

# BRACHIAL PLEXUS SURGERY THROUGH TIME



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**1836 BAUDENS** - Direct suture of the terminal branches of the BP

**1896 THOBURN -** Direct suture of the ruptured spinal roots

**1903 HARIS & LOW** - Nerve transfer of the roots C6-C7 to C5

**1913 TUTTLE -** Spinal accessory nerve transfer

**1920 VULPIUS & STOFFEL -** Medial pectoral nerve transfer

**1929 FOERSTER -** Thoracodorsal nerve transfer

**1940 LURJE -** Thoracicus longus nerve transfer

**1963 YEOMAN & SEDDON -** Intercostal nerve transfer

**1972 TSUYAMA & HARA -** First large series of intercostal nerve transfer

**1972 GU YU DONG** - nerve transfer of the phrenic nerve

**1986 GU YU DONG -** contralateral transfer of the C7 root

**1991 YAMADA** -transfer of the anterior branches C3-C4 spinal roots

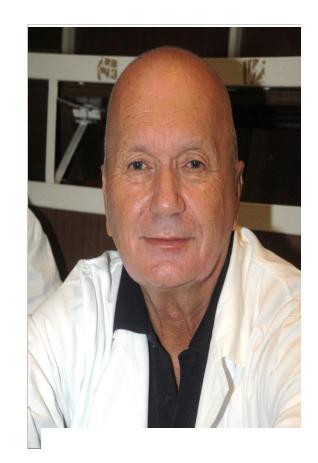
# BRACHIAL PLEXUS SURGERY THROUGH TIME

MODERN-ERA REVOLUTION

- 1964 SMITH & KURZE operative microscope
- 1967 GOTO perineural suture
- 1967 MILLESI interfascicular transplantation
- 1972 NARAKAS cable graft
- 1991 SAMARDZIC modified cable graft

# PERIPHERAL NERVOUS SYSTEM SURGERY IN SERBIA

- Modern peripheral nerve surgery in Clinic of Neurosurgery, Clinical Center of Serbia starts in 1976 with Professor Dr Miroslav Samardzic
- ☐ In 1980 the first nerve transfer was done in Serbia
- **1**980-2016
- ☐ 3268 microsurgical reconstructions of the peripheral nerves:
  - 2780 peripheral nerve lesions
  - 488 brachial plexus lesions



**MIROSLAV SAMARDZIC** 

### **PUBLICATIONS**

### Lessons learned over 25 years of practice

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Nerve injuries of the upper extremity associated with vascular trauma-surgical treatment and outcome.

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Rasulić L<sup>1,2</sup>, Savić A<sup>3</sup>, Živković B<sup>3</sup>, Vitošević F<sup>4</sup>, Mićović M<sup>5,3</sup>, Baščarević V<sup>5,3</sup>, Puzović V<sup>6</sup>, Novaković N<sup>7</sup>, Lepić M<sup>7</sup>, Samardžić M<sup>5,3</sup>, Mandić-Rajčević S<sup>8</sup>.

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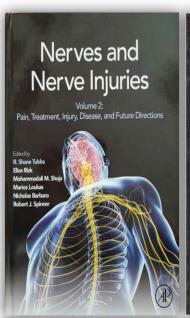
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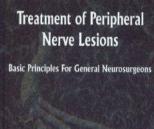
Samardzic MM1, Grujicic DM, Rasulic LG, Milicic BR.

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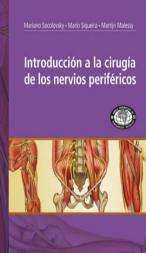




Peripheral Nerve Surgery Committee

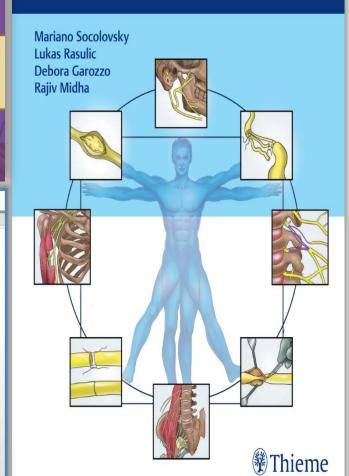
World Federation Of Neurosurgical Societies





### Manual of Peripheral **Nerve Surgery**

From Basics to Complex Procedures



Chapter 17

### Nerve Grafting Methods

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methods used for evaluation of the functional recovery.

By contrast, restoration of shoulder function is somewhat controversial. Several authors recommended reinnervation of the suprassapular nerve since the supra- and infrassapular

CHAPTER 12

Repair of Traumatic Peripheral Nerve Lesions: Operative Outcome After Repair of Complex Nerve Structures

Miroslav Samardzic, Lukas Rasulic

The results of nerve repairs of the complex nerve structures such are the brachial plexus and the proximal sciatic nerve should be studied in somewhat different way than for the individual nerves. This chapter is directed to analyze this situation.

Generally, it is difficult to assess accurately the results of the brachial plexus surgery due to poor standardization of the complex injury patterns, the functional priorities, and different.

