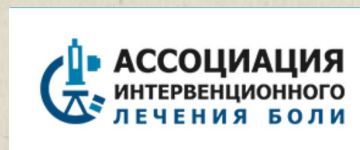


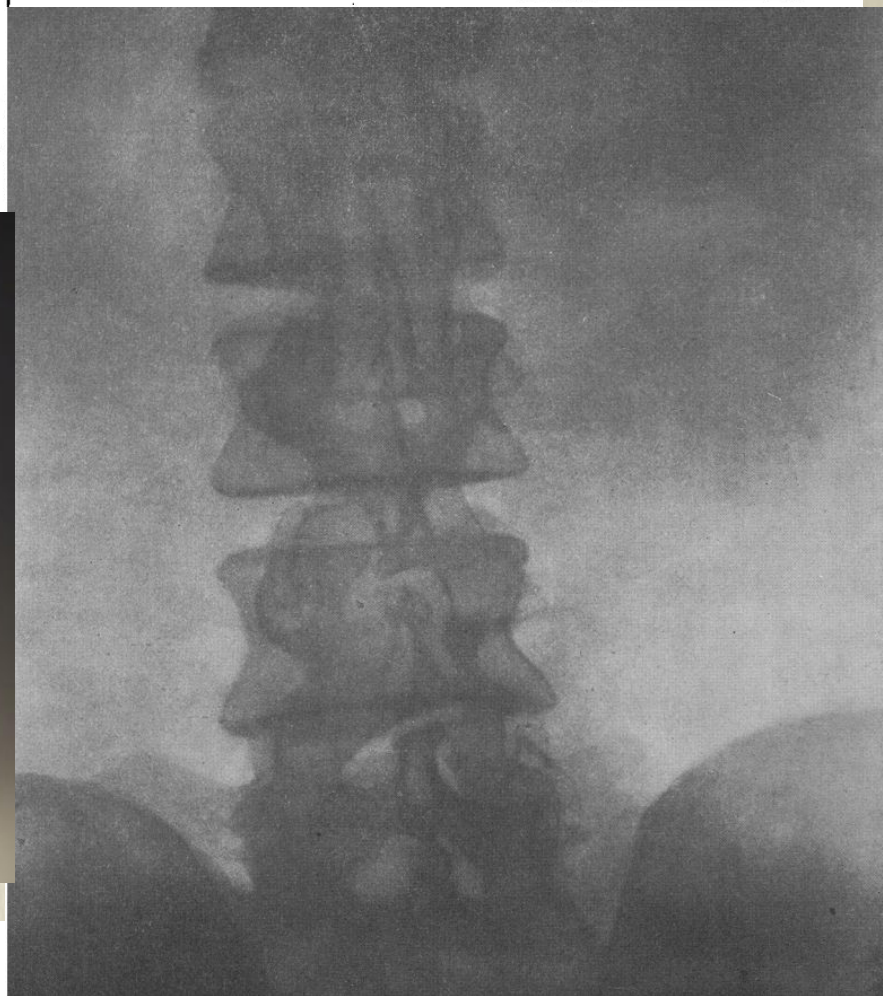
# АРТРОГЕННАЯ БОЛЬ В ПОЯСНИЧНОЙ ОБЛАСТИ. ФАСЕТОЧНЫЙ БОЛЕВОЙ СИНДРОМ. ИНТЕРВЕНЦИОННЫЕ МЕТОДЫ ЛЕЧЕНИЯ..

СЛУЖБА БОЛИ ГКБ № 7 ИМЕНИ С.С. ЮДИНА ДЗМ  
ПОРТНЯГИН ИВАН ВЛАДИМИРОВИЧ



**Original Articles.**

THE LUMBO-SACRAL ARTICULATION. AN EXPLANATION OF MANY CASES OF "LUMBAGO," "SCIATICA" AND PARAPLEGIA.



BOSTON MEDICAL AND SURGICAL JOURNAL

[MARCH 16, 1911

J.E. GOLDTHWAIT, 1911



## LOW BACK PAIN

WITH SPECIAL REFERENCE TO THE ARTICULAR  
FACETS, WITH PRESENTATION OF AN  
OPERATIVE PROCEDURE

RALPH K. GHORMLEY, M.D.

ROCHESTER, MINN.

Many theories have been presented regarding the pathologic changes that underlie low back pain. The subject is still far from settled, although year by year knowledge of the condition improves. To any one who studies the skeleton, the vertebrae particularly, and their anatomy, the importance of the articular facets in the function of the spinal column must be obvious. Further study of a series of spinal columns will reveal that in many of them are changes around the articular facets which must produce symptoms.

The articular facets must be regarded as the only true joints in the spinal column.<sup>1</sup> As true joints, hyaline cartilage covers their surfaces and synovial membrane lines their articular capsules. This articular capsule is more redundant and loose in the cervical region than in the lower portion of the spinal column. It has seemed to me that many of the aches and pains which are known as "backache" are true pains of the joints. They represent the same type of pain as that seen in arthritis of the knee or hip, and the accompanying changes are characteristic of degeneration or traumatic arthritis. The pains are often static in type; that is, they can be relieved by assuming a certain posture, or they can be greatly exaggerated by assuming other postures. The severe exacerbations of pain sometimes experienced are more like the pain of a "locking" joint than any other type of pain.

The degenerative changes that are characteristically seen in hyaline cartilage may be seen in the articular cartilage of these facets, together with the eburnation of the underlying bony trabeculae. This degeneration may go on to complete loss of the cartilaginous surface.

From the Section on Orthopedic Surgery, the Mayo Clinic.

Read before the Section on Orthopedic Surgery at the Eighty-Fourth Annual Session of the American Medical Association, Milwaukee, June 15, 1933.

1. Cunningham, D. J.: Textbook of Anatomy, New York, William Wood & Co., 1913, p. 307.

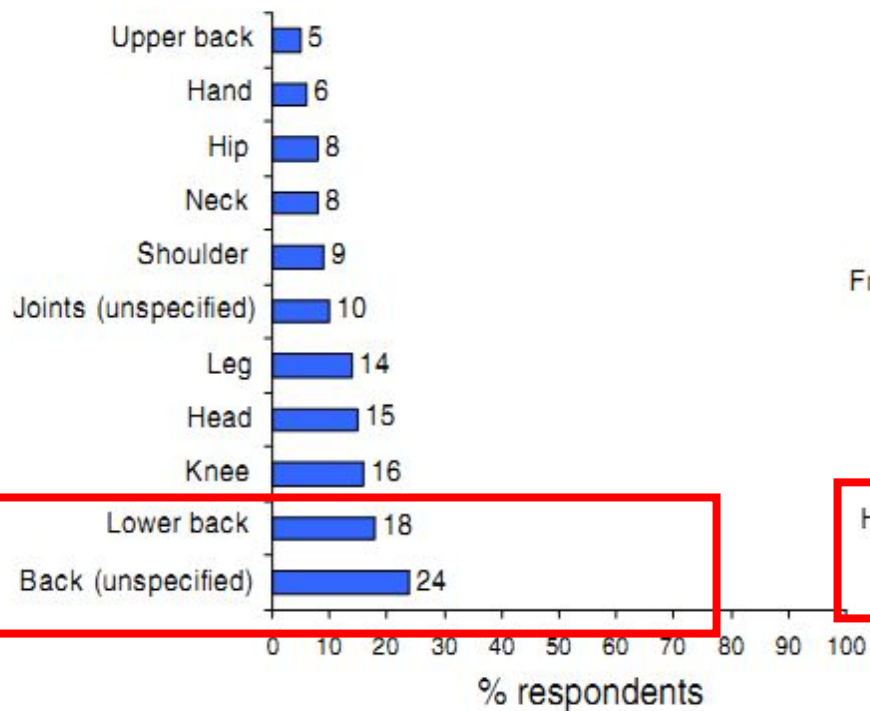
Ralf K. Ghormley

Впервые ввел понятие «фасет-  
синдром»

