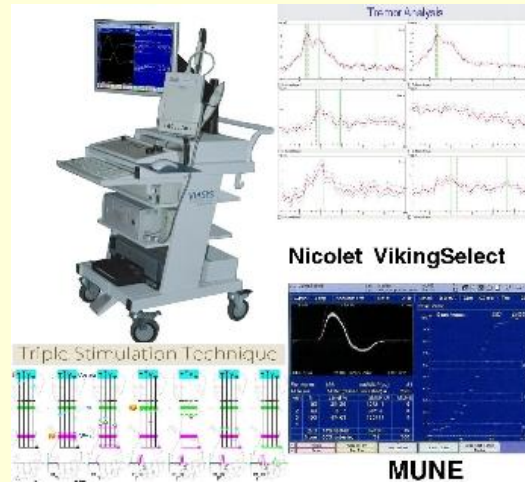


Başarısız Bel Cerrahisi Sendromunda Nörofizyolojik Değerlendirme

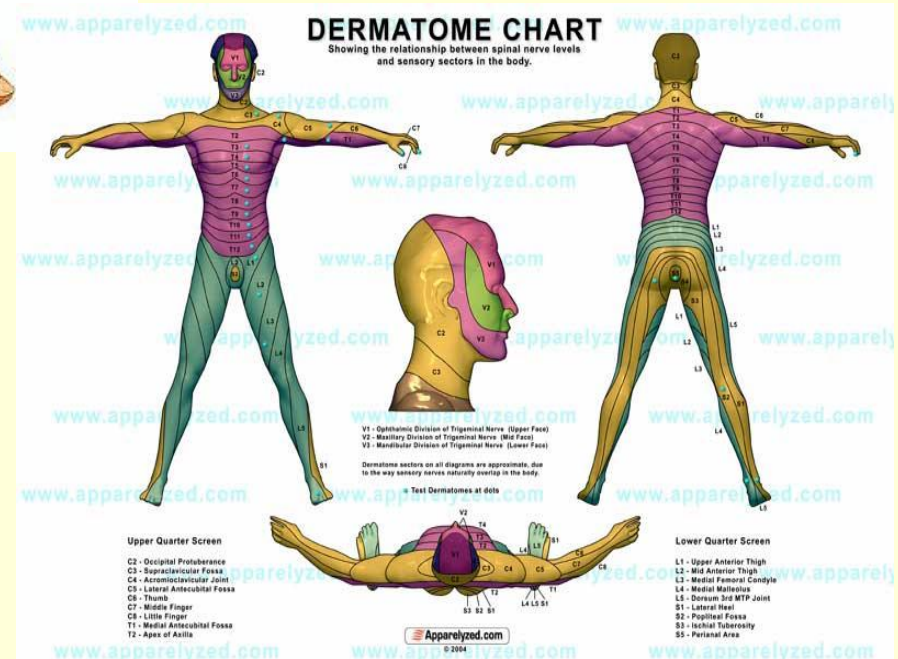
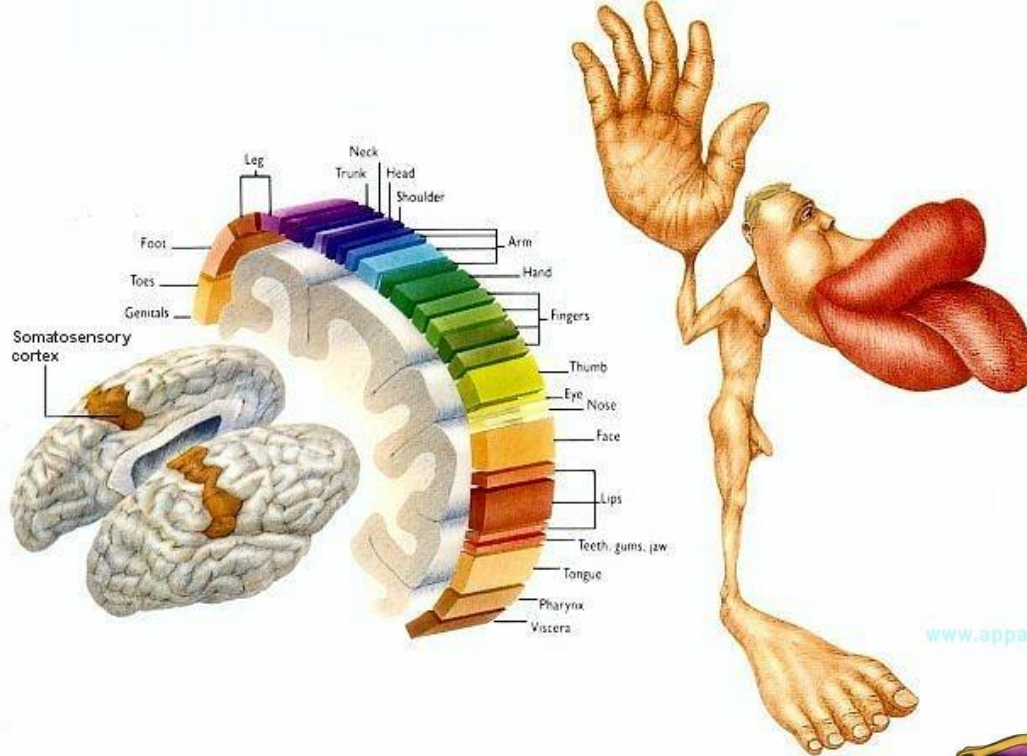