The first priorities in brachial plexus repair are restoration of the strong and full range elbow flexion, shoulder stability, active arm abduction and some external rot ation. The recovery of all functions is equally important since these enable elbow movements through a more functional range. The recovery of elbow flexion may be achieved through reinnervation of the musculocutaneous nerve using different technical methods.

muscles are important for initiation of the arm abduction and some external rotation. In a significant number cases, good arm abduction and some external rotation can be Resultados de la reparación de las lesiones nerviosas en estructuras complejas

Miroslav Samandžić Lukas Rasolič

Journal

14

Los resultados de las separaciones de estructuras nerviosas complejas, come las del pleto braquial y del nervio ciárico, deben aralizarse de un modo diferente a los de las paraciones de nervios individuales. Este capítulo ciene por objetivo el mencionado

Por lo general, es difícil evaluar con precisión los resultados de la cirugia del plexó braquial debido a la estandarización insuficiente de los purrones de lesión, a las diferenes prioridades que poscen los diversos cirujanos para elegir entre restablecer una u otra función y a los métodos variados que se aplican para evaluar la recuperación funcional. En las reparaciones del plexo braquial, las prioridades son restablecer por completo la fenión activa del codo, la estabilidad del hombro, la abducción activa del brazo y cierto grado de rotación externa. La recuperación de la flexión del codo puede lograrse al rei-

Par el contrario, la recuperación de la función del hombro es un tensa controvertido. rios autores recomiendan reinervar el nervio supraescapular debido a que los múscusupraespinoso e infraespinoso son importantes para iniciar la abducción del brazo sicantar cierto grado de rotación externa. En una cantidad considerable de suestros Pécintes, lo logramos mediante la entervación del nervio circumágo, lo que podrá ex-plicare por la reintervación del músculo redondo menor y de las fibras posteriores del misculo deltondes, que actúan como rotatlores externos del hombro. Además, la seinerusión de la cabeza larga del biceps contribuye a sleamas la estabilidad del hombro y

rvar el territorio del mervio musculocuráneo con diferentes técnicas.

Para los fines prácticos, en nuestro centro elaboramos un sistema de clasificación Para la función del brazo basada en la publicada por Ploncard en 1982 (Tabla 14.1).



- EANS was the only continental neurosurgical society without section for peripheral nerve surgery
- EANS Board, at their meeting in Gava, Spain, accepted initiative for establishing of EANS Section with Prof. Dr Lukas Rasulic as an Acting chairman
- This was finally approved at EANS 2017 General Assembly in Venice.



### Primary goals

- Improving of knowledge and education in Peripheral Nerve Surgery among young generation,
- Enabling fellowship and internship in terms of 3-6-12 month's education for young neurosurgeons who want to be involved in the peripheral nerve surgery, by establishing the cooperation between European and World centers of excellence in the field.
- Multidisciplinary cooperation and collaboration
- Raising an awareness about importance of PNS



### Primary goals

- Identifying the needs of developing countries and providing the professional support
- Establishing of unified standard with level of neurosurgical technologies, which will be achievable and applicable in all countries, regardless the current state in which the country is
- Improving quality of life and social impact
- Establishing of new surgical subspecialization in the future, named nerve surgeon.



### Specific goals and actions within the section:

- Organizing Meetings, Workshops, Hands-on Courses, etc. in European neurosurgical centers at least once a year
- Carrying out publication activity: papers, books, monographs, under the name of the EANS
- Elaborating scientific guidelines & protocols related to the peripheral nerve surgery
- Encouraging interactive cooperation with similar sections of other neurosurgical societies
- Encouraging innovation and creativity, collaboration and novel support for the EANS



### Specific goals and actions within the section:

- Developing ideas and organizing for specialty training courses
- Holding a business meeting at least once a year
- The presence of members of the Section at all important congresses and meetings
- The number of members composing the Section will be reasonable, in accordance with its activity and purpose
- The activities of the Section will be reported every year,
   etc.



- One of the goals is establishing of cooperation not only within neurosurgical community but also within all specialties related to peripheral nerve surgery, such as orthopedics, microsurgery, reconstructive surgery, etc.
- Letter of intent will be sent to all relevant European associations, such as:
  - European Federation of Societies for Microsurgery,
  - European Society for the Study of Peripheral Nerve Repair and Regeneration,
  - International Society of Orthopedic Surgery and Traumatology, etc.



 According to the initiative of Prof. Dr Gregor Antoniadis, one of the members of Section, Invitation letters were sent to German colleagues from German NervClub and we have already established the cooperation with this Society.



- Members of Section, along with Chairman, will providing information about the following:
  - Mission/vision/action plan
  - Name/affiliation/contact of members
  - Meetings
  - Publications
  - The content for EANS web page and EANS newsletters



### Goals of the chair of the Section

- Clear definition of roles, responsibilities and expectations
- Responibility for function and work of Section
- Support to the members of Section
- Encouraging innovative and creative initiatives

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Miguel Dominguez Paez, Spain



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Miroslav Samardzic, Serbia



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Debora Garozzo, Italy



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Nora Dengler, Germany



Andrija Savic, Serbia



Juan Carlos Roa, Spain



Inga Lubotzki, Germany



Mariano Socolovsky, Argentina Honorary member



 1<sup>st</sup> Business meeting of the EANS section of Peripheral Nerve Surgery was held in Belgrade, on November 1<sup>st</sup> 2017

 We are open for all suggestions and proposals regarding future activities.