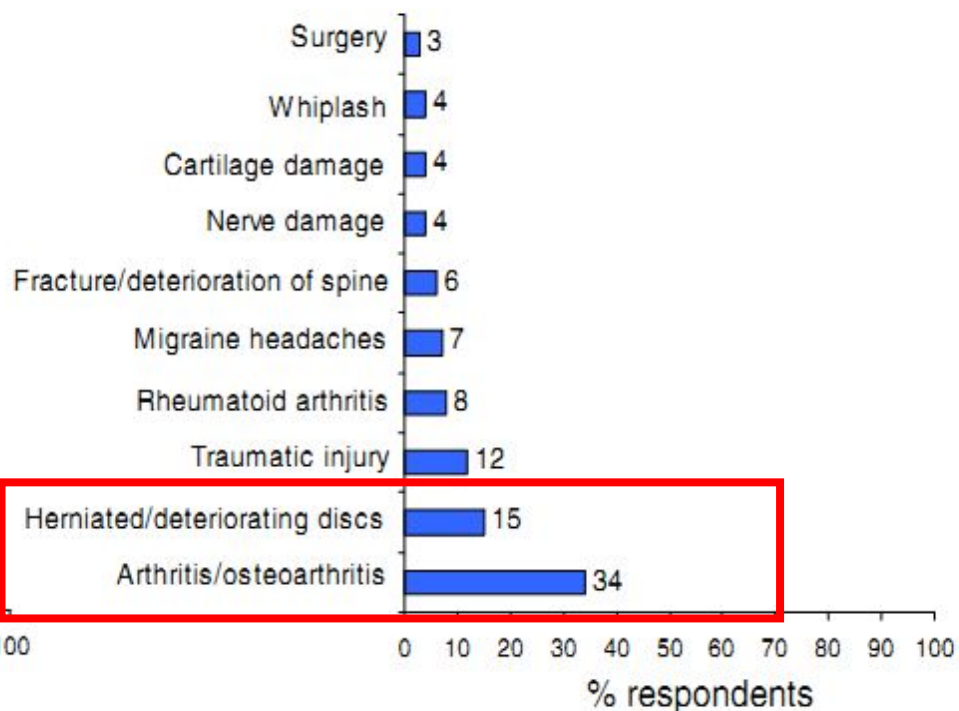
Первая попытка  
вмешательства на фасеточном  
суставе L5/S1

JAMA 1933; 101:1773-1777

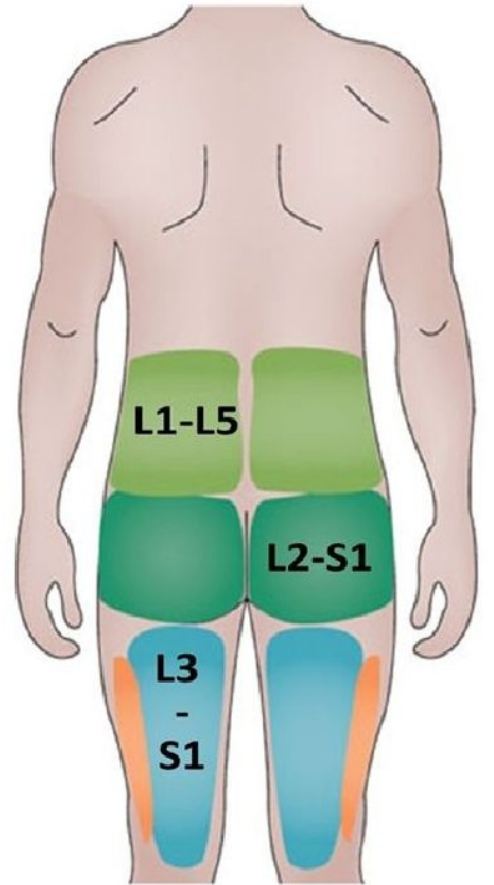
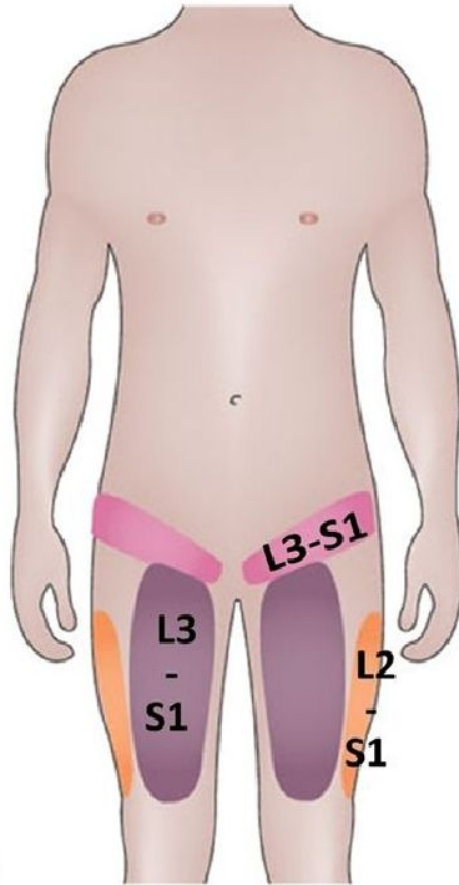
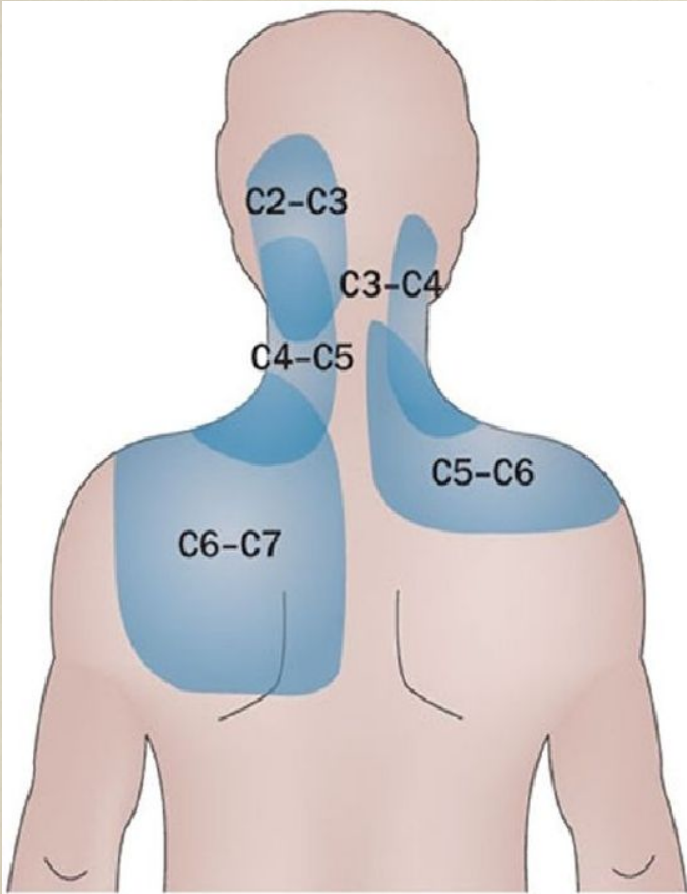
Most common body locations (n = 4835)



Most common causes of pain - unaided and aided responses (n = 4292)



H. Breivik et al. / European Journal of Pain 10 (2006)  
287-333





IPM Guidelines

## An Update of Comprehensive Evidence-Based Guidelines for Interventional Techniques in Chronic Spinal Pain. Part II: Guidance and Recommendations