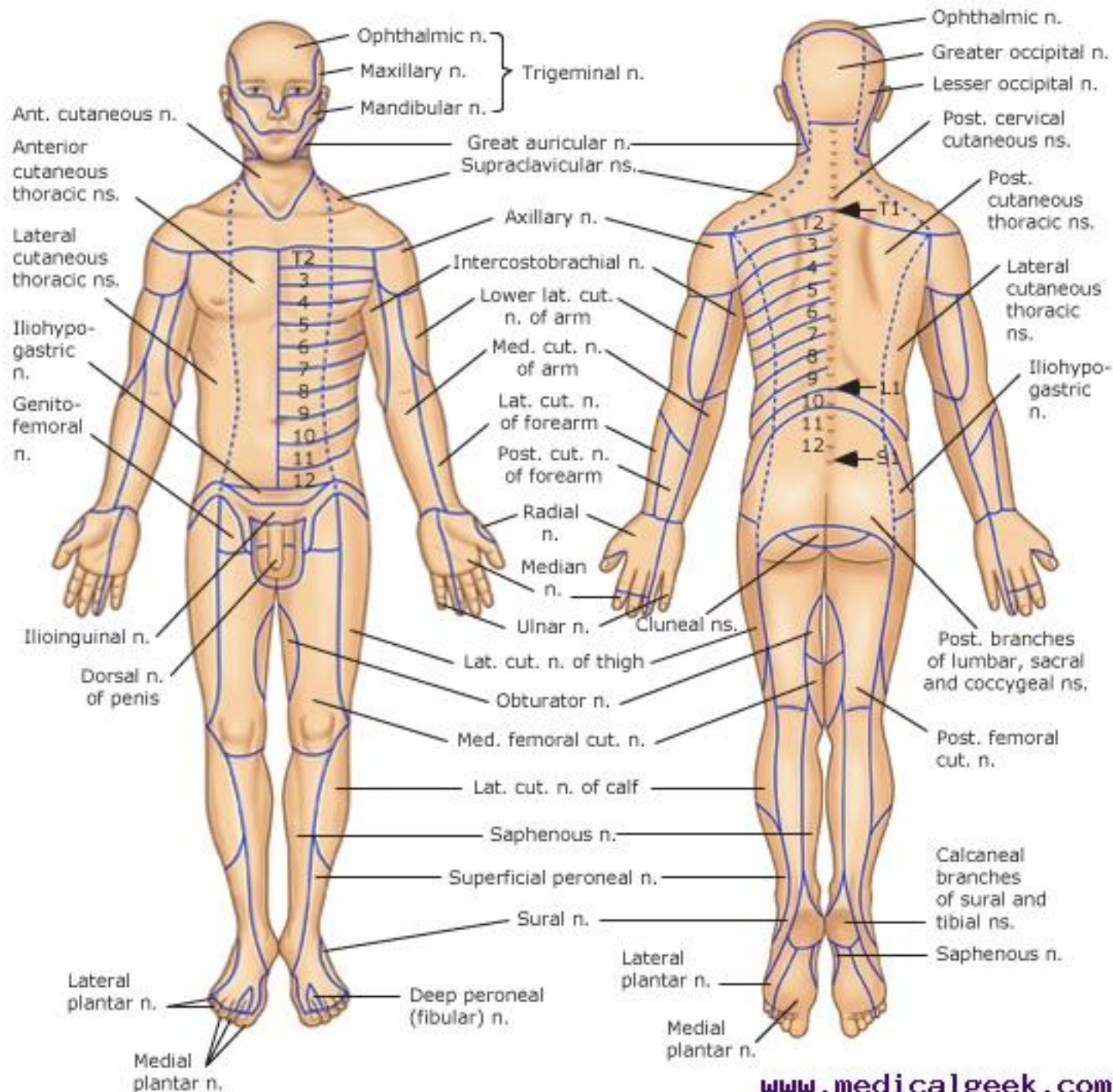
Prof. Dr. Işın ÜNAL ÇEVİK

Hacettepe Üniversitesi Tıp Fakültesi
Nöroloji Anabilim Dalı

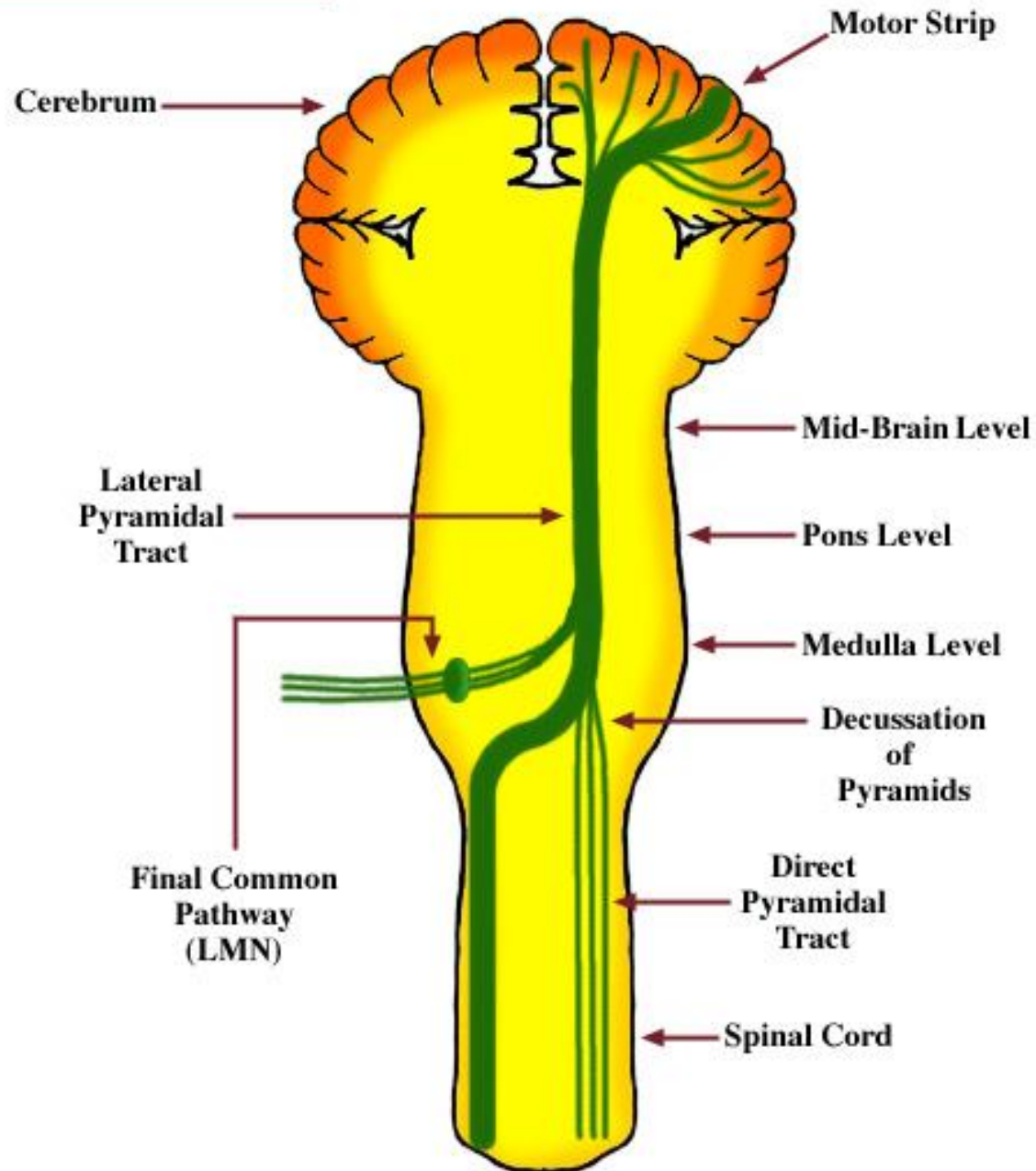
Duyu Muayenesinde Lezyonun lokalizasyonu

- Serebrospinal akşa göre,
- Sinir köklerine göre (dermatomal-myotomal)
- Periferik sinir dağılımına göre yapılır.





PYRAMIDAL TRACT



Review the functional sequence of activation of structures of the knee jerk reflex.

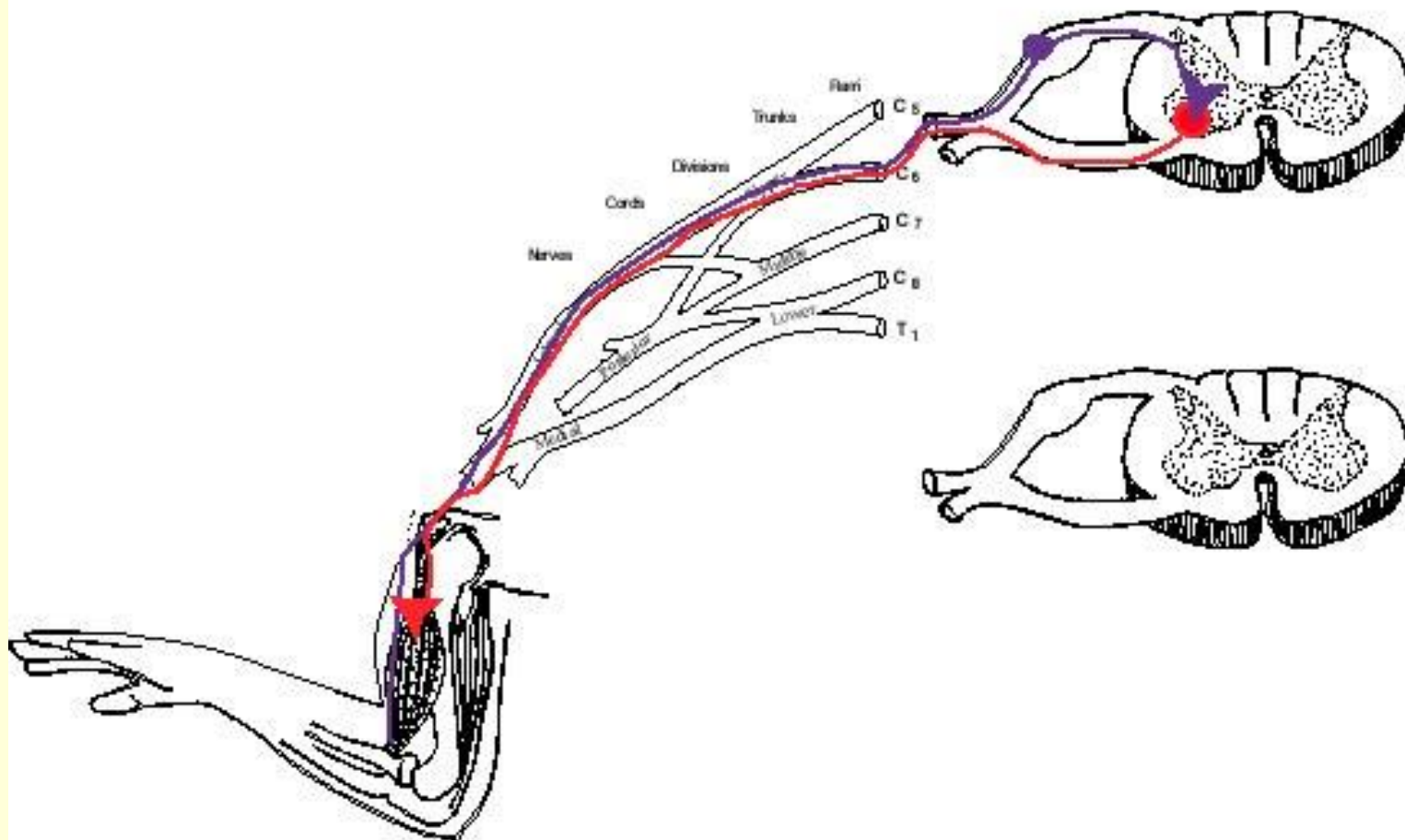
Now detail the analogous sequence for the present reflex.

Draw in the routes taken by afferents and efferents when the **biceps** tendon is stretched.

What muscle contracts reflexly?

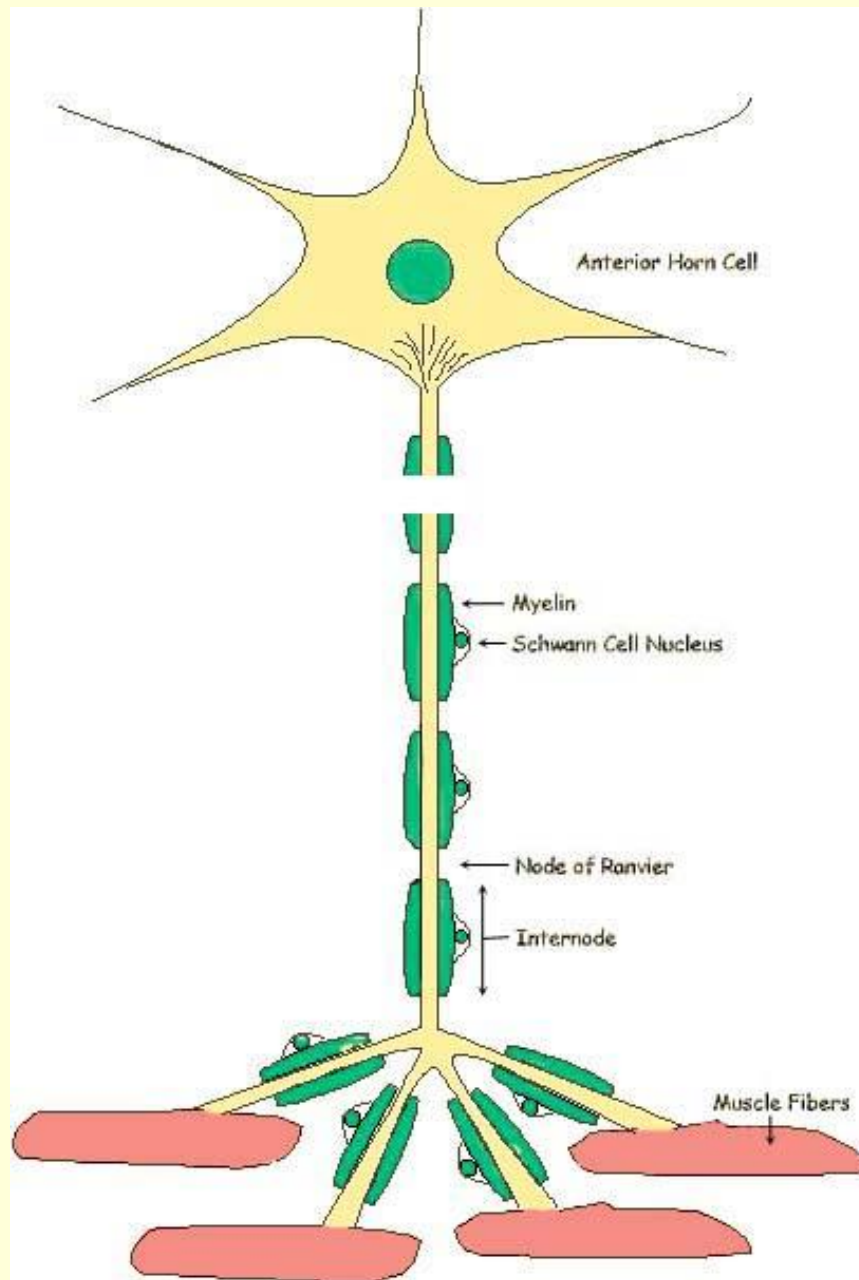
What is the resultant action on the lever?

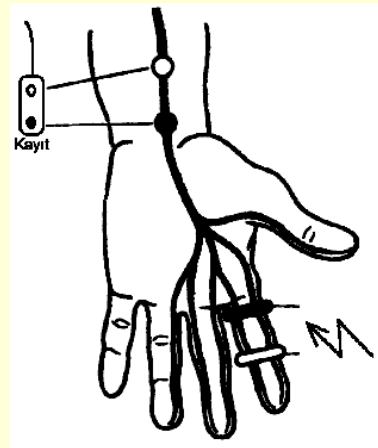
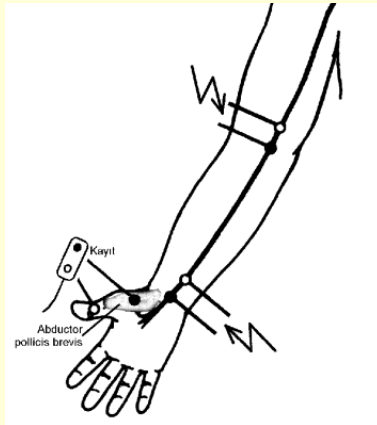
What is the effect of this movement on the antagonist muscle?



