

Place de la prolothérapie neurale (infiltrations sous-cutanées de glucosé 5%) dans le traitement des douleurs périnéales et du syndrome de stress post-traumatique

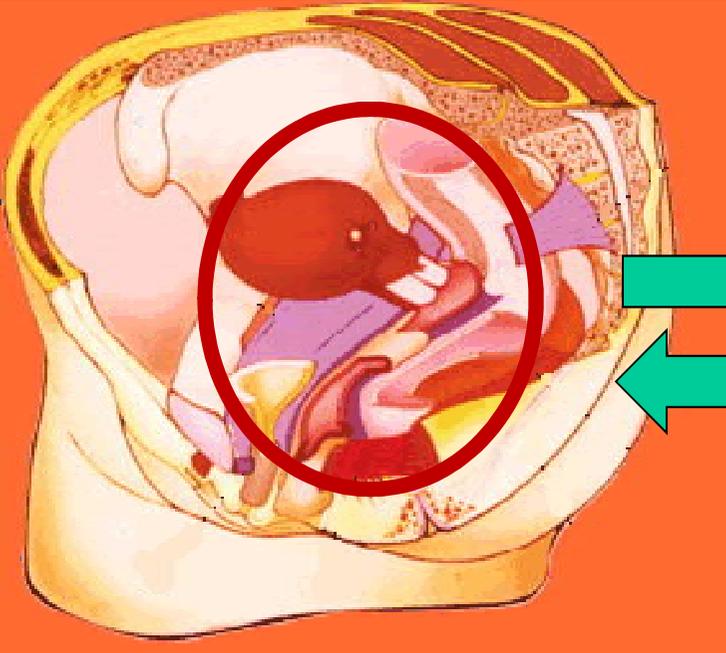
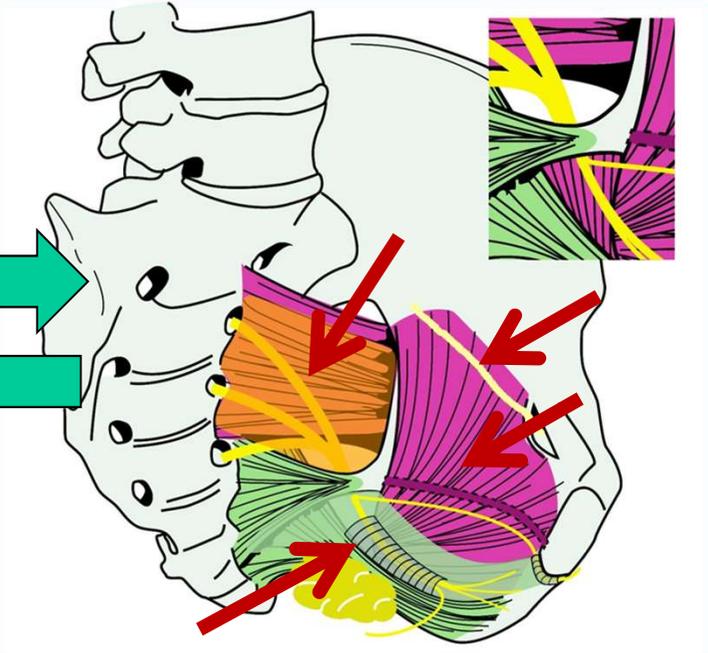
Dr Jacques Beco

Université de Liège

CHC Clinique Sainte Elisabeth Heusy

SMAV, Verviers le 16/10/2019

Origine de la douleur: Organes ou muscles-nerfs ?

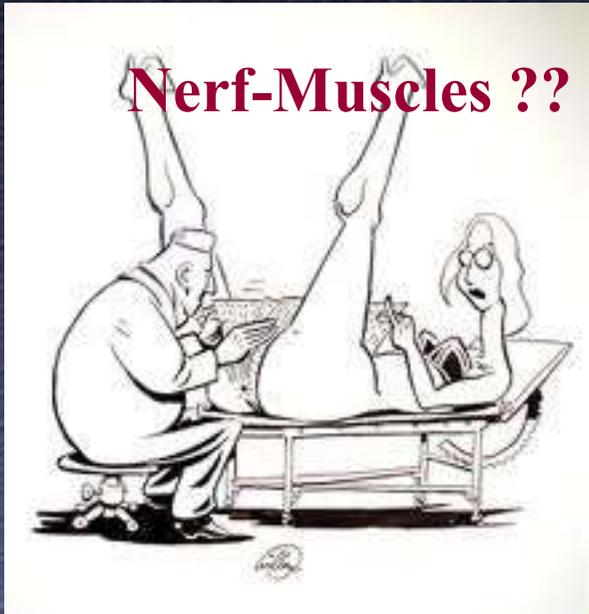
Symptômes	« Organique » Le Contenu	« Fonctionnelle » Le Contenant
Douleur périnéale Cystite Dyspareunie Incontinence Vaginite Vulvite Coccygodynie Corps étranger		

Organes

Nerfs et Muscles

Douleur périnéale => diagnostic tardif Cause

Nerf-Muscles ??



**Gynéco-Uro-Proctologues
Nerfs et muscles ??**

Périnée ??



**Neurologues et Neurochirurgiens
Toucher vaginal ou rectal ??**

Névralgie: signes cliniques

1. Douleur à la pression du tronc nerveux
2. Palpé-roulé douloureux
3. Hyper ou hypoesthésie locale

Les diagnostiquer = éviter beaucoup
d'examens complémentaires et d'opérations
inutiles => \$\$\$\$\$\$\$\$\$\$

Palpé-roulé douloureux

(territoire du nerf pudendal)



Si douloureux => névralgie

Test de sensibilité à l'aiguille

(territoire du nerf pudendal)



Vulve



Para-Anal

Si hypo ou hyper (allodynie) => névralgie

Comment traiter une névralgie en première ligne ?

- Classiquement: anesthésiques locaux et/ou corticoïdes
- La prolothérapie neurale: injection de glucosé 5%