Laxmaiah Manchikanti, MD, Salahadin Abdi, MD, PhD, Sairam Atluri, MD, Ramsin M. Benyamin, MD, Mark V. Boswell, MD, PhD, Ricardo M. Buenaventura, MD, David A. Bryce, MD, Trish A. Burks, LPT, David L. Caraway, MD, Aaron K. Calodney, MD, Kimberly A Cash, RT, Paul J. Christo, MD, Steven P. Cohen, MD, James Colson MS, MD, Ann Conn, MD, Harold J. Cordner, MD, Sareta Coubarous, DO, Sukdeb Datta, MD, Timothy R. Deer, MD, Sudhir A. Diwan, MD, Frank J.E. Falco, MD, Bert Fellows, MA, Stephanie C. Geffert, MLIS, Jay S. Grider, DO, PhD, Sanjeeva Gupta, MD, Haroon Hameed, MD, Mariam Hameed, MD, Hans Hansen, MD, Standiford Helm II, MD, Jeffrey W. Janata, PhD, Rafael Justiz, MD, Alan D. Kaye, MD, PhD, Marion Lee, MD, Kavita N. Manchikanti, MD, Carla D. McManus, RN, BSN, Obi Onyewu, MD, Allan T. Parr, MD, Vikram Patel, MD, Gabor B. Racz, MD, Nalini Sehgal, MD, Manohar Sharma, MD, FRCA, FFPMRCA, Thomas T. Simopoulos, MD, Vijay Singh, MD, Howard S. Smith, MD, Lee T. Snook, MD, John Swicegood, MD, Ricardo Vallejo, MD, PhD, Stephen P. Ward, MD, FRCA, FFPMRCA, Bradley W. Wargo, DO, Jie Zhu, MD, and Joshua A. Hirsch, MD

- The evidence for therapeutic facet joint interventions is good for **conventional radiofrequency**, limited for **pulsed radiofrequency**, fair to good for **lumbar facet joint nerve blocks**, and limited for **intraarticular injections**.

The evidence for **cervical provocation discography** is limited; whereas the evidence for **diagnostic cervical facet joint nerve blocks** is good with a criterion standard of 75% or greater relief with controlled diagnostic blocks.

The evidence for therapeutic cervical facet joint interventions is fair for **conventional cervical radiofrequency neurotomy** and **cervical medial branch blocks**, and limited for **cervical intraarticular injections**.

- The evidence is limited for **thoracic provocation discography** and is good for diagnostic accuracy of **thoracic facet joint nerve blocks** with a criterion standard of at least 75% pain relief with controlled diagnostic blocks.
- The evidence is fair for **thoracic epidural injections** in managing thoracic pain.
- The evidence for therapeutic **thoracic facet joint nerve blocks** is fair, limited for **radiofrequency neurotomy**, and not available for **thoracic intraarticular injections**.



ELSEVIER

Best Practice & Research Clinical Rheumatology  
Vol. 22, No. 3, pp. 471–482, 2008  
doi:10.1016/j.berh.2007.12.003  
available online at <http://www.sciencedirect.com>



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## **A best-evidence review of diagnostic procedures for neck and low-back pain**

Sidney M. Rubinstein\* DC, MSc

Research Fellow

EMGO Institute, VU University Medical Center, Van der Boechorststraat 7,  
1081 BT Amsterdam, The Netherlands

Существуют строгие  
доказательства  
эффективности блокад  
фасеточных суставов,  
а также блокад  
крестцово-подвздошного  
сочленения для  
диагностических целей



Research article

Open Access

## Prevalence of facet joint pain in chronic spinal pain of cervical, thoracic, and lumbar regions

Laxmaiah Manchikanti\*<sup>1</sup>, Mark V Boswell<sup>2</sup>, Vijay Singh<sup>3</sup>,  
Vidyasagar Pampati<sup>1</sup>, Kim S Damron<sup>1</sup> and Carla D Beyer<sup>1</sup>

24.05.2004

**Results:** The prevalence of facet joint pain in patients with chronic cervical spine pain was 55% (95% CI, 49% – 61%), with thoracic spine pain was 42% (95% CI, 30% – 53%), and in with lumbar spine pain was 31% (95% CI, 27% – 36%). The false-positive rate with single blocks with lidocaine was 63% (95% CI, 54% – 72%) in the cervical spine, 55% (95% CI, 39% – 78%) in the thoracic spine, and 27% (95% CI, 22% – 32%) in the lumbar spine.