I. ve II. Motor Nöron Lezyonlarındaki Farklılıklar

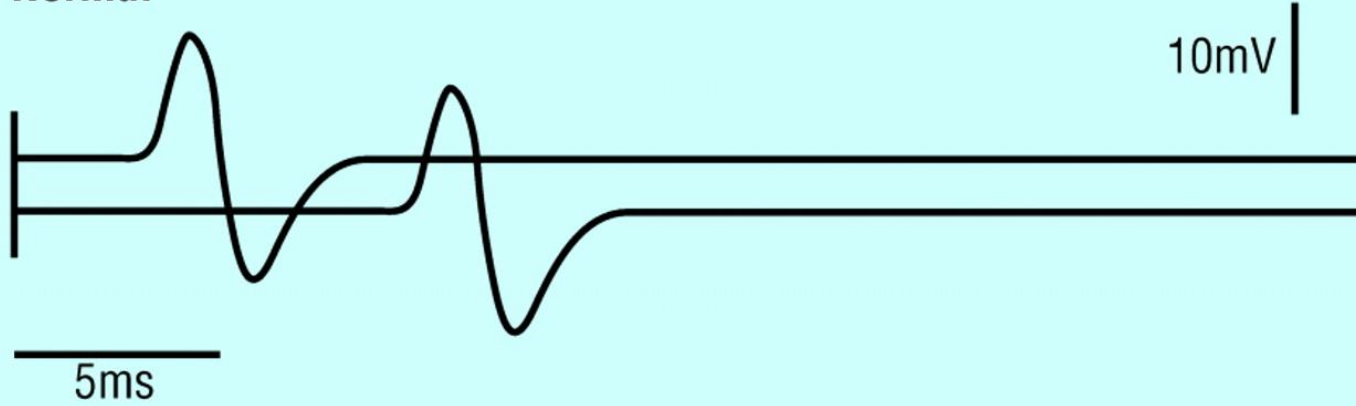
Klinik Belirti	I. Motor Nöron	II. Motor Nöron
Kas Gücü	Monopleji, Parapleji, Hemipleji, Tetrapleji	Segmental
Tonus	Artmış (spastisite)	Azalmış-Kayıp (hipotoni)
Atrofi	Erken dönemde yok	Var
DTR	Artmış	Azalmış-Kayıp
Patolojik Refleks	Var (Babinski, Klonus, Hoffman, Palmomenta)	Yok
Fasikülasyon/ Fibrilasyon	Yok	Var





Muscle action potentials after distal and proximal stimulation of a nerve to a muscle such as abductor pollicis brevis. The upper trace of each pair is the record after distal stimulation. In the normal nerve the distal motor latency is short and nerve conduction velocity rapid ($>50\text{m/sec}$). In demyelinating neuropathy the distal motor latency is prolonged and nerve conduction velocity slowed to less than 80% of normal. In axonal neuropathy the action potential is reduced, but the distal motor latency and nerve conduction velocity are unaffected. Multifocal abnormalities with normal conduction velocity suggest multiple mononeuropathy

Normal



distal ve proksimal uyarı sonrası kas aksiyon potansiyelleri

Demyelinating



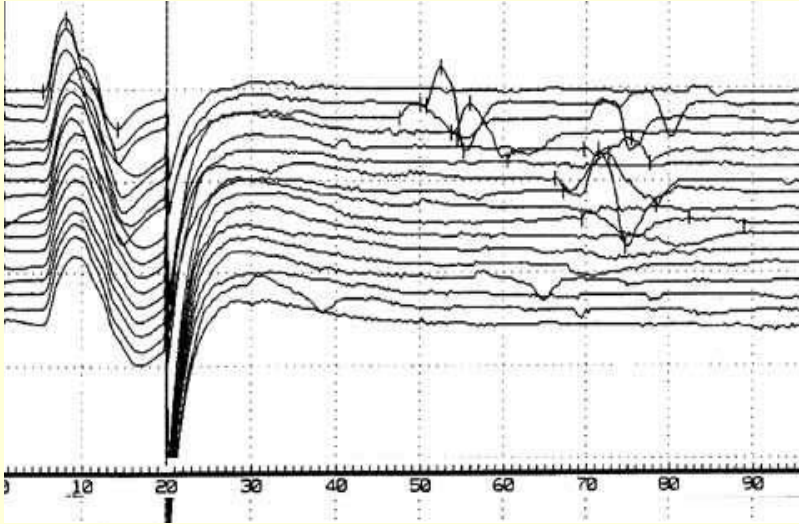
distal motor latans uzamış, sinir iletim hızı yavaşlamış

Axonal



Sadece aksiyon potansiyel amplitüdü azalmış

F-dalgası

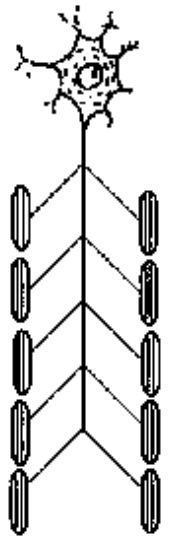


- F-dalga özellikleri demyelinizan nöropati özelliğinde
- Sayı: azalmış
- Impersistans
- Latans: uzamış ve dğişken

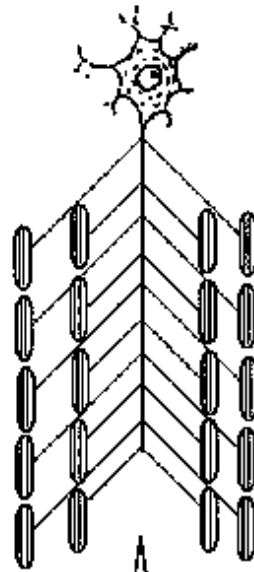
Electromyography



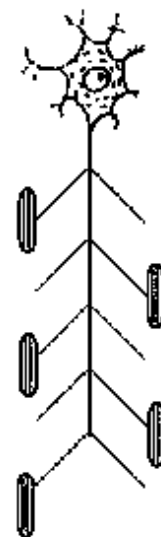
©MMG 2002



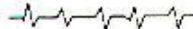
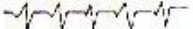
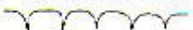
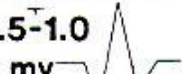
NORMAL



NÖROPATİ



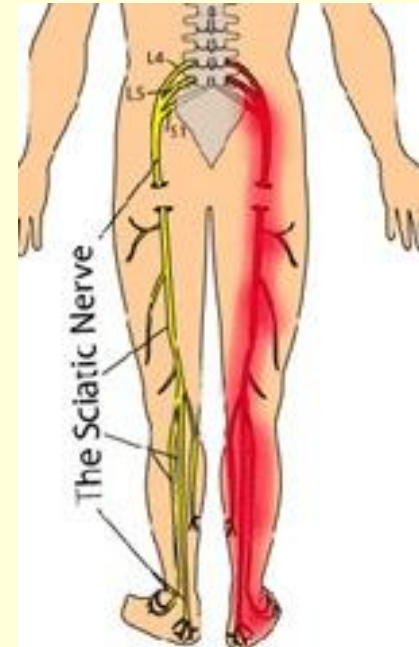
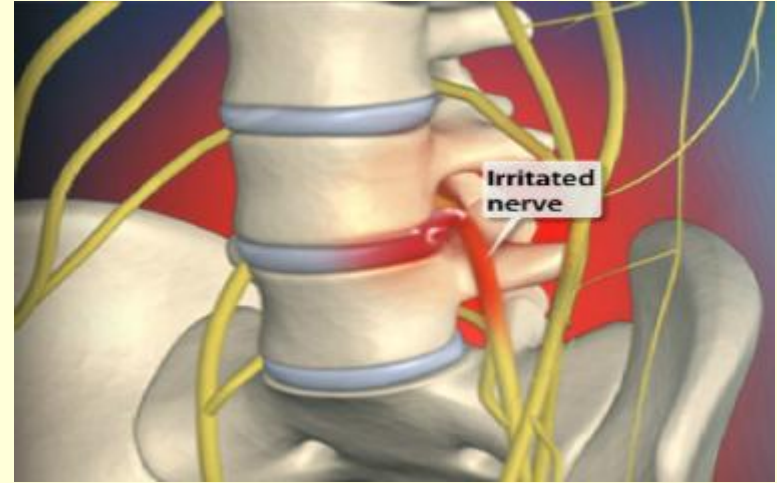
MİYOPATİ

Lesion		Neurogenic Lesion		Myogenic Lesion	
EMG Steps	Normal	Lower Motor	Upper Motor	Myopathy	Polymyositis
1 Insertional Activity	Normal 	Increased 	Normal 	Normal 	Increased 
2 Spontaneous Activity		Fibrillation  Positive Wave 			Fibrillation  Positive Wave 
3 Motor Unit Potential	0.5-1.0 mv  5-10 msec.	Large Unit  Limited Recruitment	Normal 	Small Unit  Early Recruitment	Small Unit  Early Recruitment
4 Interference Pattern	Full 	Reduced  Fast Firing Rate	Reduced  Slow Firing Rate	Full  Low Amplitude	Full  Low Amplitude

Radikülopati

Ağrı ile birlikte,

- Aynı sinir kökü ile innerve alanda dermatomal duyu değişikliği
- Miyotomal kas güçsüzlüğü,
- DTR azalması



Clinical Predictors of EMG-confirmed Cervical and Lumbosacral Radiculopathy

Table 4: Symptoms predictive of lumbosacral radiculopathy (N=123)

Clinical Features	Sensitivity (95% C.I)	Specificity (95% C.I)	PPV (95% C.I)	NPV (95% C.I)	Accuracy
<u>Single component</u>					
Radiating back pain	58% (51 – 66%)	44% (32 – 56%)	63% (56 – 71%)	39% (28 – 49%)	53%
Abnormal dermatomal sensation	49% (42 – 57%)	48% (36 – 60%)	61% (52 – 70%)	36% (27 – 45%)	49%
Leg pain	<u>73% (67 – 79%)</u>	26% (16 – 37%)	62% (57 – 68%)	36% (22 – 52%)	55%
<u>Two components</u>					
Back pain & abnormal sensation	29% (22 – 35%)	72% (60 – 82)	63% (48 – 77%)	38% (32 – 43%)	45%
Back pain & leg pain	51% (43 – 58%)	50% (38 – 62%)	63% (54 – 72)	38% (29 – 47%)	50%
Abnormal sensation & leg pain	36% (29 – 43%)	70% (57 – 80%)	67% (53 – 78%)	39% (33 – 46%)	49%
<u>All three components</u>					
Back pain, abnormal sensation & leg pain	26% (19 – 32%)	<u>78% (67 – 88%)</u>	67% (50 – 81%)	39% (33 – 43%)	46%