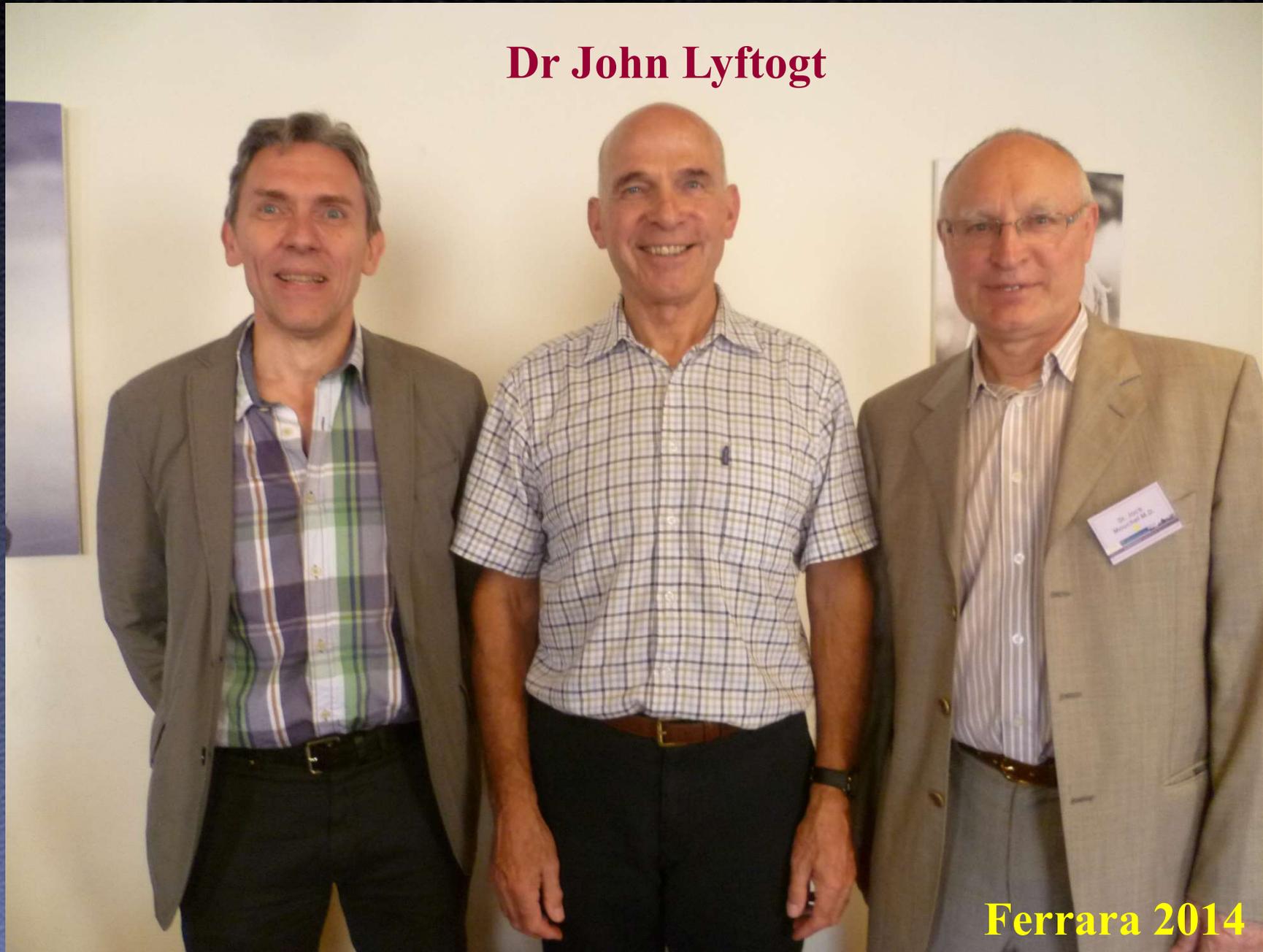


Dr John Lyftogt

Depuis 2009

90 workshops - 17 pays - 3500 médecins formés

Dr John Lyftogt



Ferrara 2014

We inject buffered Dextrose 5% in sterile water (D5W)

near nerves in the **interstitium**

bypassing the **Blood Nerve Barrier**

correcting **neuronal energy deprivation**

“to help the progress of the nerve towards health”

Fibres C et TRPV1

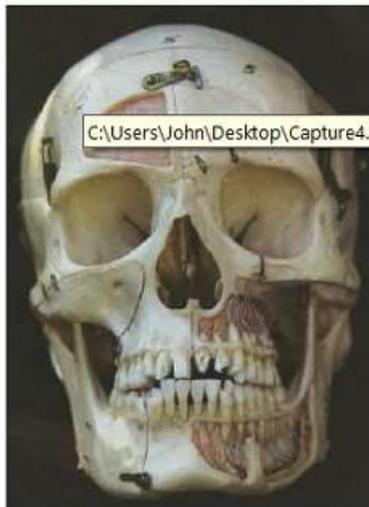
Névralgie et inflammation neurogène

Hypothèse actuelle:

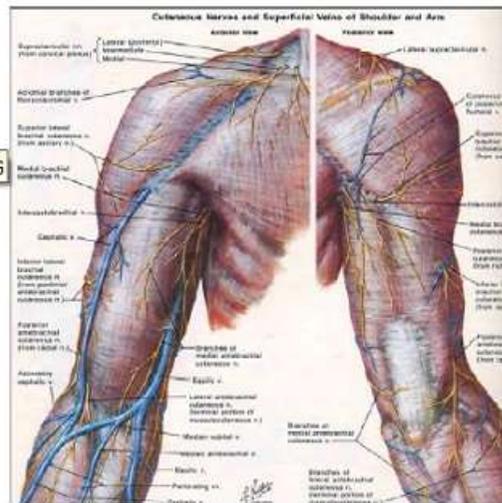
1. Irritation du nerf par frottement ou compression
2. Stimulation des nervi nervorum (fibres C) => libération Substance P et CGRP => inflammation avec œdème et douleur du nerf (via TRPV1)
3. Œdème du nerf
4. Augmentation de la pression dans le nerf
5. Réduction de la vascularisation avec hypoxie et glycopénie notamment des fibres C
6. Libération de Substance P et CGRP à l'extrémité du nerf
7. Inflammation neurogène et douleur de l'organe cible (via TRPV1)

1. Irritation par frottement ou compression du nerf

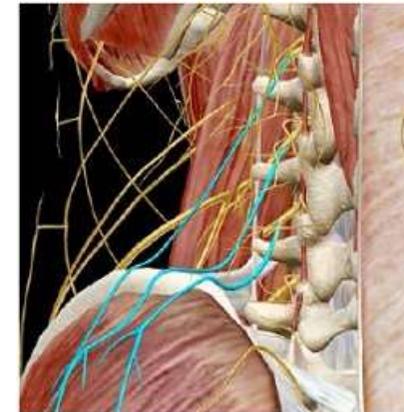
VALLEIX POINT 1841 CHRONIC CONSTRICTION INJURY



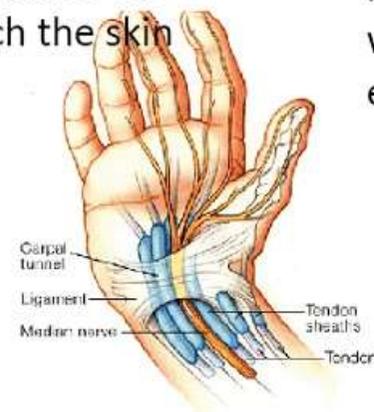
where the nerve emerges from the bony canal



where it pierces a muscle or aponeurosis to reach the skin

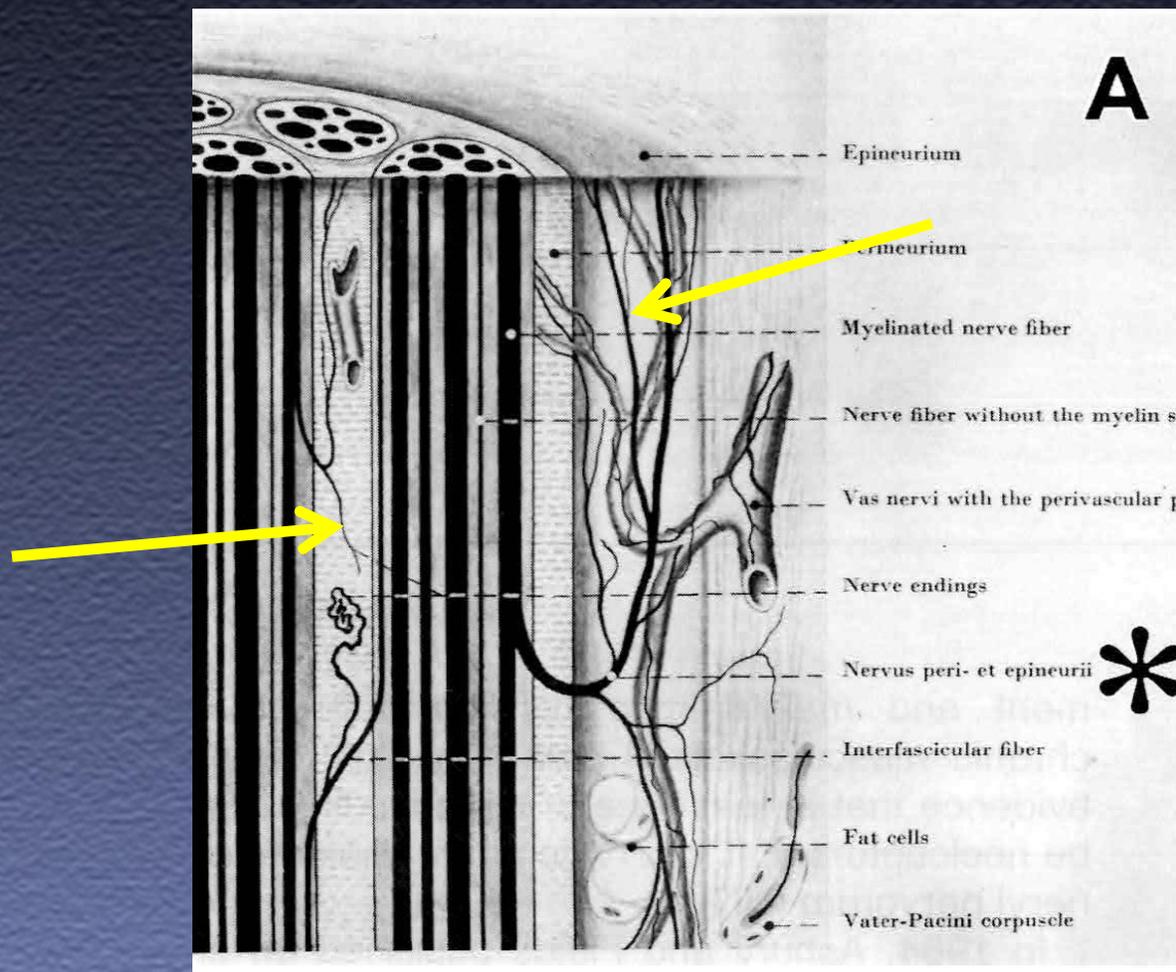


where a superficial nerve rests on a resisting surface where compression is easily made