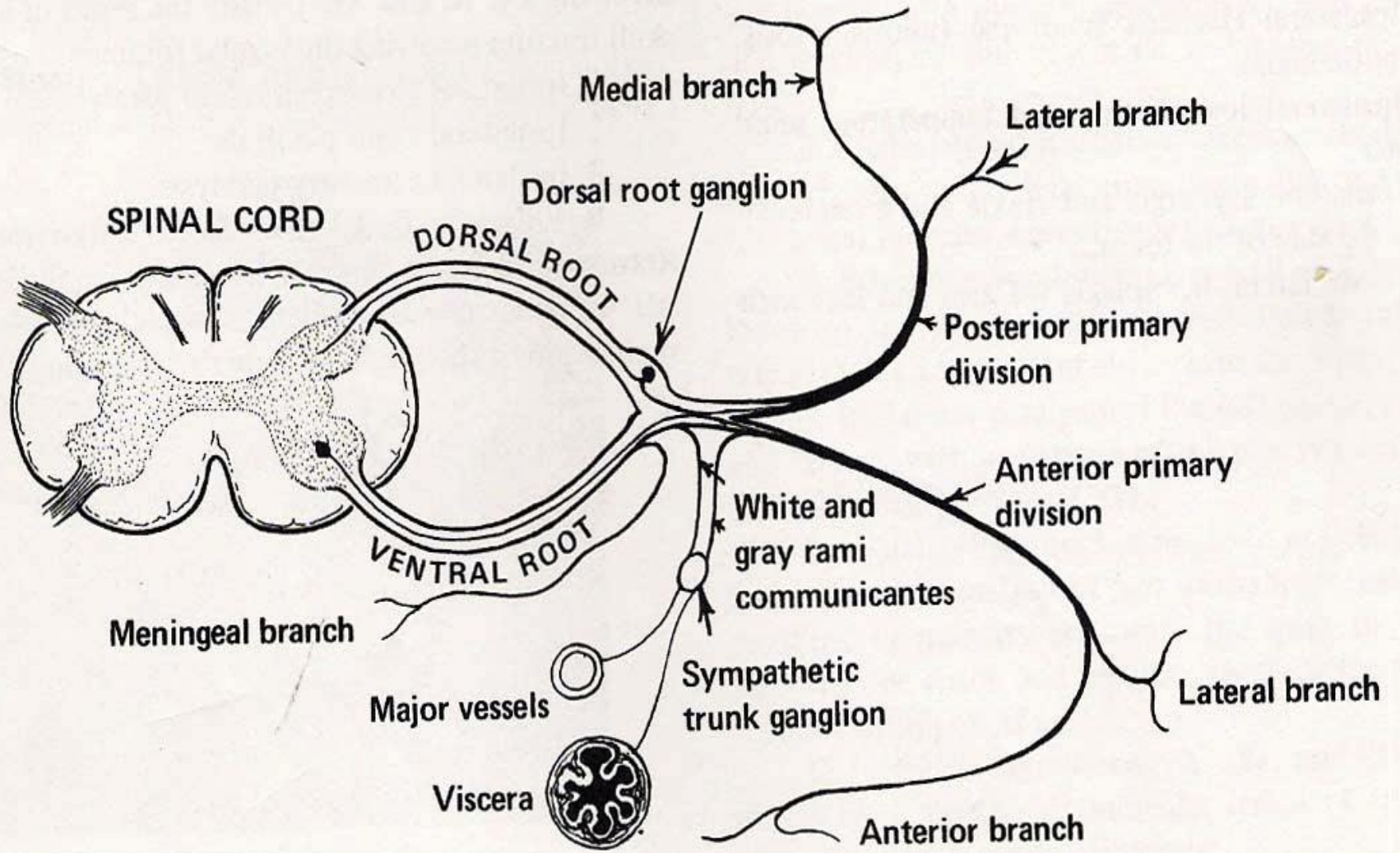


**Retrospective Evaluation**

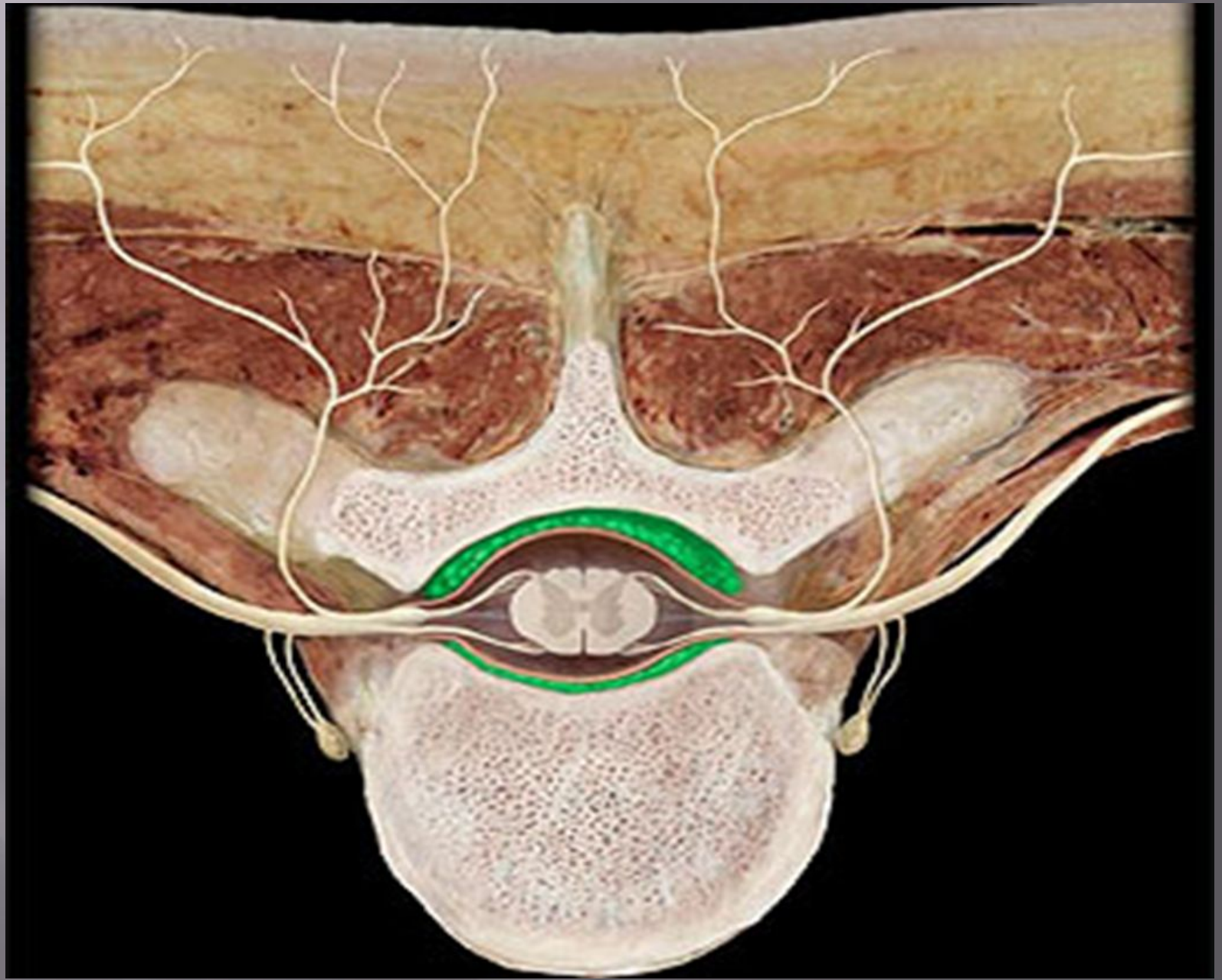
## **Age-Related Prevalence of Facet-Joint Involvement in Chronic Neck and Low Back Pain**

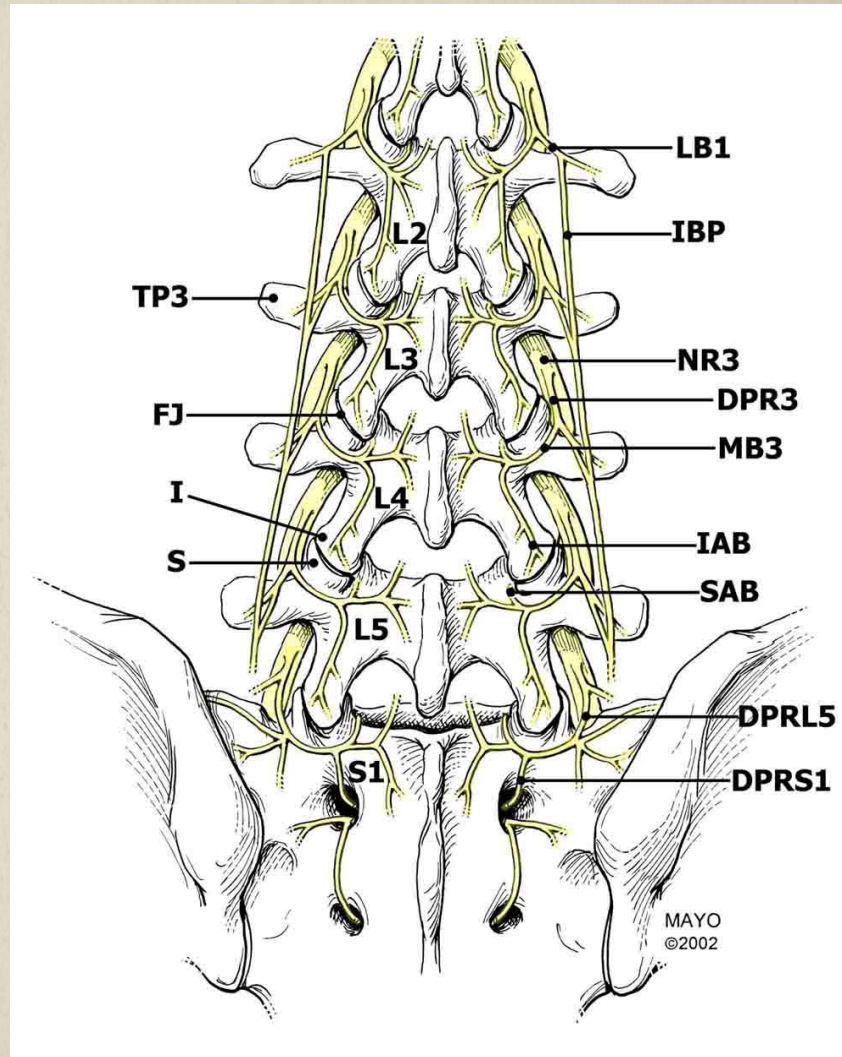
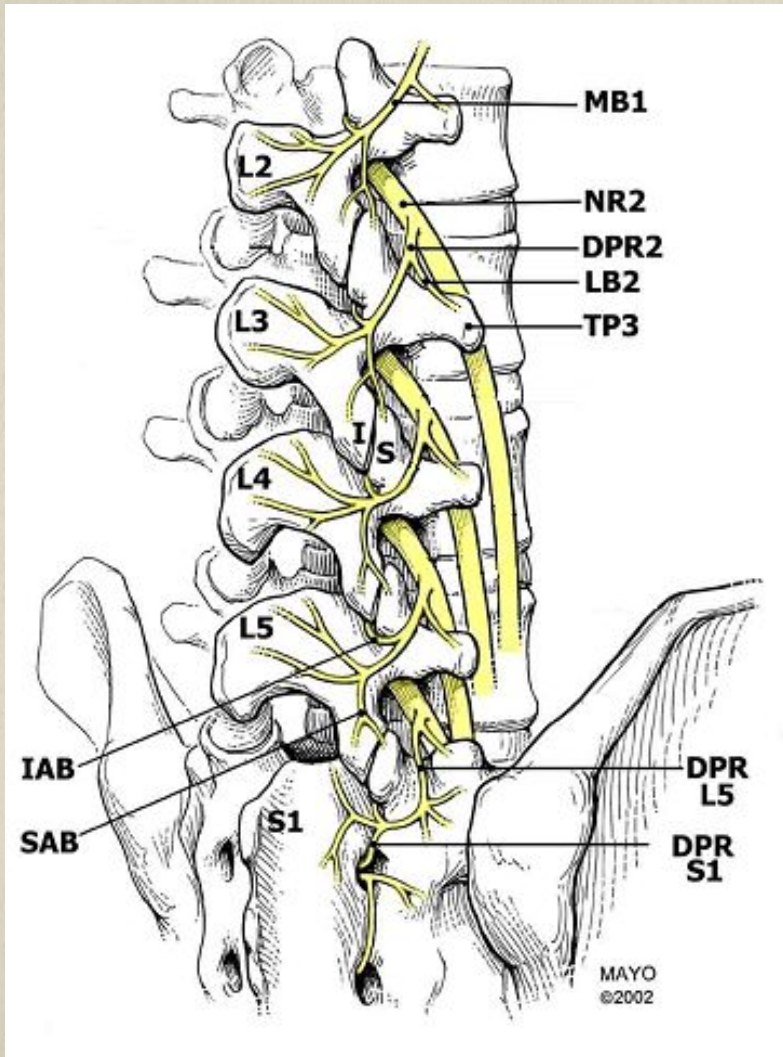
Laxmaiah Manchikanti, MD<sup>1</sup>, Kavita N. Manchikanti, BA<sup>1</sup>, Kimberly A. Cash, RT<sup>1</sup>,  
Vijay Singh, MD<sup>2</sup>, and James Giordano, PhD<sup>3</sup>