Table 5: Signs predictive of lumbosacral radiculopathy (N=123)

Clinical Features	Sensitivity (95% CI)	Specificity (95% CI)	PPV (95% CI)	NPV (95% CI)	Accuracy
Single component					
Dermatomal sensory loss	33% (26 – 38%)	80% (69 – 89%)	74% (58 – 86%)	42% (36 – 46%)	50%
Segmental reflex loss	57% (50 – 63%)	74% (62 – 84%)	79% (69 – 87%)	51% (42 – 58%)	63%
Myotomal weakness	31% (26 – 32%)	98% (90 – 100%)	98% (82 – 100%)	46% (43 – 48%)	57%
Positive SLR test	31% (25 – 35%)	89% (79 – 96%)	83% (66 – 93%)	44% (38 – 47%)	53%
Two components					
Sensory loss & reflex loss	14% (9 – 18%)	91% (83 – 97%)	73% (47 – 91%)	39% (35 – 41%)	43%
Sensory loss & weakness	14% (9 – 14%)	99% (91 – 100%)	96% (64 – 100%)	41% (38 – 41%)	46%
Sensory loss & positive SLR	17% (11 – 20%)	91% (82 – 97%)	76% (52 – 92%)	40% (36 – 42%)	45%
Reflex loss & weakness	21% (16 – 22%)	98% (91 – 100%)	97% (75 – 100%)	43% (39 – 43%)	50%
Reflex loss & positive SLR	17% (12 – 20%)	94% (85 – 98%)	81% (56 – 95%)	40% (36 – 42%)	46%
Weakness & positive SLR	12% (8 – 13%)	98% (92 – 100%)	95% (61 – 100%)	40% (38 – 41%)	45%
All four components					
Sensory loss, reflex loss, weakness & positive SLR	3% (1 – 4%)	98% (95 – 100%)	83% (21 – 100%)	38% (37 – 39%)	39%

SLR, straight-leg raising; CI, confidence interval; PPV, positive predictive value; NPV, negative predictive value

Lumbosakral Radikülopati Sıklığı

- L5 (48%)
- S1 (30%)
- L4 (17%)
- L3 (5%)
- S2 (4%)
- L2 (3%)

Elektrofizyolojik Sinir Kökü Lezyonu

Kompresif Sebepler

- Disk hernisi
- Osteofit
- Faset eklem hipertrofisi
- Ligamentöz hipertrofi

Kompresif-Olmayan

- İskemi,
- Travma,
- Neoplastik infiltrasyon,
- Enfeksiyöz,
- Radyasyon hasarı
- İmmün-aracılı hastalıklar,
- Lipom
- Konjenital (meningomyelosel, artrogripozis...)

Radikülopati tanısında

MRG

- Yapısal patolojileri gösterir
- Yalancı pozitifliği yüksektir (asemptomatik %53 vakada diskopati)

EMG

- Disfonksiyonu gösterir
- Sensitivitesi orta (%50-71)
- Spesifisitesi yüksek (%65-85)

Radiküler (sinir hasarı) / radiküler olmayan patolojilerin doğrulanmasında objektif veri:

- Motor kök lif disfonk: **İğne EMG**
- Duyusal kök lif disfonk: H-refleks (soleus)

Bel ağrısında ENMG



- Altın standart
- Etkilenen sinir köklerini saptanması
- Hasarın derecesi
- Hasarın akut/kronik olduğu
- Cerrahi kararında etkili



- Sensitivitesi sınırlı
- Zahmetli bir teknik
- Hasta için konforlu değil (ağrılı ve zaman alıcı)

EMG ile :

Radikülopati ayırıcı tanısında ekarte edilenler:

- Polinöropati
- Tuzak nöropatiler (L5 radikülop/peroneal, L4 radikülop/saphenous)
- Pleksopati

The Electrodiagnosis of Cervical and Lumbosacral Radiculopathy

- C4-C8, T1,
- L2-5 ve S1-2 spinal sinirler elektrodagnostik incelemelerle değerlendirilebilir

Lumbosakral radikülopati protokolü

Sinir iletim çalışmasında:

- İpsilateral 2 motor sinir (peroneal, post. tibial)
- Bilateral sural sinir
- Bilateral H-refleksi (soleus kası, S1 radikülopatide kaybolmuş ya da latansı uzamış) sensitivite %50, spesifisite %91.

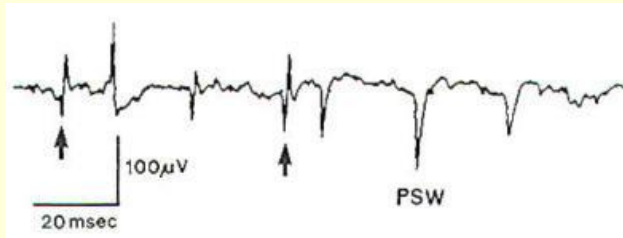
İğne EMG' de:

- Aynı kök fakat farklı periferik sinirlerle innerve olan en az 2 kas (proksimal ve distal)
- Lumbosakral paraspinal kas

İğne EMG

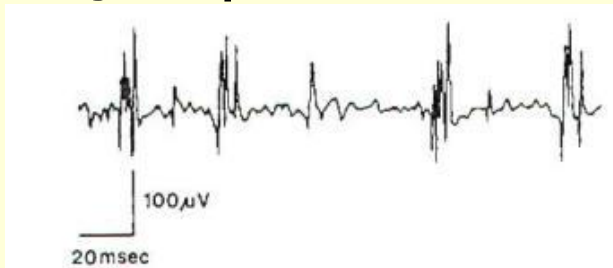
Aktif denervasyon:

- Fibrilasyon potansiyelleri ve/veya pozitif keskin dalgalar, azalmış recruitment



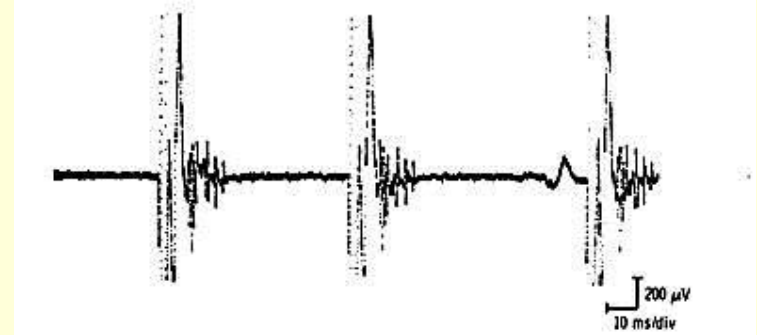
Erken reinnervasyon:

- Küçük polifazik MÜP



Kronik denervasyon-reinnervasyon:

- Nörojenik motor ünit potansiyelleri- yüksek amplitüd ve geniş süreli polifazik MÜP



- Azalmış rekrutment

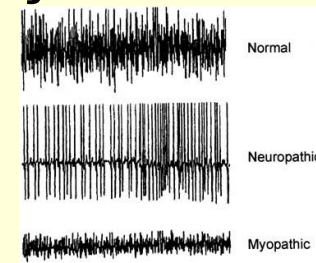


Table 2

Recommended nerve conduction studies in suspected lumbosacral radiculopathy

Nerve (muscle)	Nerve root	Parameters
General survey		
Sensory		
Sural	S1	Distal amplitude, peak latency
Motor		
Post tibial (AH)	S1	Distal and proximal amplitude, distal latency, conduction velocity
Peroneal (EDB)	L5	
Late response		
Posterior tibial (GM-S)	S1	H-reflex, amplitude, and motor amplitude
Additional nerve conduction studies for suspected root level		
Sensory		
Superficial peroneal	L5	
Motor		
Femoral (rectus femoris)	L2–4	

Abbreviations: AH, abductor hallucis; EDB, extensor digitorum brevis; GM-S, gastrocnemius-soleus.

Table 5

Needle electrode examination in suspected lumbosacral radiculopathy

Muscle	Nerve root (primary)	Terminal nerve	Approximate yield in radiculopathy at specified level ^a
General screen			
Rectus femoris or	L3–4	Femoral	75% (L3–4)
Vastus lateralis	L3–4	Femoral	67% (L3–4)
Tibialis anterior	L4–5	Peroneal	77% (L5)
Tibialis posterior	L5	Posterior tibial	92% (L5); 18% (S1)
Extensor digitorum brevis	L5	Peroneal	38 % (L5)
Gluteus medius or	L5	Superior gluteal	50% (L5); 33% (S1)
Gluteus maximus	S1	Inferior gluteal	64% (S1); 13% (L5)
Medial gastrocnemius	S1	Posterior tibial	83% (S1)
Paraspinal	Overlap		86% (L2–4); 16% (L5); 25% (S1)
Additional high yield muscles for given level of lumbosacral radiculopathy			
Iliacus	L2–3	N. to iliacus	71%
Adductor longus	L2–4	Obdurator	100%
Vastus medialis	L2–4	Femoral	66%
Peroneus longus	L5	Peroneal	100%
Tensor fascia lata	L5	Superior gluteal	100%
Extensor hallucis longus	L5–S1	Peroneal	73% (L5); 25% (S1)
Lateral gastrocnemius	L5–S1	Tibial	13% (L5); 91% (S1)
Biceps femoris—SH	S1	Sciatic	89%
Biceps femoris—LH	S1	Sciatic	100%

Abbreviations: LH, long head; SH, short head.

EMG ne zaman?

(Symptom Süresi)

- Akut sinir kökü hasarında, EMG'de bozukluk gözlenmeyebilir, belki sadece azalmış recruitment, H-refleksi ve F-dalgası bozukluğu olabilir
- Paraspinal kaslarda denervasyon (fibrilasyon ve PKD) ancak 10 gün sonra saptanır
- Ekstremitte kaslarında denervasyon ancak 3-6 hafta sonra
- Reinnervasyonla ilişkili Polifazik MÜP' ler 6-26 hafta sonra (proksimalden distale doğru)
- Kronik reinnervasyon hasardan 3-6 ay sonra...

En ideal zaman?