Where it is entrapped b/w fibrous tissue

2. Stimulation des nervi nervorum (fibres C-TRPV1)
=> douleur du nerf (potentiels d'action)
=> œdème (libération SP et CGRP)



3. Oedème du nerf

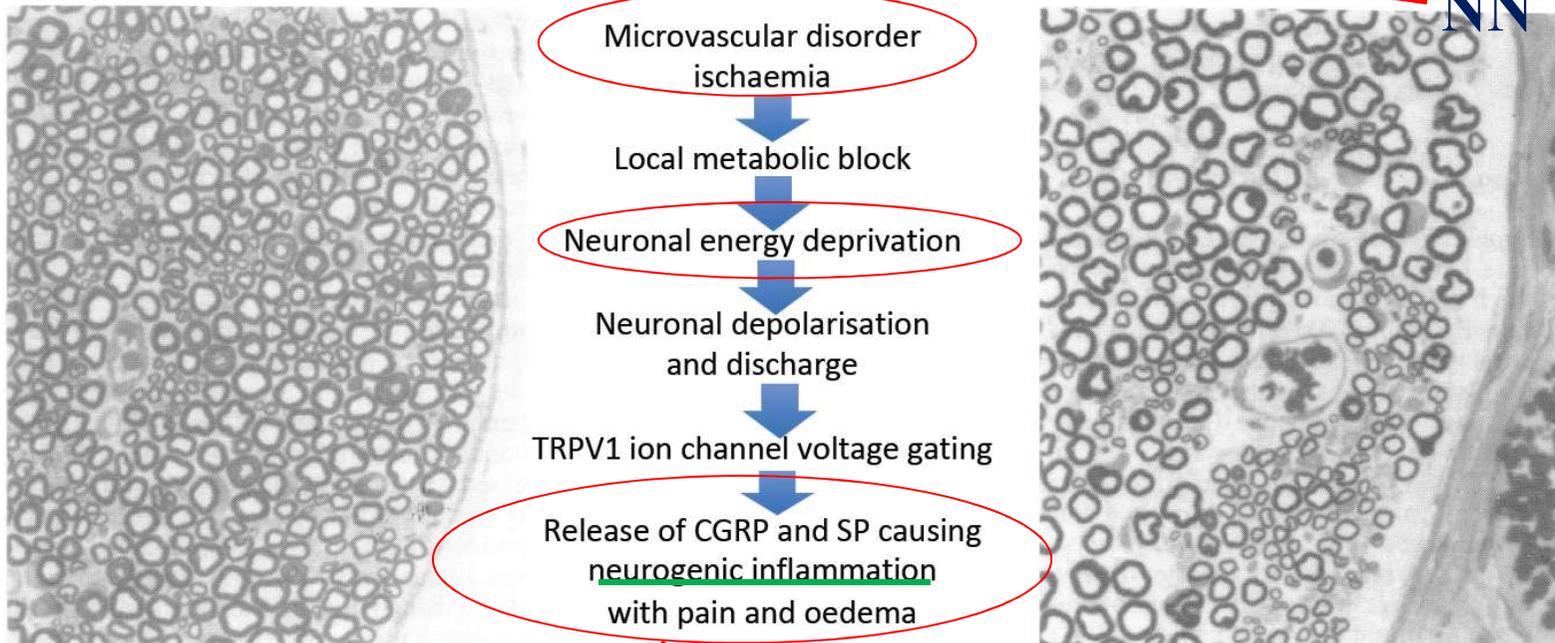
=> augmentation de la pression intra-neurale

Goran Lundborg, Robert Myers, Henry Powell

Nerve compression injury and increased endoneurial fluid pressure: "miniature compartment syndrome"

Journal of Neurology, Neurosurgery, and Psychiatry 1983;46:1119-1124

NN



Normal fascicle with tightly packed axons in close association with perineurium. (x 500)

Light micrograph of major fascicle from sciatic nerve of rat which was compressed at a pressure of 80 mm Hg for 4 hours. Extensive oedema in sub-perineurial and perivascular spaces. Oedema also separates nerve fibres. (x 500)

Organe cible: peau, muscle, articulation, organe

*Activation of C Fibers by Metabolic Perturbations
Associated with Tourniquet Ischemia*

M. Bruce MacIver, M.Sc., Ph.D.,* Darrell L. Tanellian, M.D., Ph.D.†

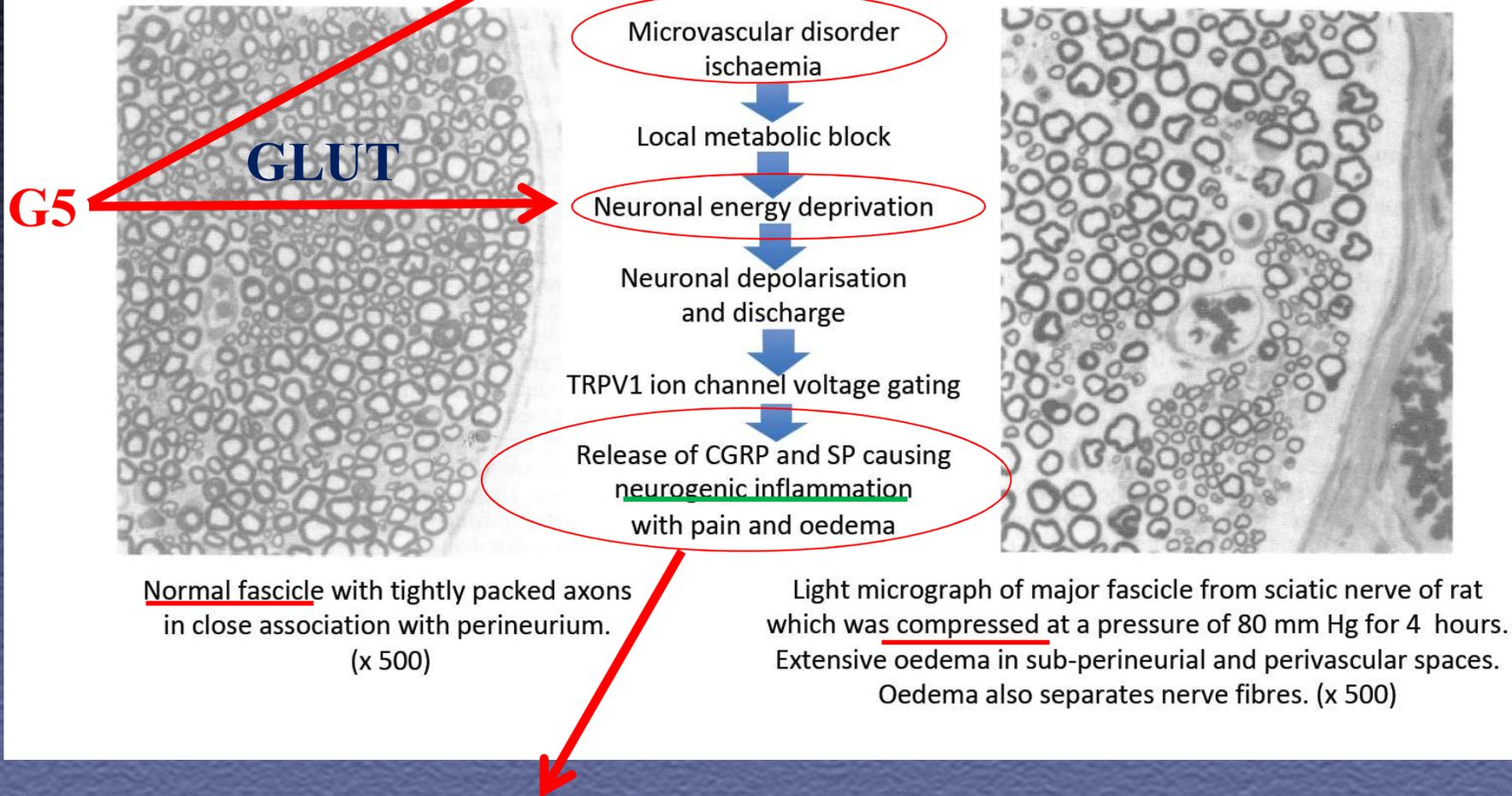
The mechanism whereby hypoglycemia or hypoxia result in C fiber activation can be answered by further study. However, it is known that depletion of glucose and O₂ result in reduction of high-energy substrates, such as ATP, necessary for enzymatic processes. During anaerobic metabolism, the breakdown of one molecule of glucose to lactate results in the production of two molecules of ATP as compared to 38 molecules of ATP during complete aerobic oxidation of glucose.¹⁸ Anoxia *in vitro* results in