- 424 пациента, 6 групп, поделены в зависимости от возраста: группа 1 – до 30 лет, группа 6 – старше 70 лет
- Болевой синдром, обусловленный фасет-синдромом на шейном уровне преобладал в группе 1 (42%) и был наименее выражен у пациентов старше 70 лет
- Болевой синдром, обусловленный фасет-синдромом на поясничном уровне преобладал в группе 50-60 лет (44%)

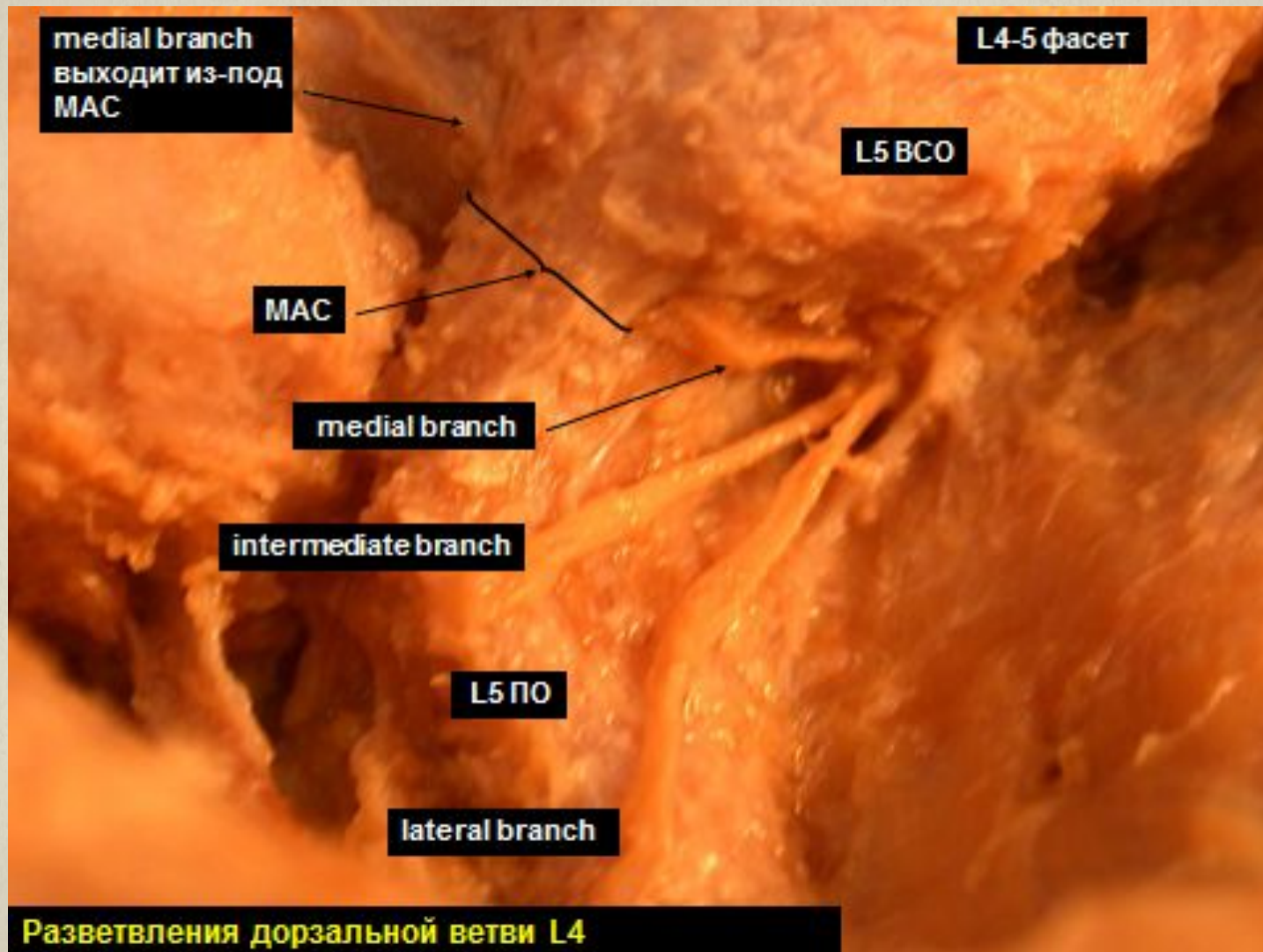












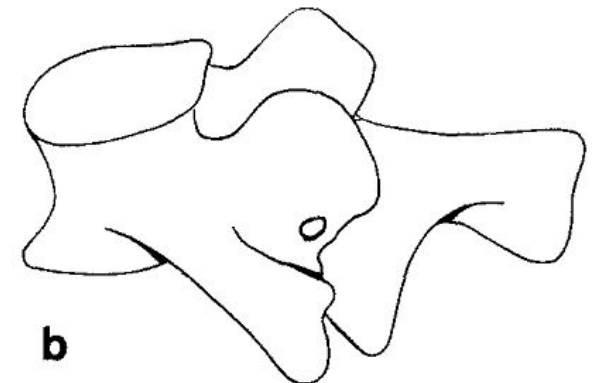
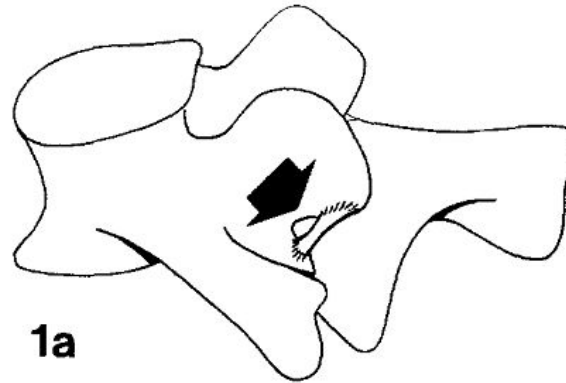
## The lumbar mamillo-accessory foramen: a study of 203 lumbosacral spines

J-Y Maigne<sup>1</sup>, R Maigne<sup>2</sup> and H Guerin-Surville<sup>1</sup>

<sup>1</sup> Department of Anatomy, UER Pitié-Salpêtrière, University of Paris

<sup>2</sup> Division of Physical Medicine and Rehabilitation, Hôpital Hôtel-Dieu