Hasardan sonraki **3 hafta-3 ay** arasında
(Subakut süreç)

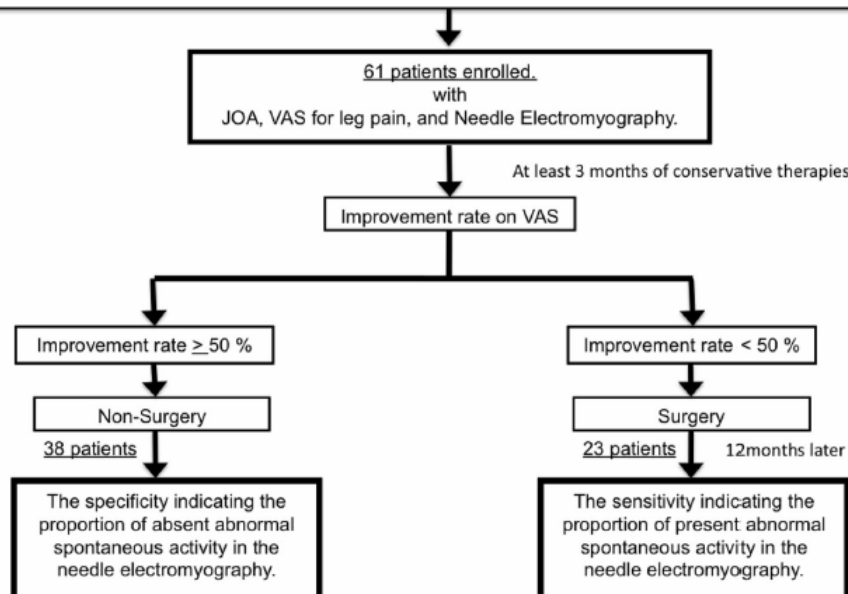
Diagnostic accuracy of multifidus muscle spontaneous activity by needle electromyography for the detection of lumbar foraminal and lateral exit-zone stenosis

Abstract

Purpose The medial branch of the posterior ramus of the lumbar spinal nerve is well known to be innervated independently and to end in the multifidus muscle without anastomosis. This prospective cohort study aimed to determine the diagnostic specificity and sensitivity of multifidus muscle denervation (MMD) by needle electromyography (N-EMG) for lumbar foraminal and lateral exit-zone stenosis (LF/LEZS).

Inclusion Criteria : Patients with unilateral dyesthesia and/ or leg pain at L4 or L5 sensory region with suspicious lumbar foraminal and lateral exit-zone stenosis.

Exclusion Criteria : 1) lumbar central canal stenosis (LCCS) or intracanal disc herniation, 2) severe diabetes, 3) renal or liver dysfunction, 4) the previous lumbar surgery, 5) myopathy, neuropathy, or collagen diseases, 6) only back or hip pain, 7) spondylolisthesis of Grade 1, 8) traumatic cases



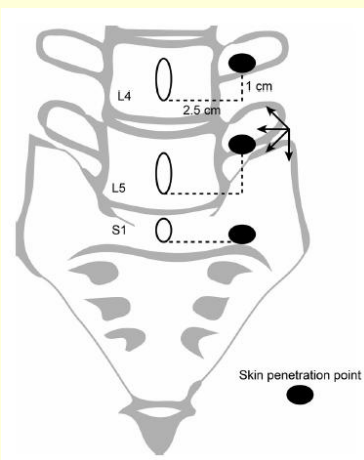
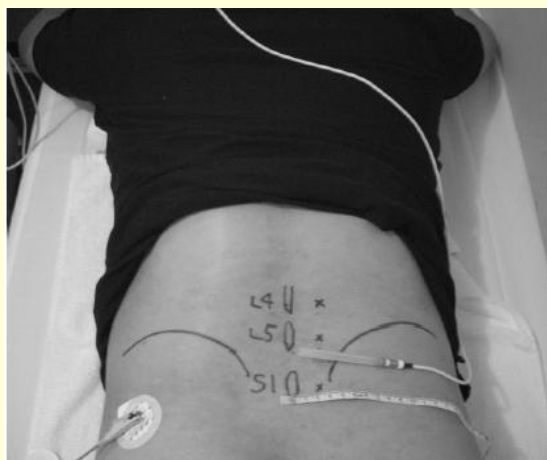


Table 4 Diagnostic specificity and sensitivity of lumbar multifidus muscle denervation by needle electromyography

	Non-surgery	Surgery	Total
Positive ^a	N = 4 (8.1 %)	21 (93.8 %)	25
Negative ^b	34 (91.9 %)	2 (6.2 %)	36
Total	38	23	61
Sensitivity (95 % CI)	Specificity	Positive predictive value	Negative predictive value
91.3 % (72–98.9)	92.1 % (78.6–98.3)	87.5 % (67.6–97.3)	94.6 % (81.8–99.3)

^a Positive indicating a total score >2 points in the mini-PM test as abnormal

^b Negative indicating a total score ≤2 points in the mini-PM test as normal

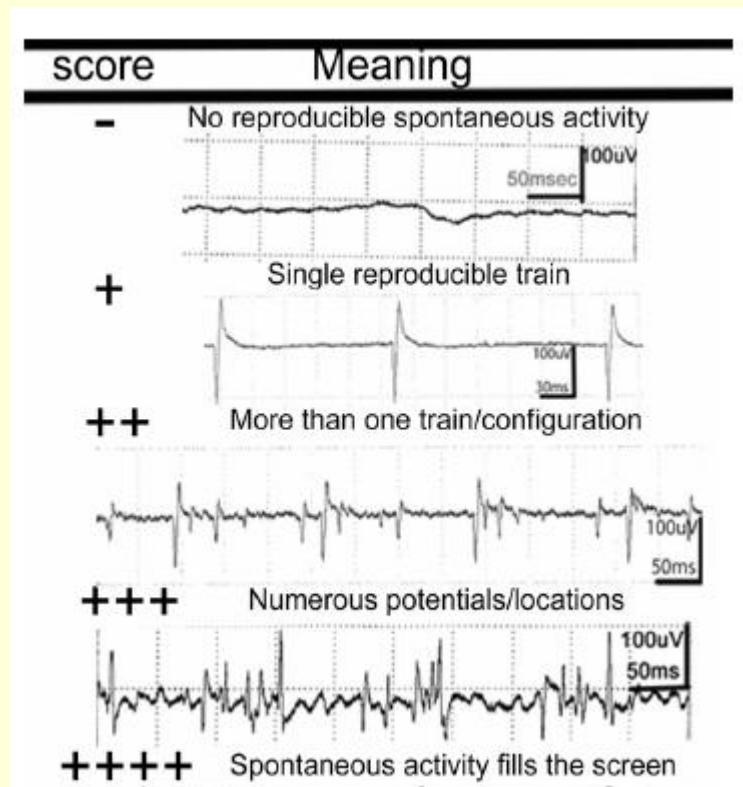


Fig. 4 Modified mini-paraspinal mapping scoring. After assessing the score (0–4 points) at every skin penetration point, the total scores (0–48 points) were calculated

patients were positive. The diagnostic sensitivity and specificity were 91.3 and 92.1 %, respectively.

Conclusions Needle electromyography is a simple and available additional method for the diagnosis of LF/LEZS.

Lumbar Spinal Stenoz-Cauda Equina

Lumbar Spinal Stenoz: Bel Ağrısı+Nörojenik klaudikasyon (yürümek ve ayakta durmakla tetiklenir).

- EMG' de sıklıkla kronik, bilateral, çok seviyede, lumbosakral radkülopati, nadiren unilateral ya da bilateral monoradikülopati

Cauda equina: Unilateral ya da bilateral alt ekstremitelerde kuvvetsizlik, eyer tarzı hipoestezi, idrar retansiyonu.

- EMG' de poliradikülopati, çoklu seviyede bilateral radikülopati, S2,S3, S4 sinir kökü tutulumu

Diagnostic value of electrical stimulation of lumbosacral roots in lumbar spinal stenosis

B. Zileli¹, C. Ertekin², M. Zileli¹,
N. Yünter³

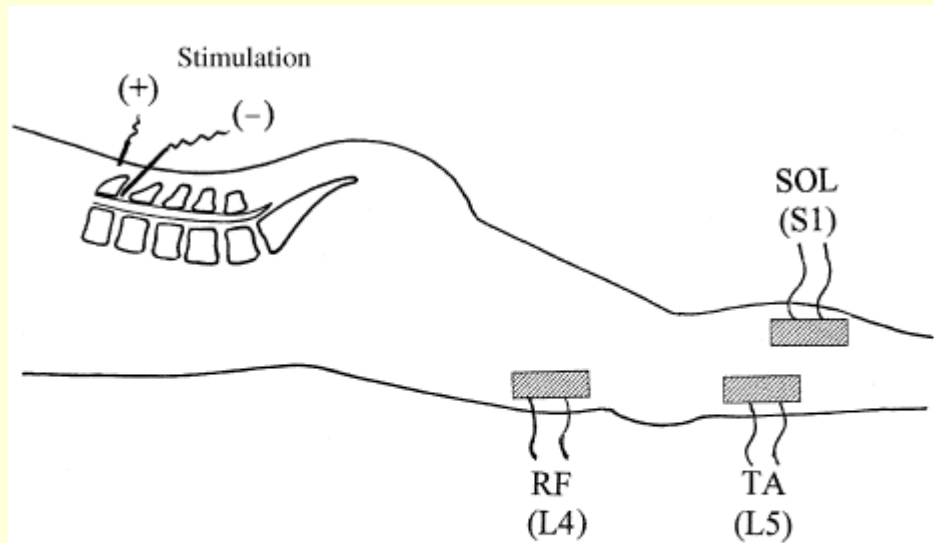


Figure 1. Sites of stimulation and recording electrodes during lumbosacral root stimulation (RF = Rectus Femoris, TA = Tibialis Anterior, SOL = Soleus muscles).

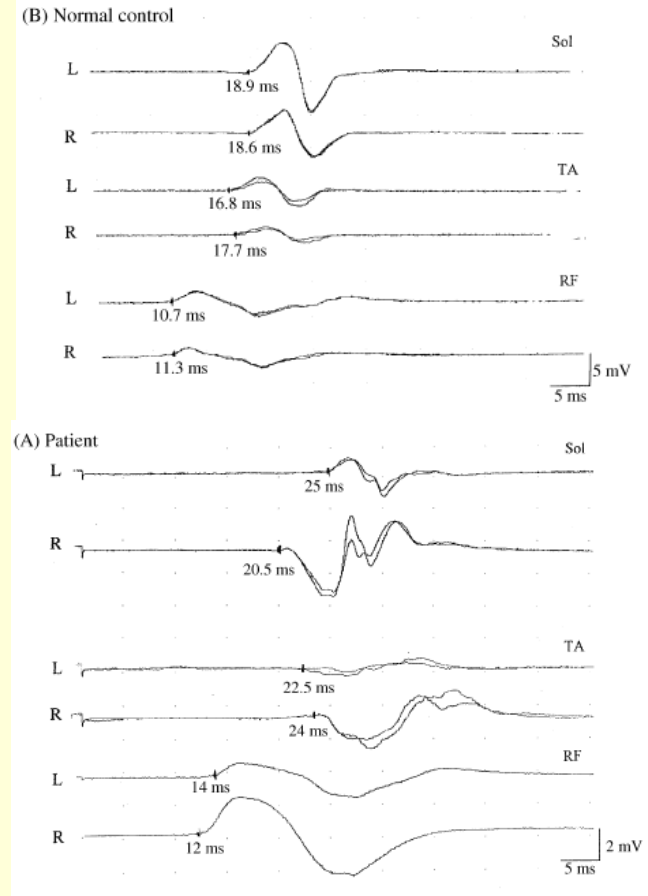


Figure 2. (A) Patient no. 19 had bilateral L5 and S1 clinical motor involvement. Lumbar MRI has shown L4–L5 and L5–S1 pathology. EMG revealed a bilateral L4 and S1 involvement, while RS showed bilateral L4, L5 and S1 pathology. (B) Normal control. (R = right, L = left; Sol = Soleus, TA = Tibialis anterior, RF = Rectus Femoris muscles).

