DESCRIPTION OF COURSE UNIT FOR DOCTORAL STUDIES AT VILNIUS UNIVERSITY

Scientific Area/eas, Field/ds of Science	Medical and Health Science (M 000): Medicine (M 001)			
Faculty, Institute, Department/Clinic	Faculty of Medicine Institute of Clinical Medicine, Clinic of Rheumatology, Orthopaedics Traumatology and Reconstructive Surgery			
Course unit title (ECTS credits, hours)	**Peripheral Nerve Surgery** 8 credits (216 hours)			
Study method	**Lectures**	**Seminars**	**Consultations**	**Self-study**
Number of ECTS credits	-	-	2	6
Method of the assessment (in 10 point system)	Exam. Oral examination. 3 questions.			

PURPOSE OF THE COURSE UNIT

To provide a deeper knowledge of anatomical etiopathogenesis, diagnostic and treatment peculiarities of congenital and acquired lessions (compression neurophaties, trauma, tumours, etc.) of upper and lower extremity peripheral nerves. To provide deeper knowledge about the physiology of peripheral nerve regeneration, principles of surgery planning, preoperative patient evaluation, basic methods of surgical treatment, surgical technique, prevention of diagnostic and surgical technique errors (iatrogenic lesions), principles of rehabilitation after peripheral nerve surgery.

THE MAIN TOPICS OF COURSE UNIT

Development and history of peripheral nerve surgery. Structure and physiology of peripheral nerves. Degrees of nerve damage. Nerve healing. Peculiarities of nerve regeneration, its determining factors. Influence of age on regeneration. Intraneural topography and fiber orientation. Peripheral nerve functions, evaluation scales. Sensory types and receptors, evaluation tests. Sensory re-education. Evaluation of motor recovery. Vegetative functions of peripheral nerves. Peripheral nerve pathology groups, surgery types. Compressive neuropathies, tunnel syndromes. Principles of diagnostics. Distribution of sensory and motor functions between the median and ulnar nerves. Main functions and topographic anatomy of the median nerve. Carpal tunnel syndrome: epidemiology, anatomy, etiopathogenesis. Clinical symptoms and their interpretation. Additional diagnostic tests and tools. Treatment: conservative and surgical. Advantages and disadvantages of different surgical procedures. Other median nerve compression neuropathies: pronator syndrome, n.interosseus anterior syndrome, lacertus fibrosus pressure. Topographic anatomy of the ulnar nerve and tunnel neuropathies: Elbow and Guyon canal syndromes. Intrinsic functions of the hand, their evaluation. The radial nerve, the posterior intercostal nerve (n.interosseus posterior) and the superficial branch of the radial nerve. Peculiarities of anatomy and compression neuropathy of these three nerves. Wolkmann's contracture. Differential diagnosis of compression neuropathies: stenotic tenosynovitis, epicondylitis, compression plexopathy. Treatment errors and complications. Mechanisms of peripheral nerve trauma. Sutures of the nerve, classifications. The main determinants: time of surgery, intraneural orientation. Today's requirements, microsurgical technique. Main donor nerves. Free and vascularized nerve transplants. Common injuries of

hand nerves. Neuroticization. Evaluation of nerve regeneration. Prevention and treatment of painful neuromas. Rehabilitation treatment. Thoracic outlet syndrome. Diagnostics. Surgical treatment. Plexus brachialis pressure and peripheral tunnel syndromes: differential diagnosis, double crush syndrome. Differential diagnosis of thoracic syndrome and shoulder rotator pathology. Traumatic lesions of the plexus. Peculiarities of leg nerve pathology and current clinical problems. Compressive neuropathies: peroneal neurophaty and tarsal tunnel syndrome. Foot drop. Morton's neuroma. Nerve tumors.

RECOMMENDED LITERATURE SOURCES

1. Kuokkanen H, Holstrom H, Abyholm FE, Drzewiecki KT. Skandinavijos plastinė ir rekonstrukcinė chirurgija. Vilniaus universiteto leidykla 2016.
2. Atlas of Peripheral Nerve Surgery E-Book, 2nd Edition. Daniel H. Kim, MD,
1. Alan R. Hudson, MD and David G. Kline, MD. Saunders. 2012
3. Green's Operative Hand Surgery. 8th edition. Elsevier 2021.
4. Kline and Hudson's Nerve Injuries: Operative Results for Major Nerve Injuries, Entrapments and Tumors. Daniel H. Kim. 2nd edition. Saunders 2007.
5. Plastic Surgery. Mathes SJ, Hentz VR. 2nd Editon. 8 volumes with website. Saunders 2005.
6. Operative Exposures in Peripheral Nerve Surgery. Maniker, Allen H. Thieme. 2005.
7. Manual of Peripheral Nerve Surgery. Socolovsky M., Rasulic L., Midha R., Garozzo D. Thieme. 2017.
8. Surgery of Peripheral Nerves. Midha, Zager. Thieme. 2008.
9. Examination of Peripheral Nerve Injuries: An Anatomical Approach. Russell. Thieme. 2015.
10. Nerve Surgery. Mackinnon. Thieme. 2015

CONSULTING LECTURERS

1. Coordinating lecturer: Vytautas Tutkus (Assoc. Prof. Dr.).
2. Nerijus Jakutis (Assist. Prof. Dr.).
3. Giedrė Stundžaitė-Baršauskienė (Assist. Prof. Dr.).

APPROVED:

By Council of Doctoral School of Medicine and Health Sciences at Vilnius University: 29th of September 2022

Chairperson of the Board: Prof. Janina Tutkuvienė