Prolothérapie neurale: injection de G5 = « bypass »

Goran Lundborg, Robert Myers, Henry Powell

Nerve compression injury and increased endoneurial fluid pressure: a "miniature compartment syndrome"

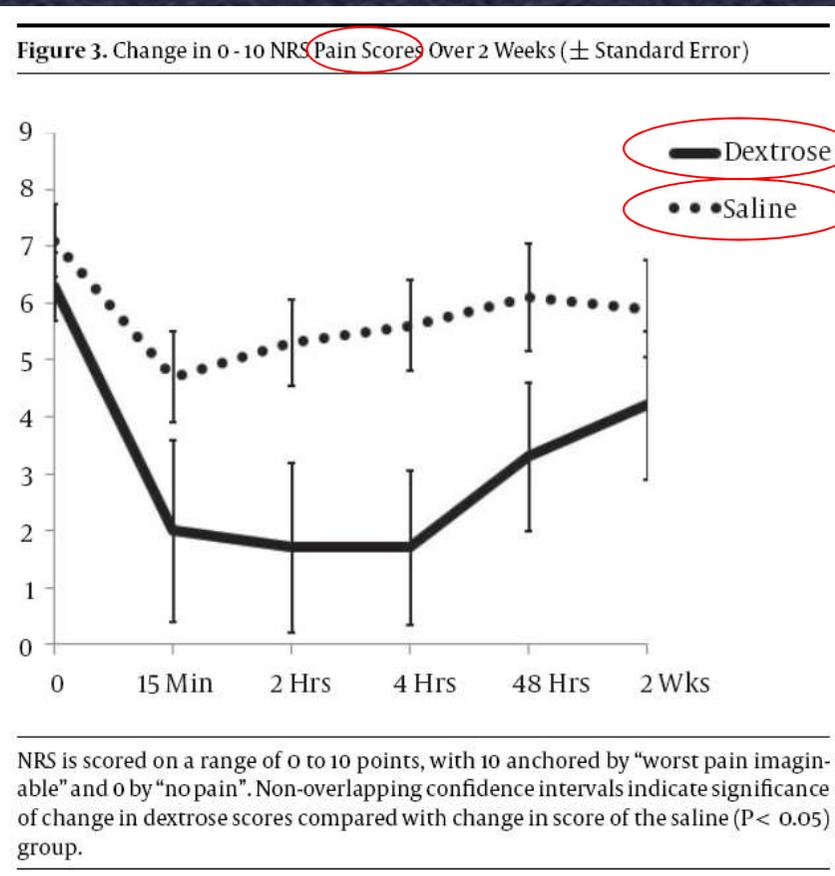
Journal of Neurology, Neurosurgery, and Psychiatry 1983;46:1119-1124



Organe cible: peau, muscle, articulation, organe

Short Term Analgesic Effects of 5% Dextrose Epidural Injections for Chronic Low Back Pain: A Randomized Controlled Trial

Liza Maniquis-Smigel,¹ Kenneth Dean Reeves,^{2,*} Howard Jeffrey Rosen,³ John Lyftogt,⁴ Cassie Graham-Coleman,⁵ An-Lin Cheng,⁶ and David Rabago⁷



Randomized Double-Blinded Clinical Trial of 5% Dextrose versus Triamcinolone Injection for Carpal Tunnel Syndrome Patients

Yung-Tsan Wu, MD,^{1,2} Ming-Jen Ke, MD,¹ Tsung-Yen Ho, MD,¹ Tsung-Ying Li, MD,^{1,2}
Yu-Ping Shen, MD,¹ and Liang-Cheng Chen MD, MS¹

Results: All patients (27 wrists per group) completed the study. Compared with the steroid group, the dextrose group exhibited a significant reduction in pain and disability through the 4th to the 6th month ($p < 0.01$).

Interpretation: Our study demonstrates that perineural injection of D5W is more beneficial than that of corticosteroid in patients with mild-to-moderate CTS at 4 to 6 months postinjection.

ANN NEUROL 2018

Periarticular dextrose prolotherapy instead of intra-articular injection for pain and functional improvement in knee osteoarthritis

This article was published in the following Dove Press journal:

Journal of Pain Research

17 May 2017

[Number of times this article has been viewed](#)

Conclusion: Periarticular prolotherapy has comparable effects on pain and disability due to knee OA to intra-articular injections, while avoiding risks of complications.

We inject buffered Dextrose 5% in sterile water (D5W)

near nerves in the **interstitium**

bypassing the **Blood Nerve Barrier**

correcting **neuronal energy deprivation**

“to help the progress of the nerve towards health”

WHAT SOLUTION DO WE USE FOR PIT?

We use an isotonic dextrose solution (5%) in sterile water (D5W)
injected near nerves in the interstitium

DO NOT use normal saline, lidocaine or corticosteroids



D5W comes in prepared bags,
100 ml, 250 ml, 500 ml, 1000 ml

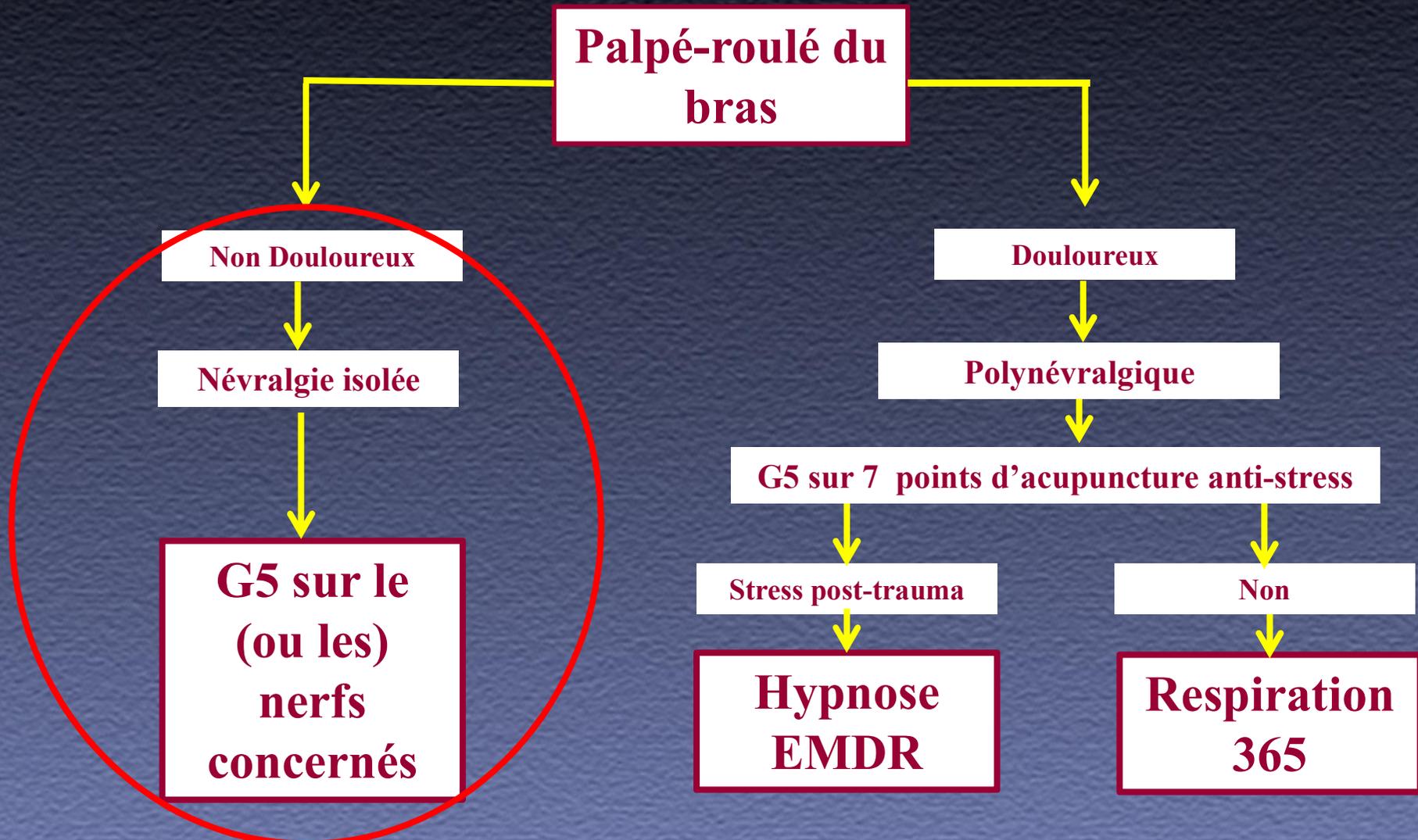
The pH is between 3.5- 5.6 and
needs to be buffered to a
pH of 7.4