Needle EMG and nerve conduction study revealed pathology in 15/20 patients, and electrical stimulation of the roots in 17/20 patients.

stimulation of the roots. *Conclusions* – Electrical root stimulation revealed more abnormalities in patients with LSS in comparison with needle EMG. However, both methods seemed to complement each other to show additional pathology in a given patient.

Diagnostic value of cauda equina motor conduction time in lumbar spinal stenosis

Yaprak Seçil^{a,*}, Ayşen Süzen Ekinci^a, Korhan Barış Bayram^b, Tülay Kurt İncesu^a, Figen Tokuçoğlu^a,
Nevin Gürgör^a, Tolga Özdemirkıran^a, Mustafa Başoğlu^a, Cumhuri Ertekin^{c,*}

ABSTRACT

Objective: Lumbar spinal stenosis (LSS) is a chronic degenerative disease with pain in the back, buttocks and legs aggravated by walking and relieved after rest without associated vascular disease of lower extremities observed in patients between 50 and 60 years. Several studies, using different methods indicated an association between slowing or blocking of root-nerve conduction and LSS. None of the previous research had applied the more conceivable methods such as recording the cauda equina potentials from the lumbar level or stimulating the spinal roots within the canal using either leg nerves or muscles. In this study, electrical lumbar laminar stimulation was used to demonstrate prolongation of cauda equina motor conduction time in lumbar spinal stenosis.

Methods: Twenty-one LSS patients and age matched 15 normal control subjects were included in the study. Lumbar laminar electrical stimulation from L1 and L5 vertebra levels were applied by needle electrodes. Compound muscle action potential (CMAP) from gastrocnemius muscles were recorded bilaterally. Latency difference of CMAPs obtained from L1 and L5 spine levels were accepted as the cauda equina motor conduction time (CEMCT).

Results: CEMCT was significantly longer in patient group when compared to normal controls. Mean latency difference was 3.59 ± 1.07 msec on the right side, 3.49 ± 1.07 msec on the left side in LSS group, it was 1.45 ± 0.65 msec on the right side, 1.35 ± 0.68 msec on the left side on normal control group ($p < 0.0001$).

Conclusions: The prolongation of CEMCT was statistically and individually significant in patient group. This may indicate that lower lumbosacral motor roots were locally and chronically compressed due to lumbar spinal stenosis. Lumbar spinal stenosis may have induced local demyelination at the cauda equina level.

Significance: Since the prolongation of CEMCT was found only in patients with LSS, the method of laminar stimulation can be chosen for patients with uncertain diagnosis of LSS.

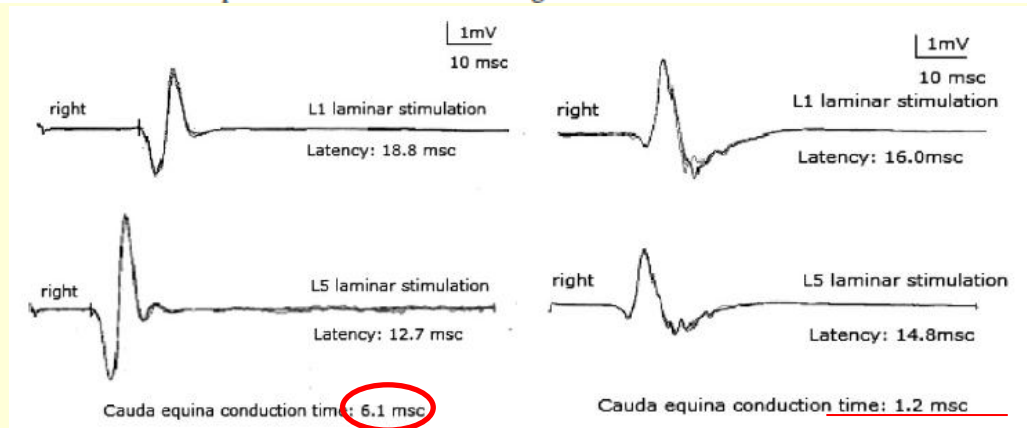
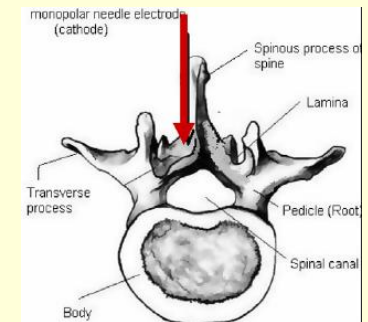
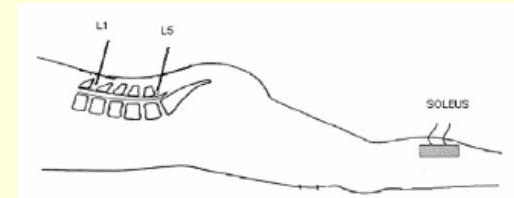
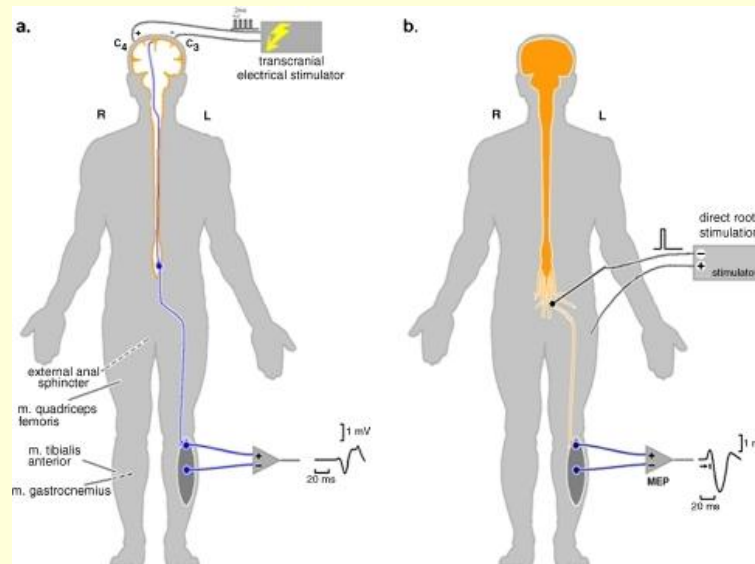
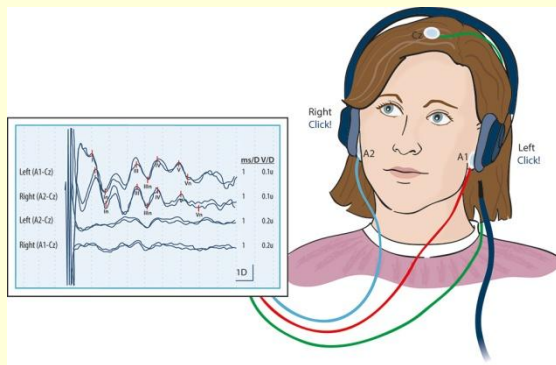
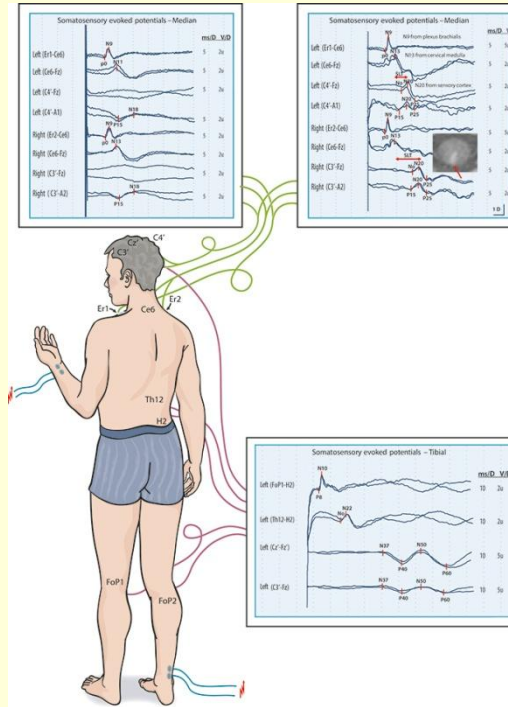
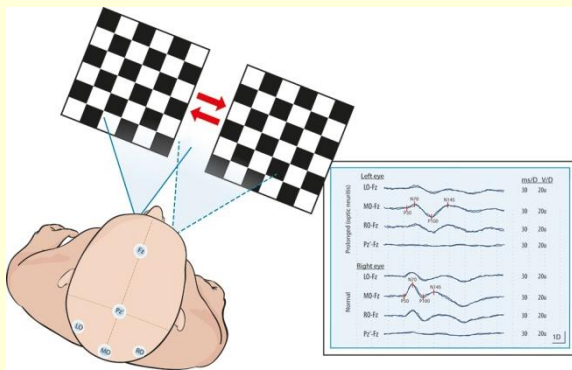


Fig. 2. Soleus motor response recordings from right sides of a patient and a normal subject. Latency difference between L1–L5 (cauda equina motor conduction time) was found 1.2 msec on normal subject, CEMCT was found 6.1 msec in patient with lumbar spinal stenosis. All MEPs were superimposed.

INTERRATER RELIABILITY OF THE NEEDLE EXAMINATION IN LUMBOSACRAL RADICULOPATHY

ABSTRACT: Low back pain and lumbar radiculopathy are among the most common painful disorders affecting the adult population. This study hypothesizes that there is good correlation between the diagnostic impression of an unblinded electromyographer, using clinical and electromyographic information, and an independent electromyographer, who uses the needle examination only to assess for lumbar radiculopathy. This is a prospective, single-blinded, observational pilot study. The needle examination was electronically recorded, reproduced, and shown to a second examiner, blinded to all clinical data. Diagnostic impressions from both examiners were recorded and evaluated for agreement. Six recorded cases were reviewed by 66 blinded examiners. Overall diagnostic agreement was 46.9% (60.5% faculty level, 28.5% resident level). Logistic regression shows a strong association between training level and agreement on diagnostic impression (odds ratio, 1.9; 95% confidence interval, 1.12–3.22; $P = 0.019$). This study shows that there is fair interrater reliability between faculty-level examiners and poor reliability among resident-level examiners when the needle examination is used to evaluate patients with lumbar radiculopathy.

