of the Facial Region	55
The Features of Facial Wounds	55
Soft Tissue Injuries	56
Questions for Self-Control	56

Chapter 3

NECK.....	57
Areas of the Neck	57
Fascias of the Neck	58
Spaces of the Neck	59
Sternocleidomastoid Region	60
Triangles of the Neck	61
Lymphatics and the Right and Left Thoracic Lymphatic Ducts	63
Lymphatic Structures of the Neck	65

Tonsils	65
Pharynx	66
Larynx	70
Trachea	75
Thyroid Gland	75
Parathyroid Glands	78
Cervical Esophagus	78
Operative Surgery of the Neck	79
Incisions in the Neck	79
Cricothyroidotomy	81
Tracheostomy	82
Subtotal Subcapsular Resection of the Thyroid Gland (Strumectomy) according to Nikolayev	86
Primary Surgical Treatment of the Short Wounds of the Neck	86
Opening of Phlegmons of the Neck	87
The Vago-Sympathetic Block by Vishnevskiy	87
Cervical Plexus Block	87
Brachial Plexus Block	87
Ligation of the Common and External Carotid Arteries	87
Ligation of the Lingual Artery	88
Questions for Self-Control	88

Chapter 4

THORAX	89
Structure of the Thoracic Wall	89
The Regions of the Thorax	93
Layers of the Thoracic Wall	93
Superficial Layer of the Thoracic Wall	93
Mammary Gland	93
Medium Layer of the Thoracic Wall	96
Deep Layer of the Thorax	96
Diaphragm	101
The Thoracic Cavity	103
Mediastinum	103
Pleurae	103
Trachea	104
Principal Bronchi	105
Lungs	105
Pericardium	108
Heart	109
Esophagus	117
Thymus	118
Large Arteries of the Thorax	118
Lymph Nodes and Vessels of the Thorax	120
Nerves of the Thorax	121
Operative Surgery of Thorax	124
Operations on the Thoracic Wall	124
Chest Wound	124
Types of Pneumothorax and Techniques of their Treatment	124
Primary Surgical Treatment of the Penetrating Wound of the Thoracic Wall	124
Thoracostomy	125
Thoracotomy	125
Posterolateral Thoracotomy Incision	125
Rib excision	129

Operations on the Mammary Gland	129
Operations on the Lungs	130
Operations on the Heart	131
Suturing of the Heart Wounds	131
Intercostal Nerve block	131
Sternum and Marrow Biopsy	132
Questions for Self-Control	132

Chapter 5

ABDOMEN	133
Abdominal Wall	133
Surface Anatomy and Anatomical Landmark of the Abdominal Wall	134
Regions of the Abdomen	134
Layer-by-layer Structure of the Anterolateral Abdominal Wall	135
Inguinal Region	142
Inguinal Canal	142
Surgical Anatomy of Abdominal Hernia	146
Femoral Hernia	149
Abdominal Viscera	150
Esophagus (Abdominal Portion)	150
Stomach	150
Small Intestine	153
Large Intestine	157
Liver	161
Bile Ducts	165
Gallbladder	166
Pancreas	166
Spleen	169
Retroperitoneal Space	169
Blood supply of the Gastrointestinal Tract	169
Peritoneum and Peritoneal Cavity	173
Operative Surgery of the Abdomen	176
Surgical Incisions in the Anterior Abdominal Wall	176
Pathogenesis of Groin Hernias and Principles of Their Repair	184
Operative treatment of Indirect Inguinal hernia	186
Operative treatment of direct inguinal hernia	198
Repair of Umbilical Hernia	203
Ventral Hernia	207
Operative Surgery of the Stomach	211
Operative surgery of the Bowel	234
Operative surgery of the Large Intestine	241
Appendectomy	245
Operative Surgery of the Liver	249
Surgery of the Biliary Tract	253
Surgery of the Pancreas	261
Splenectomy	261
Questions for Self-Control	266

Chapter 6

LUMBAR REGION	267
Triangles of the Lumbar region	268
Retroperitoneal space	270

Kidneys	271
Ureter	273
Suprarenal Glands	274
The Abdominal Aorta	275
The Inferior Vena Cava	276
Retroperitoneal Lymphatics	277
Retroperitoneal Innervation	278
Operative surgery of the Lumbar region	280
Incisions of the Posterior (Lumbar) Abdominal Wall	280
Operations on the Kidney and Ureter	281
Paraneural Vagosympathetic Block by Vishnevsky	284
Questions for Self-Control	284

Chapter 7

PELVIC AND PERINEUM	285
True (Lesser or Minor) Pelvis	285
False Pelvis	285
Pelvic Viscera	297
Gastrointestinal System	297
The Urinary Organs	303
Male Internal Genital Organs	310
The Female Internal Genital Organs	313
Perineum	321
Operative Surgery of the pelvis and Perineum	329
Emergency ("Blind") Suprapubic Cystostomy, Suprapubic Puncture ("SPP")	330
Emergency Suprapubic Puncture ("SPP")	330
Open Suprapubic Cystostomy (Sectio Alta)	330
Permanent Open Cystostomy	331
Surgical Approaches to the Prostate Gland	331
Drainage of Ischiorectal Abscess	331
Excision of Fistula in Ano	332
Cesarean Section	335
Salpingectomy	337
Orchidopexy	337
Surgical Treatment of Phimosis (Circumcision)	340
Paraphimosis	341
Surgical treatment of Hydrocele	341
Questions for Self-Control	342

Chapter 8

VERTEBRAL COLUMN AND SPINAL CORD	343
Vertebral Column	343
The Spinal Cord and Meninges	353
Structure of Spinal Nerves	354
Topography of Structures in the Vertebral Canal	357
Questions for Self-Control	360

Chapter 9

UPPER EXTREMITIES	361
Shoulder	361
Arm	376
Forearm	386

Hand	397
Region of the Wrist	400
Palm of the Hand	402
The Dorsum of the Hand	411
Questions for Self-Control	412

Chapter 10

LOWER EXTREMITIES	413
The Gluteal Region	413
Thigh	421
Leg	437
Region of the Ankle	443
Foot	444
Sole of the Foot	447
Dorsum of the Foot	452
Operative Surgery of the Upper and Lower Extremities	458
Tying the Arteries	458
Tying the External Carotid Artery	458
Tying the Third part of the Subclavian Artery	458
Tying the Internal Iliac Artery	458
Tying the External Iliac Artery in the Groin	459
Tying the Femoral Artery	459
Tying the Popliteal Artery	459
Incisions for Draining Pus	460
Principles of Amputation	461
Suture of Tendon	463
Questions for Self-Control	466

Operative Surgery and Topographical Anatomy Tests

HEAD AND NECK	467
Questions	467
Answers and Explanations	476
THORAX	480
Questions	480
Answers and Explanations	485
ABDOMEN	487
Questions	487
Answers and Explanations	493
PELVIS AND PERINEUM	496
Questions	496
Answers and Explanations	502
VERTEBRAL COLUMN AND SPINAL CORD	505
Questions	505
Answers and Explanations	508
UPPER LIMB	509
Questions	509
Answers and Explanations	514
LOWER LIMB	518
Questions	518
Answers and Explanations	524
References	527

ridmi
ТВІЙ УЛЮБЛЕНИЙ КНИЖКОВИЙ

КУПИТИ