Use 0.5 ml of Sod. Bicarb 8.4%
for every 100 ml of D5W

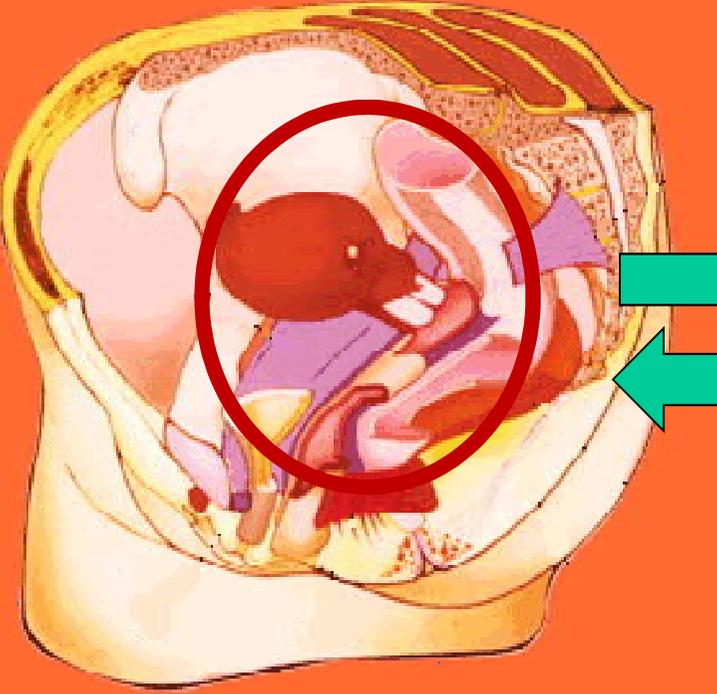
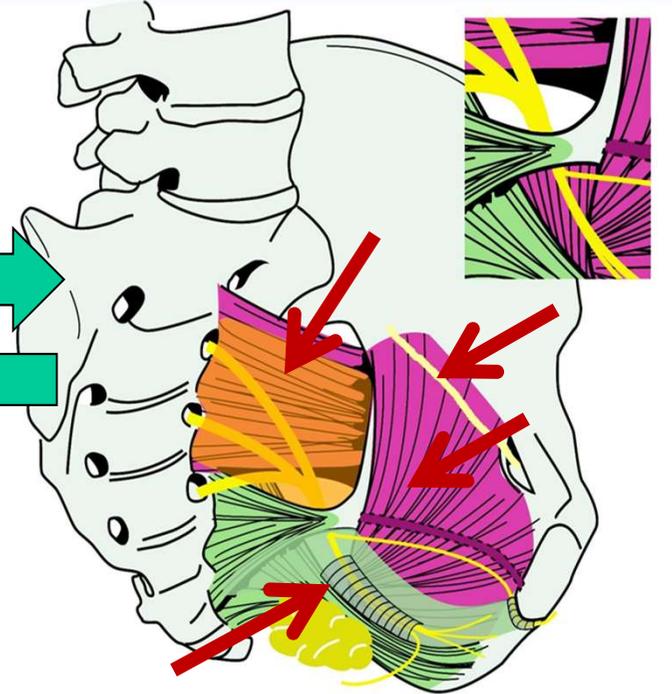
Check pH



Névralgie isolée ou Polynévralgique



Origine des symptômes: Organes ou muscles-nerfs ?

Symptômes	« Organique » Le Contenu	« Fonctionnelle » Le Contenant
Douleur périnéale Cystite Dyspareunie Incontinence Vaginite Vulvite Dyspareunie Coccygodynie Corps étranger Proctalgie-SAS		

Organes

Nerfs et Muscles

Nerfs impliqués dans les douleurs périnéales

Pudental - Obturateur

Les autres:

Ilio-inguinal, génito-fémoral et ilio-hypogastrique

Clunéaux supérieurs, moyens, inférieurs

Racines sacrées (épidurale caudale = « sweet caudal »)

Ganglion impar

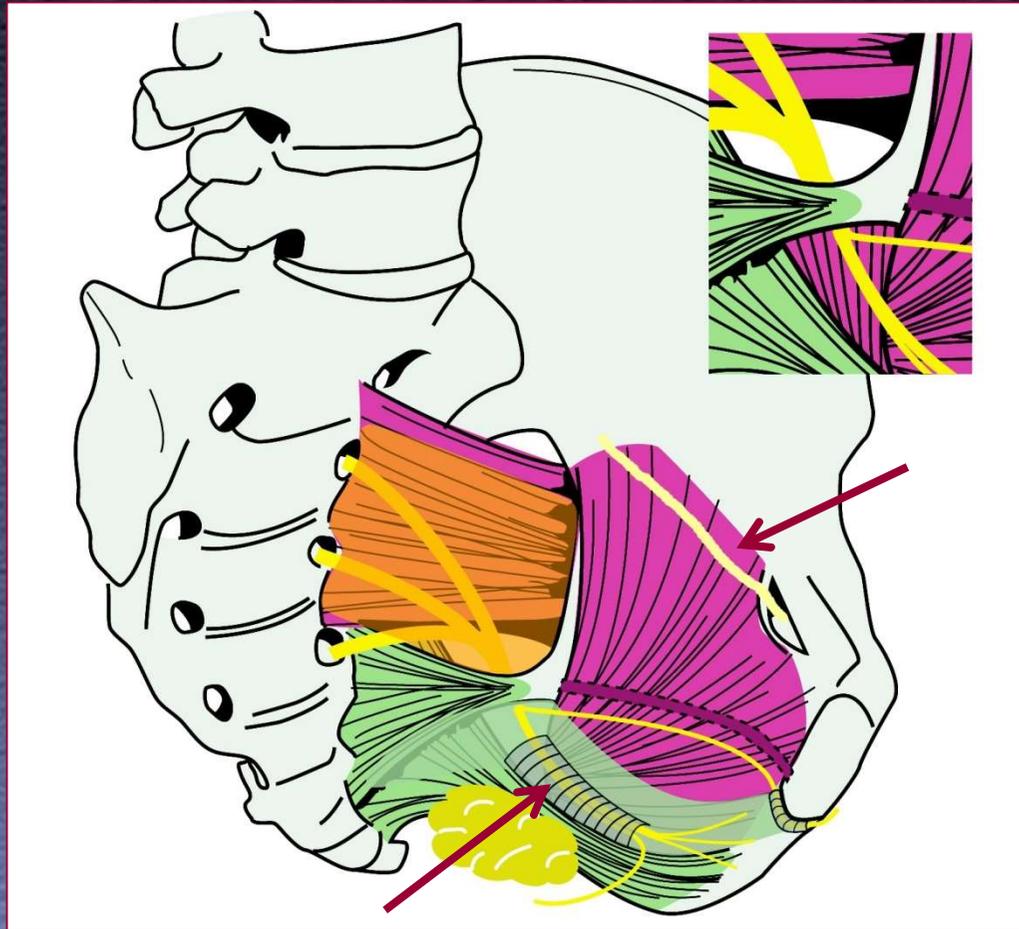
et/ou

7 points d'acupuncture anti-stress

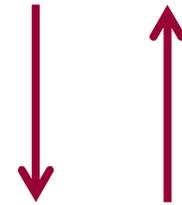
si palpé-roulé du bras douloureux

Le trio infernal

Névralgies pudendales - Névralgies obturatrices
Trigger points musculaires pelviens

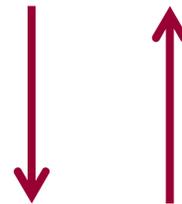


Névralgies Pudendales



« Trigger Points »

Muscles Obturateurs



Névralgies Obturatrices

Névralgies pudendales et obturatrices

Etiologies principales

Etiologies	Névralgies pudendales	Névralgies obturatrices
« Trigger points » musculaires (stress, inflammation organe, surcharge musculaire)	Oui	<u>Oui +++</u>
Trauma du bassin	<u>Oui +++</u>	Oui
Accouchement	Oui	<u>Oui +++</u>
Vélo	<u>Oui +++</u>	Non
Chirurgie vaginale (position, valve, atteinte directe)	Oui	<u>Oui +++</u>
Position assise prolongée	<u>Oui +++</u>	Non
Périnée descendant >2cm	<u>Oui +++</u>	Non