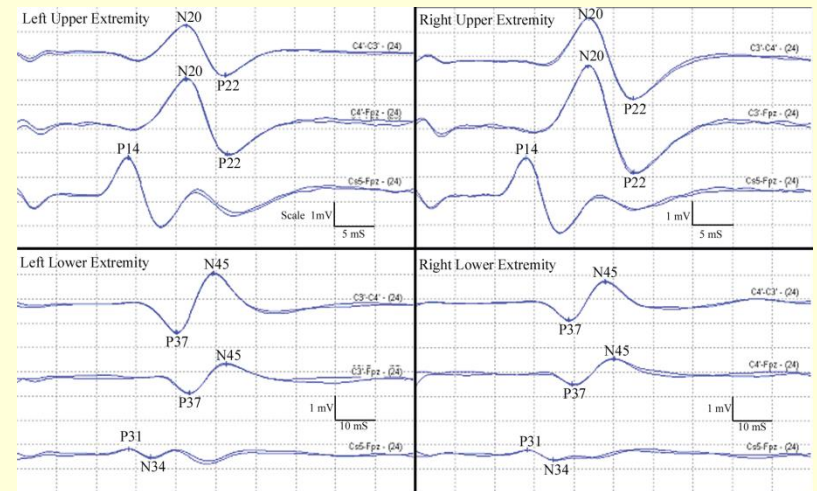
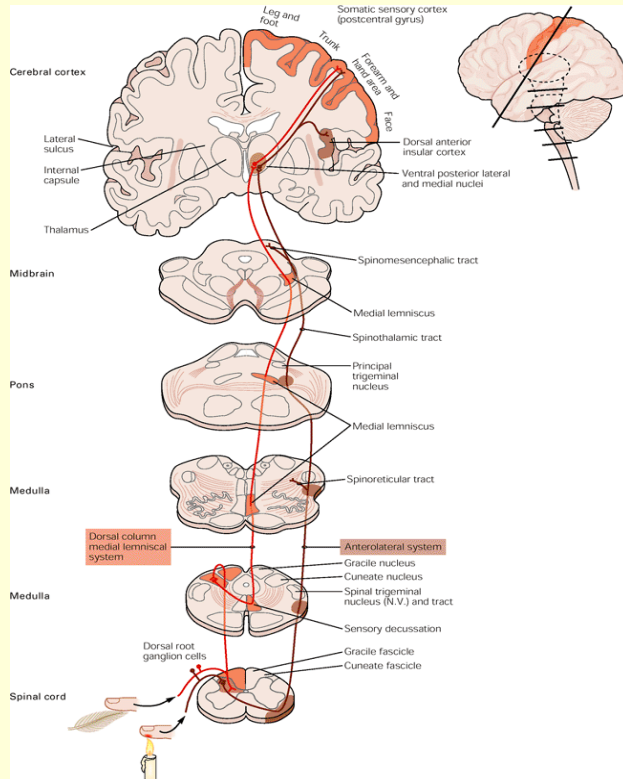


Uyarılmış Potansiyeller

- Görsel, işitsel ya da somatosensoriyel uyarı sonrası oluşan cevaplardır.
- Gecikmiş cevap, sorumlu spesifik duyuşal yolaklardaki iletim gecikmesine bağlıdır.
- Dalga formlarının baskılanması ya da kaybı ise iletim bloğu ya da sorumlu jeneratördeki disfonksiyona bağlıdır.

SEP

- Çevresel uyarılarla serebral korteksten elde edilen kayıtlar: **Dorsal kolon izleme**

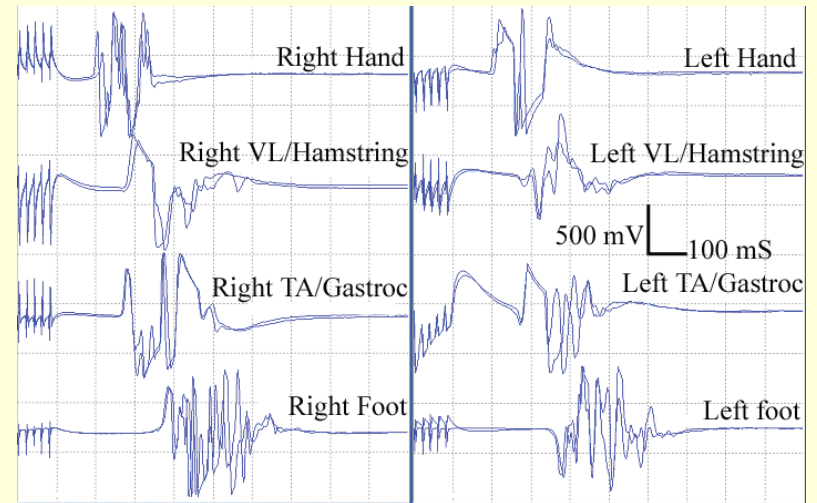
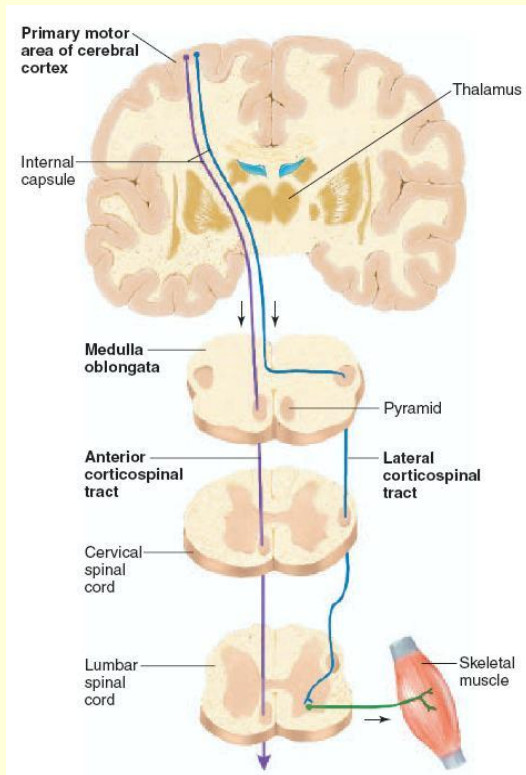


SEP

- Üst servikal bölge, beyin sapı somatosensoriyal yol
monitörleme: Median (C6-8,T1) ve ulnar sinir
(C8,T1)
- Alt servikal bölge: Ulnar sinir (C8,T1)
- C7 altı: Posterior tibial sinir

MEP

- İzole kortikospinal yolak: Anterior kolon izleme
- Motor yolların yapısal ve işlevsel bütünlüğü



Continuous intraoperative electromyographic and transcranial motor evoked potential recordings in spinal stenosis surgery