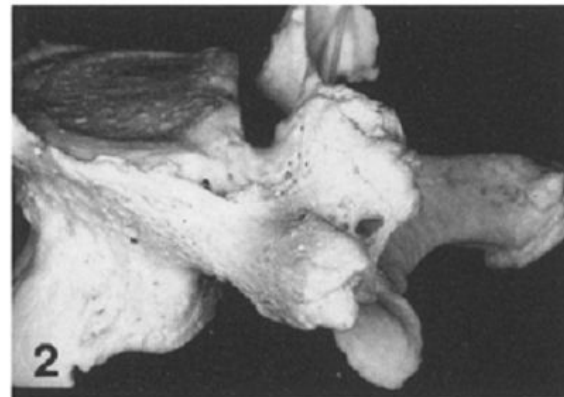
**Summary.** We have examined 203 lumbar and sacral skeletal specimens and have noted the frequent occurrence of a mamillo-accessory foramen, formed by the ossification of the mamillo-accessory ligament. The dorsal ramus of the lumbar nerve passes through this foramen. **At the L5 level, this foramen is found frequently: in 26% of the cases on the left side and in 13.5% on the right.** In some cases it is seen as a simple, deep notch. It is found much less frequently at L4 and almost never seen above. It is



**Fig. 1 a, b**

**a** Mamillo-accessory ligament. **b** Mamillo-accessory foramen on L5

**a** Ligament mamillo-accessoire. **b** Foramen mamillo-accessoire de L5

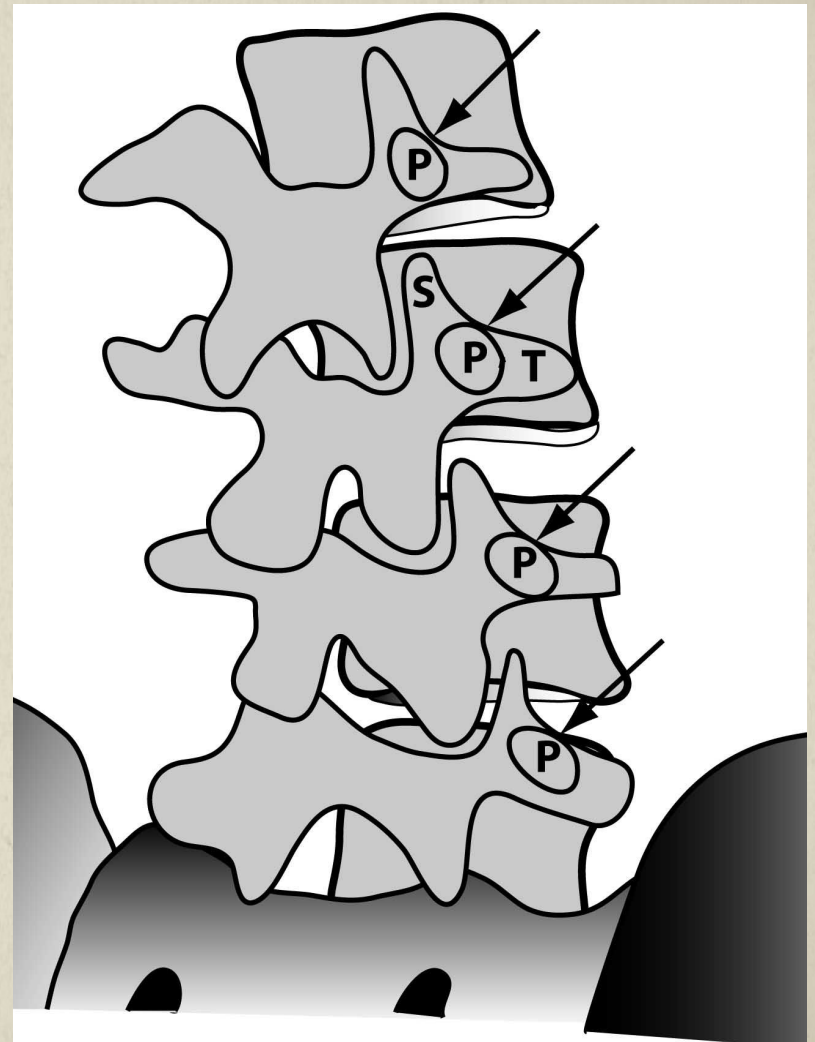
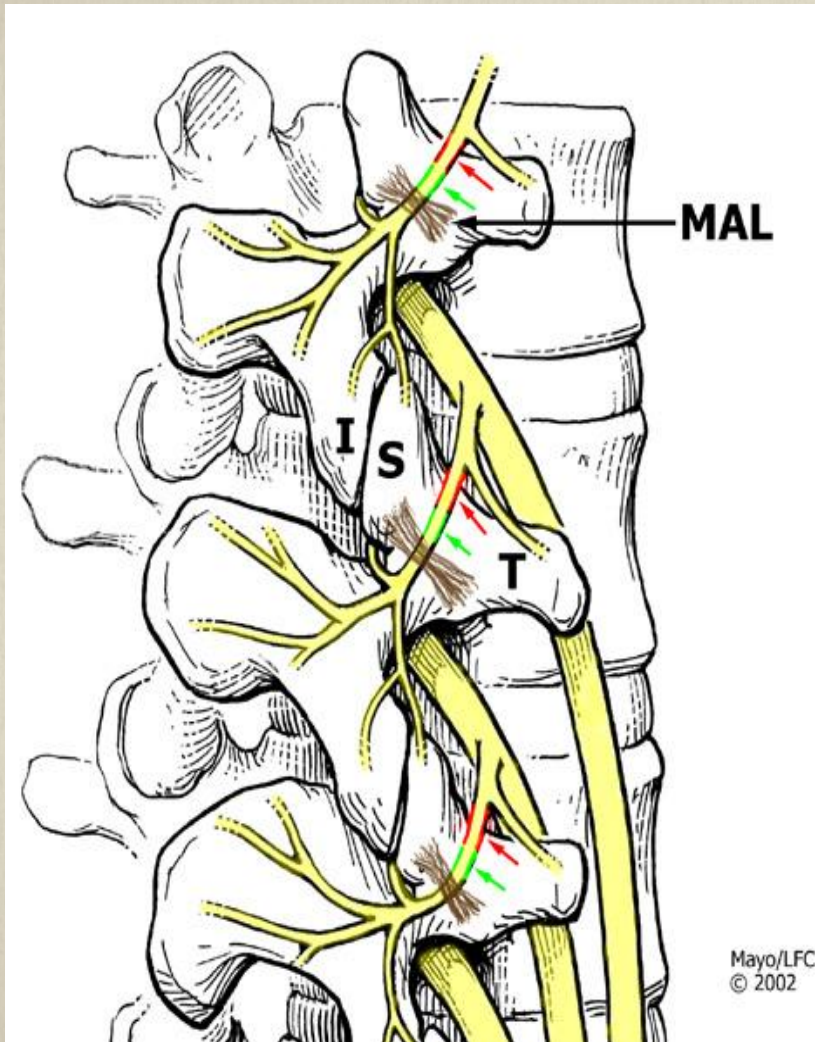