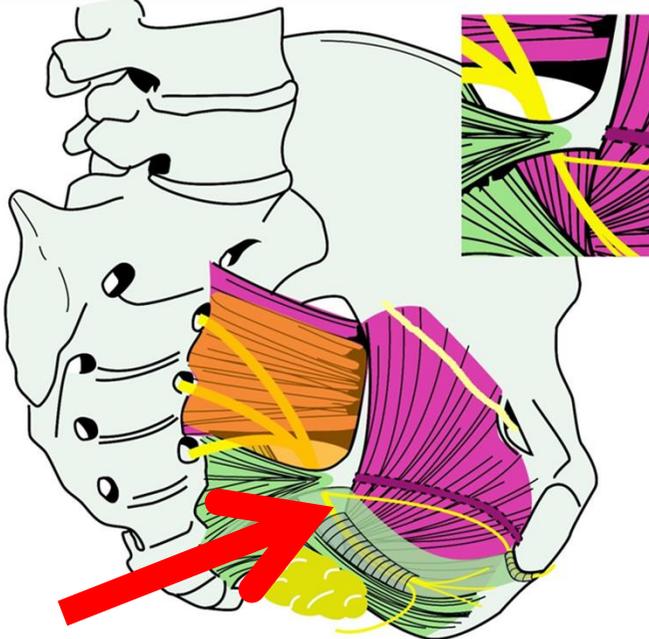
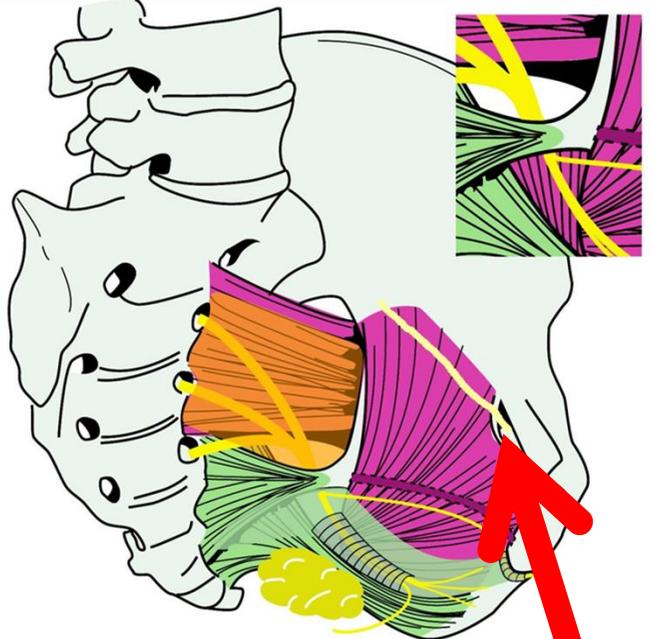
Névralgies pudendales et obturatrices

Symptômes

Symptômes	Névralgies Obturatrices	Névralgies Pudendales	Les deux
Douleurs périnéales en position assise		X	
Douleurs et/ou corps étranger intra-vaginaux	X		
Douleurs hypogastrique-genou-hanche	X		
Sexual arousal syndrome – Proctalgies		X	
Cystalgies- Dysurie Pollakiurie-Nycturie- Urgences - Incontinence			X
Dyspareunie			X
Dyschésie			X
Prostatite abactérienne			X

Névralgies pudendales et obturatriques

Examen clinique

Signes cliniques	Névralgie pudendale	Névralgie obturatrice
Douleur à la palpation par voie vaginale ou rectale	 <p>5 h et 7 h</p>	 <p>3 h et 9 h</p>

Névralgies pudendales et obturatriques

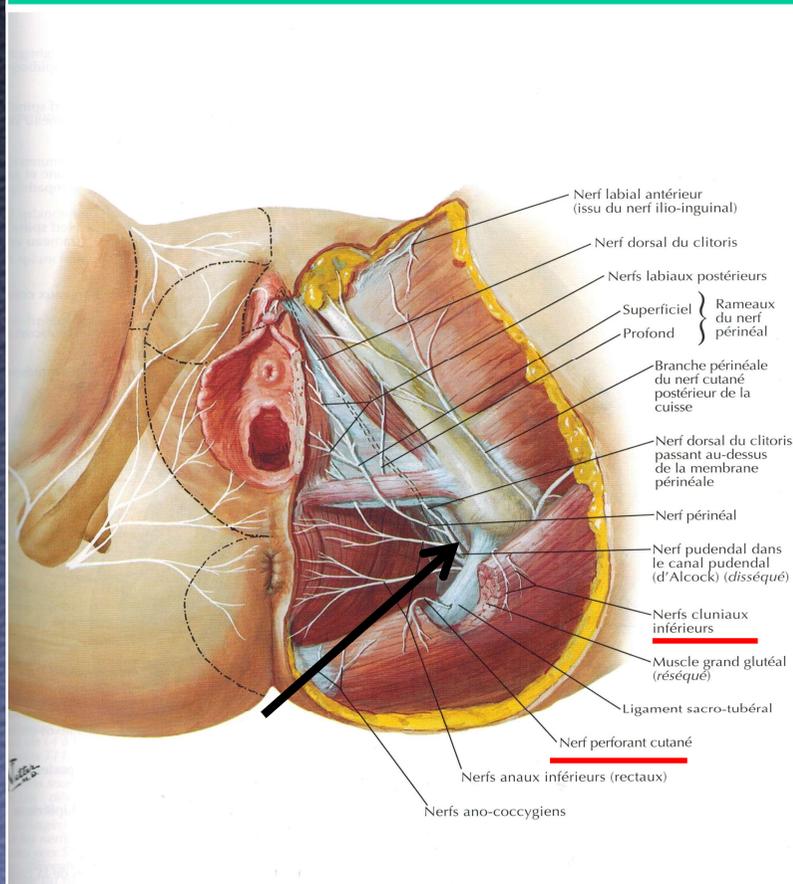
Examen clinique

Signes cliniques	Nevralgie pudendale	Névralgie obturatrice (80%)
Palpé-Roulé douloureux	 <p>A photograph showing a person's groin area. A person wearing white gloves is palpating the skin. A small red mark is visible on the skin. A copyright notice 'Copyright GEP 2002' is at the bottom.</p>	 <p>A photograph showing a person's thigh area. A person wearing white gloves is palpating the skin. There are small blue marks on the skin.</p>
Hypo ou hyperesthésie (aiguille ou autre)	 <p>A photograph showing a person's groin area. A person wearing white gloves is using a needle to test the skin. A small red mark is visible on the skin.</p>	 <p>A photograph showing a person's thigh area. A person wearing white gloves is using a needle to test the skin. There are small blue marks on the skin.</p>

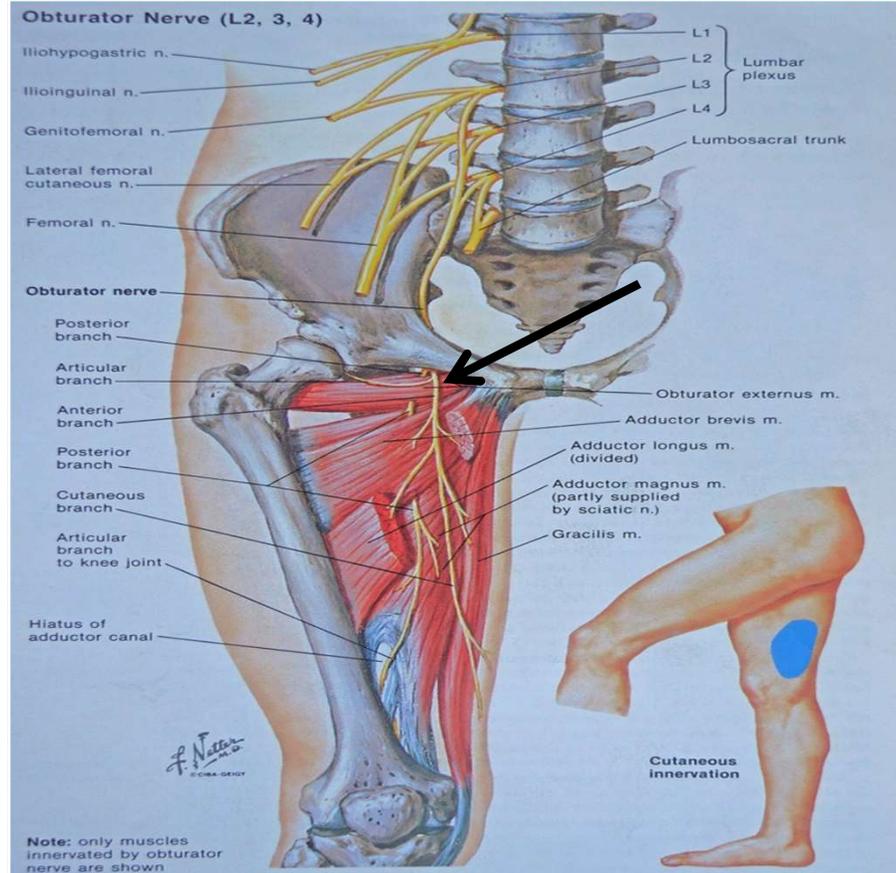
Traitement curatif N°1:

Prolothérapie neurale (1 séance / 15j – 4 séances en moyenne)

Nevralgie pudendale



Névralgie obturatrice



En association avec:
Protection du nerf pudendal

- Eviter le vélo
- Eviter de soulever des objets lourds en position accroupie

- Eviter la position assise prolongée et utiliser coussin =>



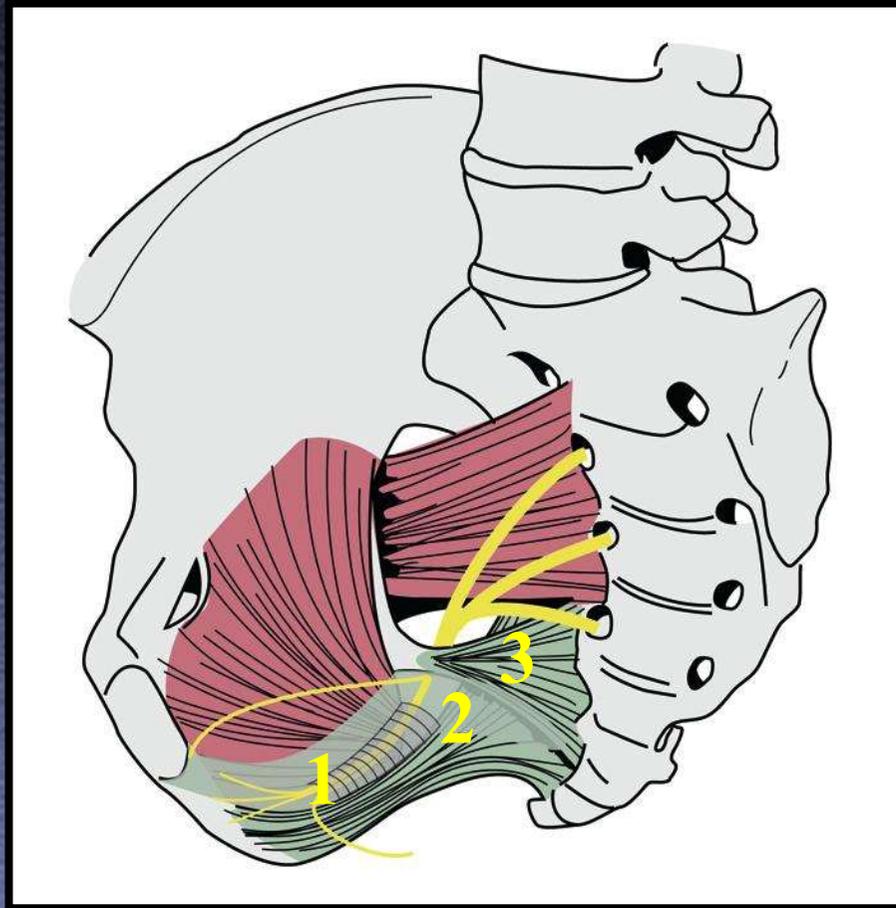
Coussin en forme de U
=> ATE Ensival

En cas d'échec:
Infiltrations du nerf pudendal sous scanner



Images du Dr JF Biquet , CHC Heusy

Et si nécessaire:
Décompression chirurgicale du nerf
pudendal

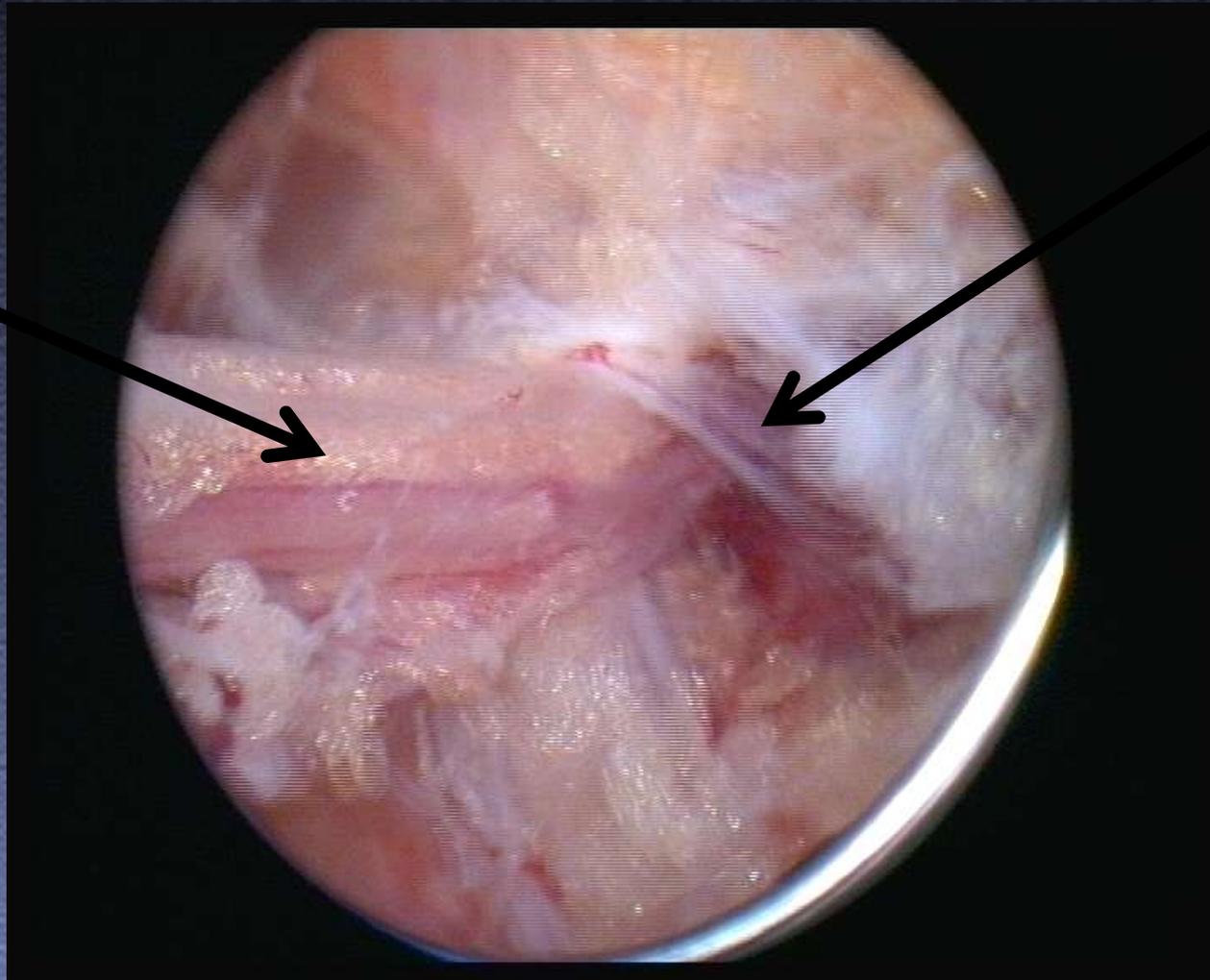


Release of the nerve from
the sacral roots to the
transverse muscle

1. Alcock's canal: perineal and rectal branches
2. *Fascia lunata*
3. Sacrospinous ligament
4. Nerves through the ligament ?
5. Transposition of the nerve