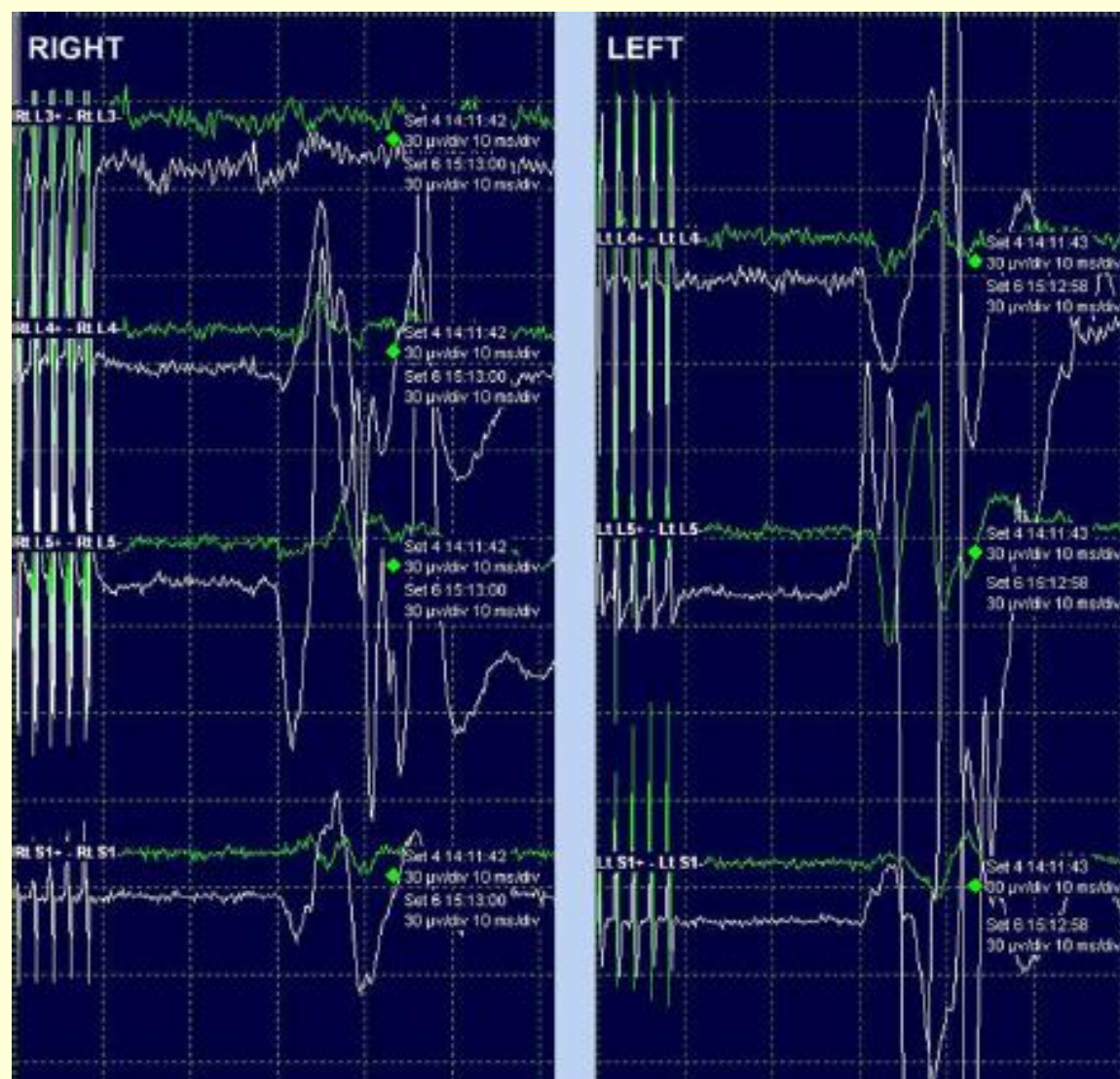


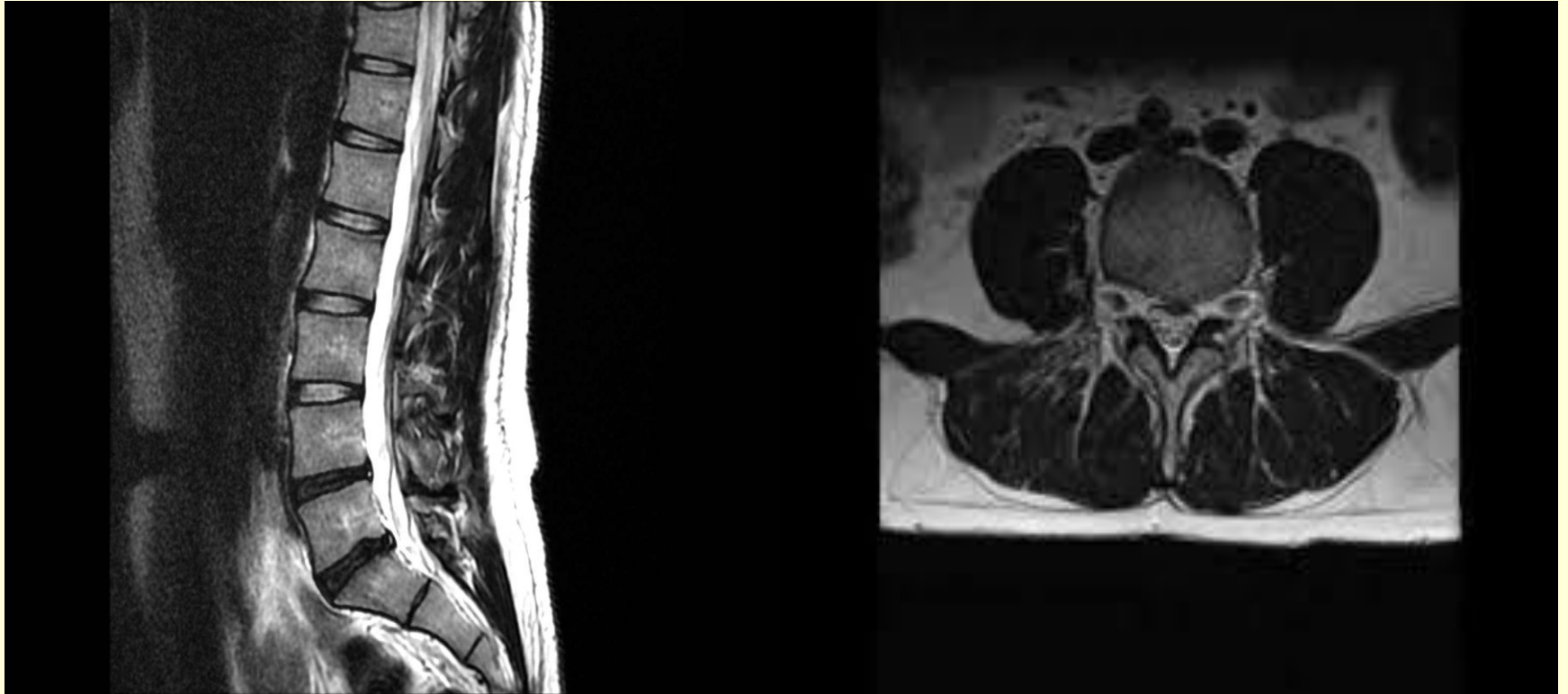
Fig. 1. Patient No. 7. Transcranial motor evoked potentials (TcMEP) amplitudes before (green wave) and after (white line) decompression in a 60-year-old female patient revealing an 80% increase at L4 and L5 levels. The patient showed marked postoperative improvement.

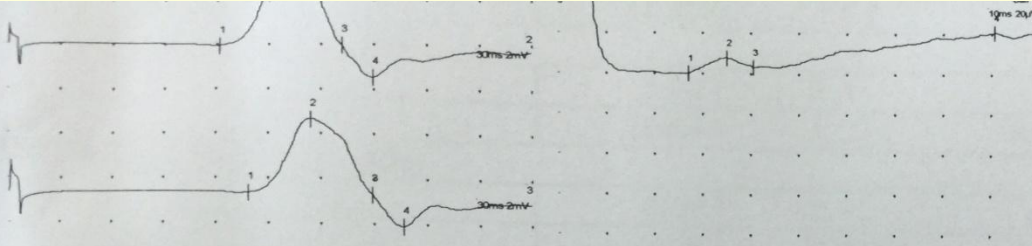
56 y, E,

Sağ bacakta ağrı, güçsüzlük ve
uyuşukluk

Hastaya dış merkezde lomber diskektomi olduğu söylenerek operasyon önerilmiş, ancak hasta ikinci bir görüş almak için başvuruyor.

- 10 senedir Tip2 DM öyküsü
- FM: B/L SLR: 60 derece,
- NM: sağ alt ekstremitte proksimal 3-/5,
distal 4/5 kuvvet, sağ alt ekstremitte L2-3
ile uyumlu hipoestezi, patolojik refleks yok





Bilateral sural sinirde DSAP amp. küçüktür. Sağ peroneal ve bilateral tibial sinirde motor ileti hızı yavaştır. Sol peroneal sinir normaldir. Tibial F yanıt latansı uzundur. Bilateral alt ekstremitte kaslarında parsiyel (Sağ AT kasında total) denervasyon saptandı. Karın kasları ve sağ üst ekstremitte kasları normaldir.

SONUÇ: Hastada bilateral L2-S2 miyotomlarında (sağ>sol) nörojenik tutuluş saptandı. Sağ AT kası total denervedir ve izole peroneal nöropati saptanmadı. Kompresif radikülopatiler her ne kadar katkıda bulunsa da bu bulgular görüntülemeye belirtilen diskopatiler ile açıklanamayacak kadar yaygındır. Hastada diyabetin bulunması ve EMG'de hafif derecede, sensorimotor aksonal polinöropatinin de varlığı diyabetik amiyotrofinin de (**diyabetik lumbosakral radikülopleksopati**) olası tanıları arasında düşünülmesini gerektirmektedir. Bir diğer olası tanı **motor nöron hastalığıdır** (Progressif musküler atrofi), ancak bulgular sadece alt ekstremitelere sınırlı olduğu için elektrofizyolojik kriterleri şu an karşılamamıştır. Klinik ve radyolojik korelasyon gerekir, eğer en azından kompresif lezyonun sağdaki düşük ayağa yol açtığı düşünülüyorsa girişim yapılabilir. Bir süre sonra EMG kontrolü önerilir.

Dr. Zeki Odabaşı

Tedavi

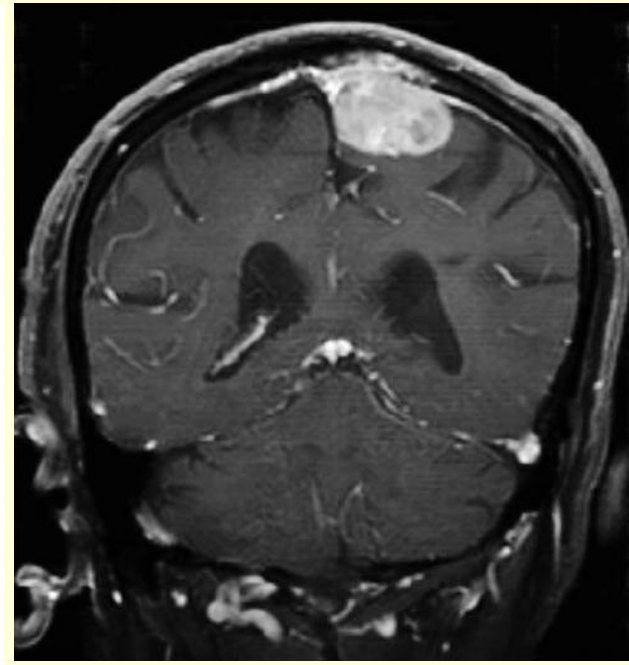
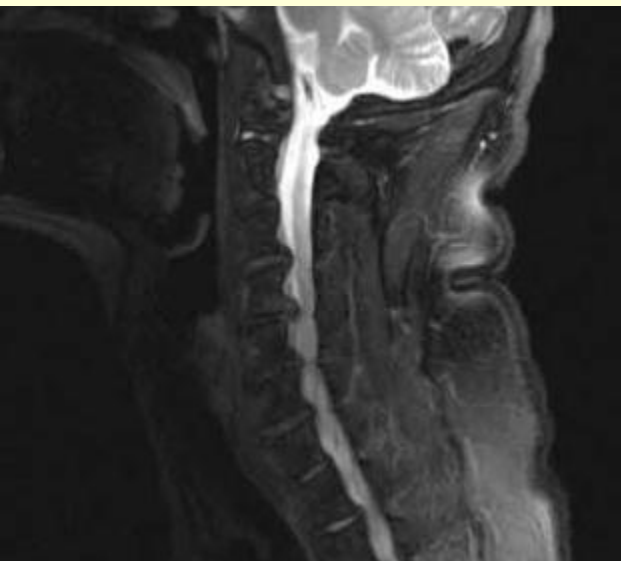
- Diabetik lumbosakral pleksopati nedeniyle yüksek doz pulse-steroid
- Şeker kontrolü
- Nöropatik Ağrı tedavisi

SONUÇ: Hasta desteksiz yürüyor, ağrısı yok .



Central Causes of Foot Drop: Rare and Underappreciated Differential Diagnoses

Patients: The first patient, a 46-year-old man with a remote history of lumbar spine fracture and L4-L5 instrumentation/fusion, presented with progressive weakness and numbness of the left foot, followed within 3 months by similar symptoms in the right foot. Lumbar spine imaging failed to reveal compressive nerve root pathology. Electromyography, nerve conduction studies, and muscle and nerve biopsy suggested a preganglionic lesion and ruled out a peripheral cause. Upper spine magnetic resonance imaging (MRI) revealed significant spinal stenosis at C4-C7 and T11-T12. Patient 2 was a 66-year-old man with a known left parasagittal convex meningioma diagnosed 2 years prior presented with a progressive right foot drop over 2 months. Spine imaging was normal, and serial brain MRI confirmed a slowly enlarging parasagittal meningioma.



Clinical utility of surface EMG: Report of the Therapeutics and Technology Assessment Subcommittee of the American Academy of Neurology

Conclusions

1. Based on Class II data, SEMG is considered unacceptable as a clinical tool in the diagnosis of neuromuscular disease at this time (Type E recommendation).
 2. Based on Class III data and inconclusive or inadequate Class II data, SEMG is considered unacceptable as a clinical tool in the diagnosis of low back pain at this time (Type E recommendation).
 3. Based on Class III data, SEMG is considered an acceptable tool for kinesio logic analysis of movement disorders; for differentiating types of tremors, myoclonus, and dystonia; for evaluating gait and posture disturbances; and for evaluating psychophysical measures of reaction and movement time (Type C recommendation).
- Further studies comparing specificity and sensitivity of FWEMG with SEMG are to be encouraged.

İlginiz İçin Teşekkürler