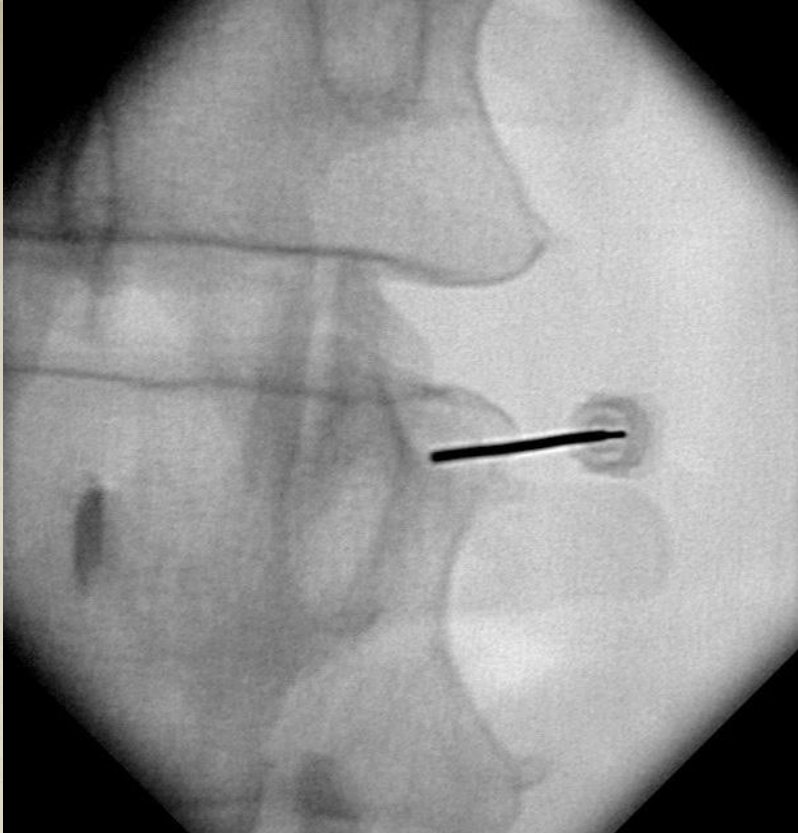
**Fig. 2**

Mamillo-accessory foramen probably formed by ossification of the mamillo-accessory ligament

Foramen mamillo-accessoire formé probablement par l'ossification du ligament mamillo-accessoire









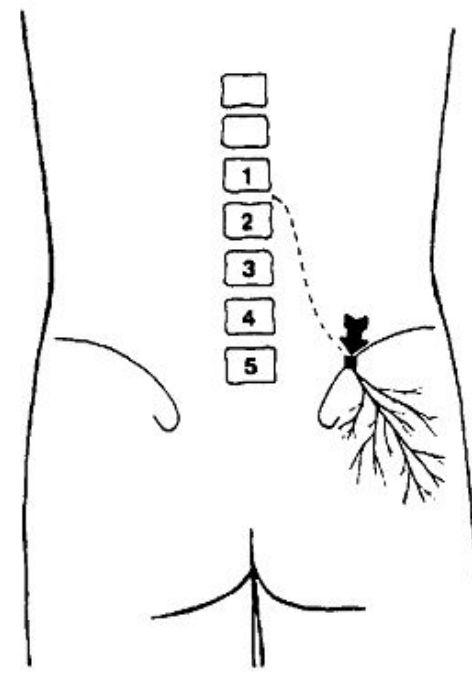
# СИНДРОМ МЕНЬЕ (J.MAIGNE)

## The lateral cutaneous branches of the dorsal rami of the thoraco-lumbar junction

An anatomical study on 37 dissections

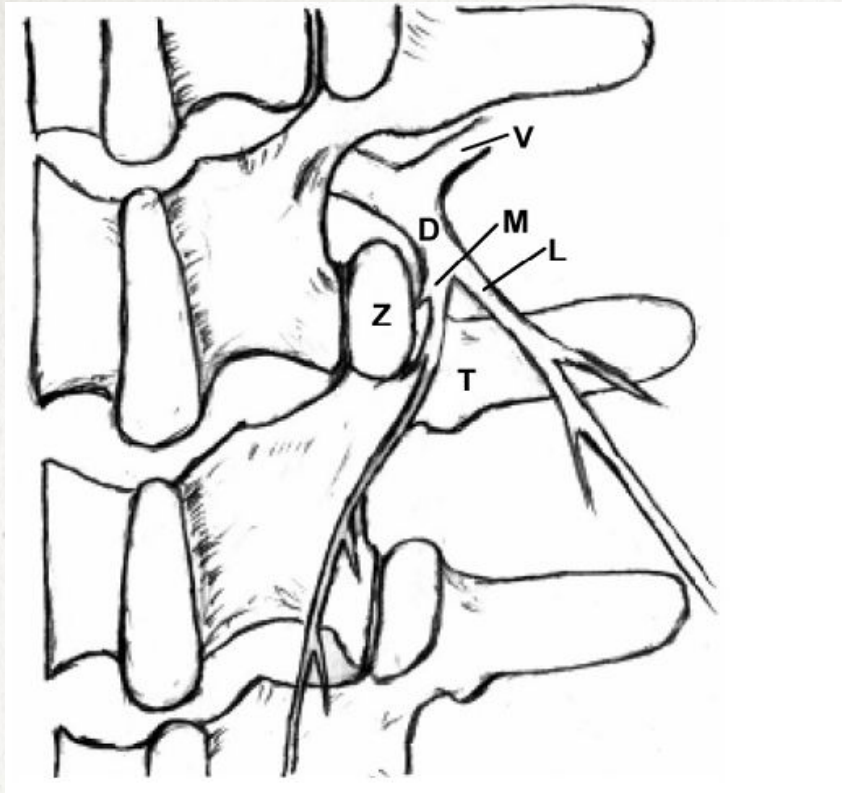
JY Maigne<sup>2</sup>, JP Lazareth<sup>2</sup>, H Guérin Surville<sup>1</sup> and R Maigne<sup>2</sup>

Surg Radiol Anat (1989) 11 : 289-293



**Fig. 1**

Unilateral low back pain originating from a facet syndrome at the thoraco-lumbar junction (TLJ). The pain is not experienced at the TLJ, but is referred lower in the dermatome of corresponding cutaneous dorsal rami. Pressure on the « iliac crest point » (arrow) reproduces the pain. This point corresponds to the emergence of the nerve



*Neuroscience & Medicine*, 2012, 3, 192-201  
<http://dx.doi.org/10.4236/nm.2012.32025> Published Online June 2012 (<http://www.SciRP.org/journal/nm>)



## The Anatomy of Dorsal Ramus Nerves and Its Implications in Lower Back Pain

Linqiu Zhou<sup>1</sup>, Carson D. Schneck<sup>2</sup>, Zhenhai Shao<sup>3</sup>



# ОСНОВНЫЕ ИНТЕРВЕНЦИОННЫЕ МЕТОДИКИ ИЗ АРСЕНАЛА КЛИНИКИ ЛЕЧЕНИЯ БОЛИ

- Тестовый блок  
Диагностика генератора боли
- Лечебный блок  
Лечебное воздействие на генератор боли, диагностика  
Воздействие на невральные структуры - разрушение
- Радиочастотная абляция  
Воздействие на невральные структуры – модуляция  
проведения болевого сигнала
- Радиочастотная модуляция

# ПРИНЦИП ДЕЙСТВИЯ

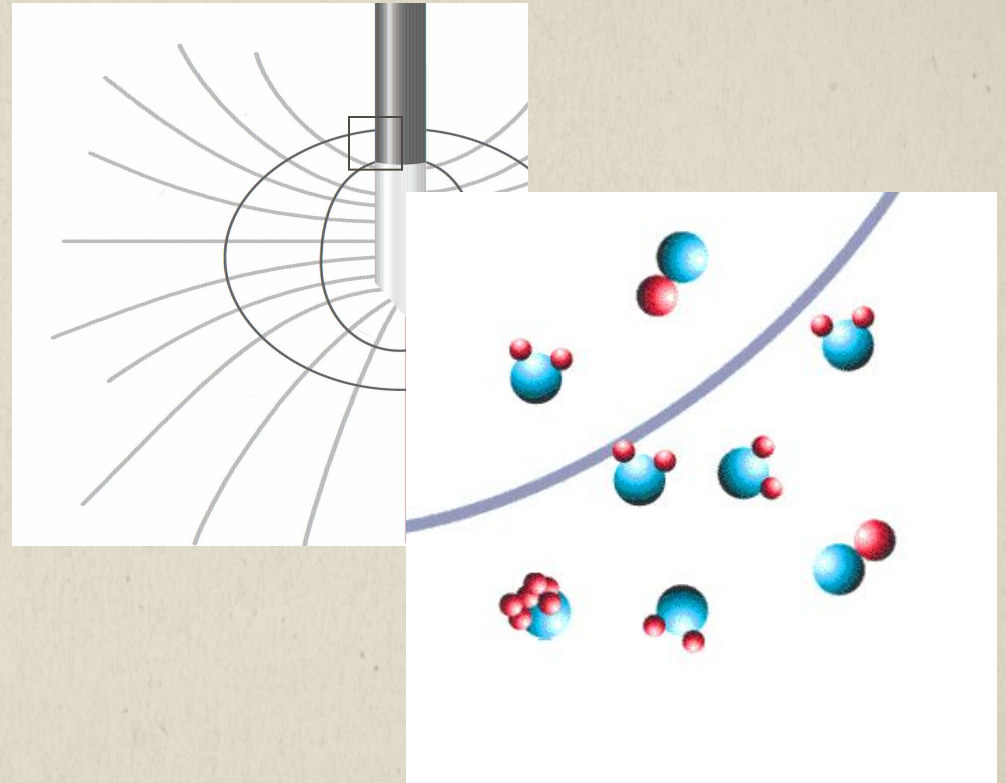
Генератор создает напряжение , изменяющееся с частотой 500 кГц.

Возникает электромагнитное поле

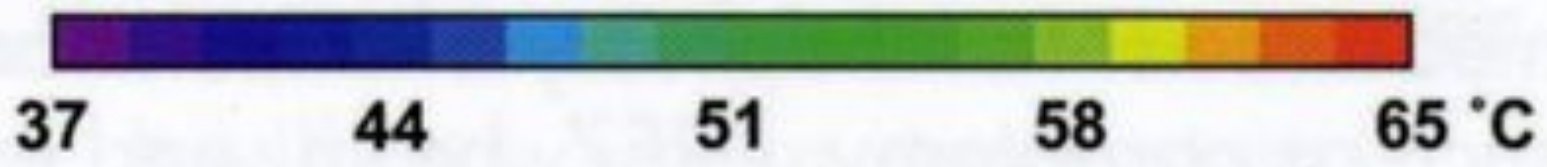
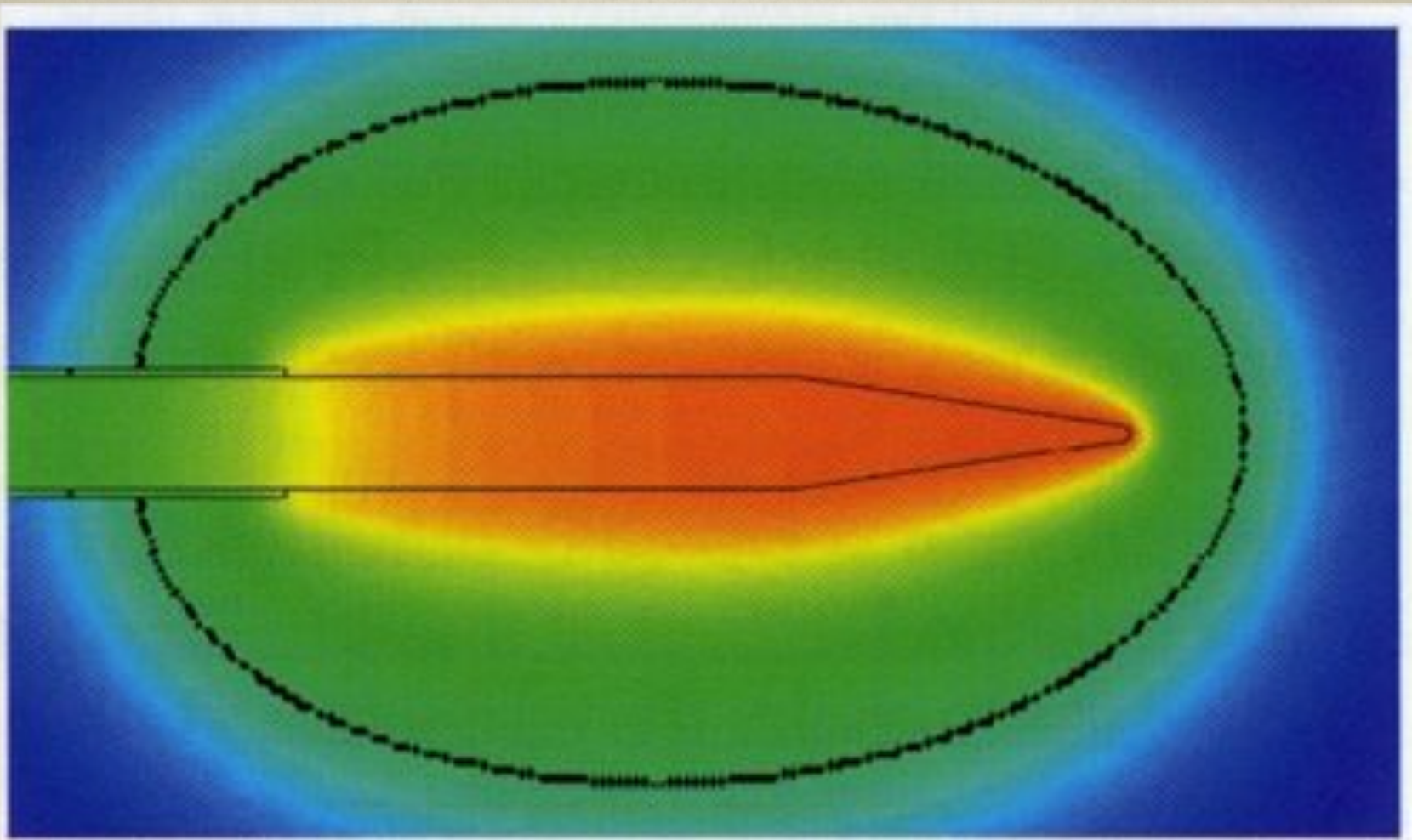
Под действием электромагнитного поля ионы начинают осциллировать

При движении ионов выделяется тепло, разогревающее ткани

Тепло нагретой ткани разогревает электрод и расположенный в нем термодатчик

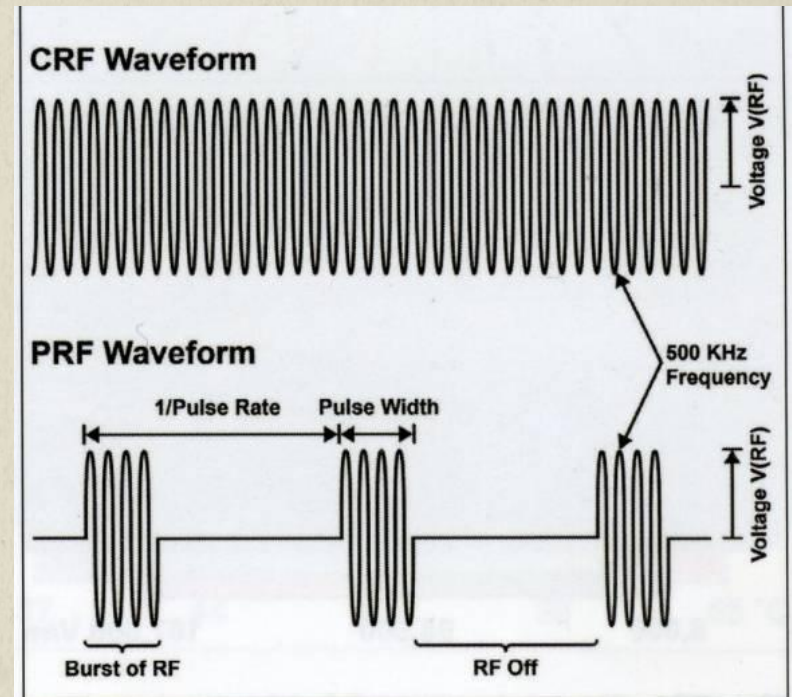






## Импульсный (PULSED) РЕЖИМ

- Введен в практику в середине 90-х годов Косманом
- Генератор производит «пакеты» импульсов с частотой 500 кГц длительностью 20 мсек с интервалами 480 мсек
- Большие интервалы не позволяют ткани нагреваться выше 40-42 градусов



**Не повреждает нерв**



?