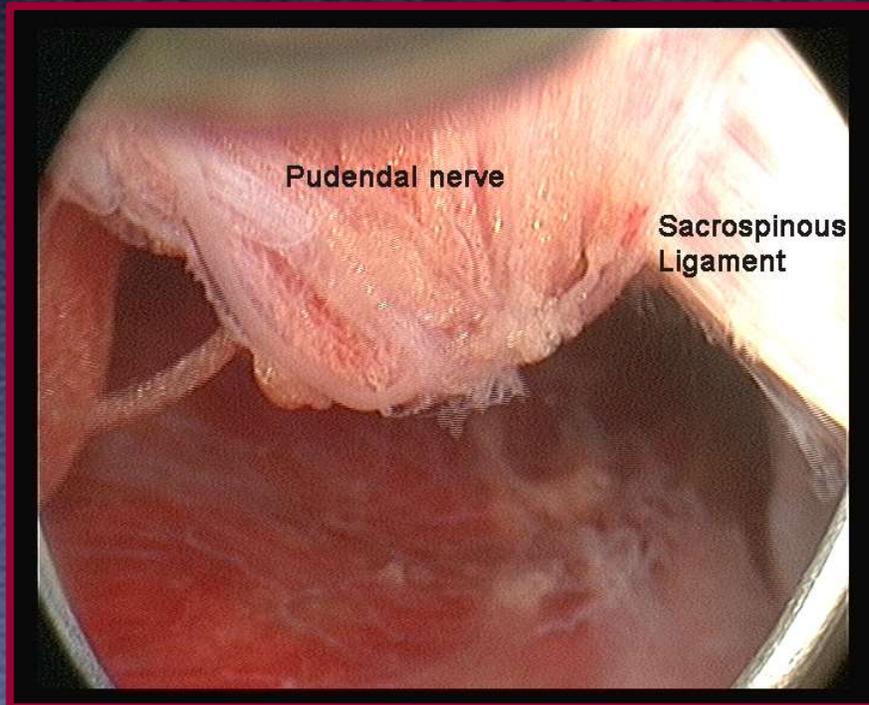
Pudendoscopy: Alcock's canal

**Pudental
Nerve**

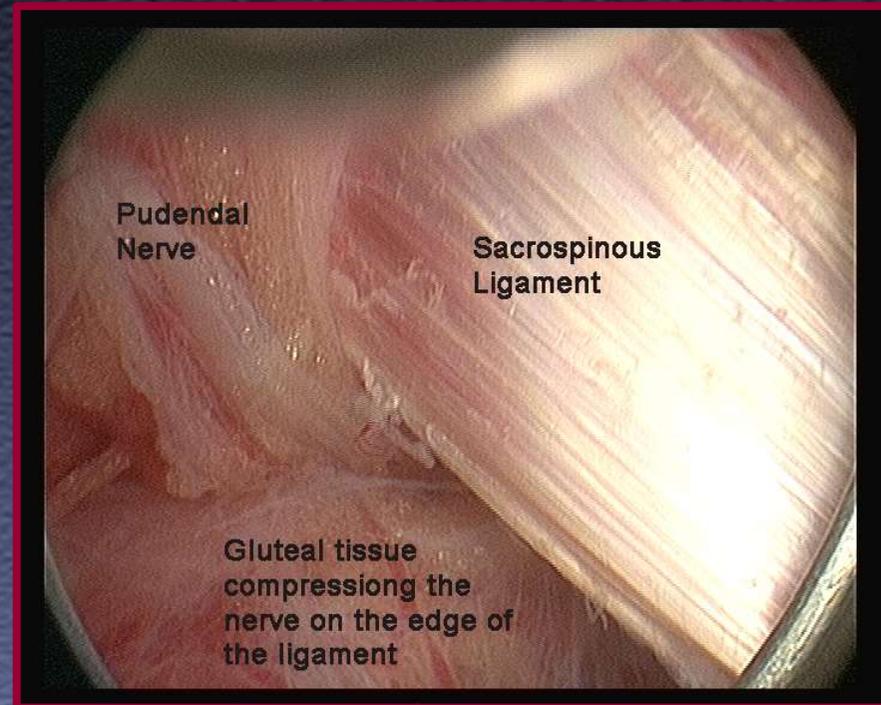


**Alcock's
Canal**

Operative Pudendoscapy



Debout



Assis



Endoscopic transperineal pudendal nerve decompression: operative pudendoscopy

Jacques Beco^{1,4} · Laurence Seidel² · Adelin Albert³

Table 1 Effect on the symptoms of the pudendal syndrome (*n* = 113)

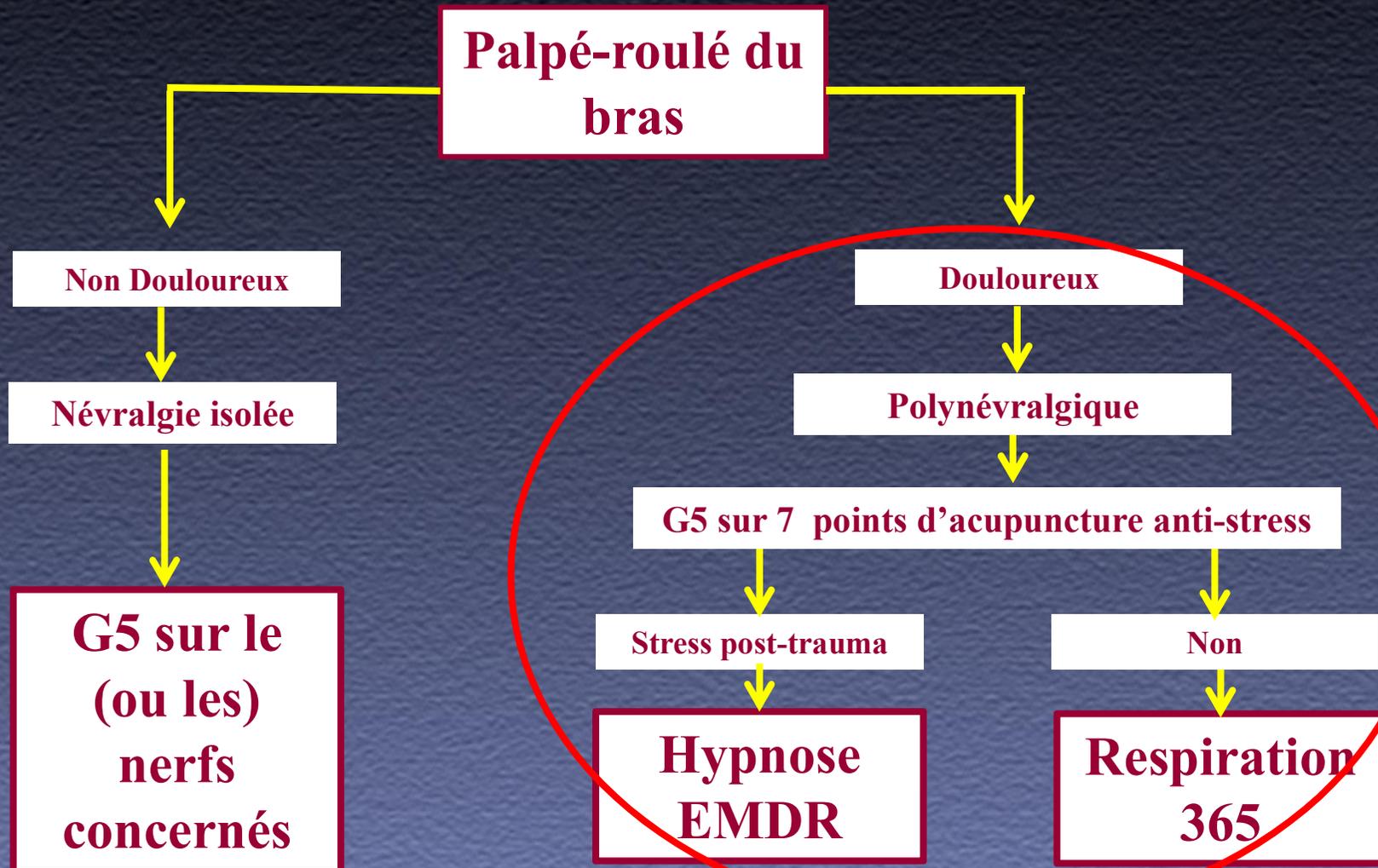
Parameter	<i>N</i>	Before surgery	After surgery	<i>p</i> Value
Stress urinary incontinence (%) ^a	113	13 (11.5)	6 (5.3)	0.020
Urge urinary incontinence (%) ^a	113	10 (8.8)	3 (2.7)	0.0082
Urinary frequency (min) ^b	113	113 ± 59.8	142 ± 67.1	<0.0001
Nocturia	110	1.3 ± 1.6	0.9 ± 1.2	0.0007
Dysuria (%)	112	45 (40.2)	34 (30.4)	0.034
Cystalgia (%)	112	44 (39.3)	29 (25.9)	0.014
ICIQ-SF (/21)	113	4.0 ± 5.2	2.7 ± 4.3	0.0011
Perineodynia (/10)	113	7.2 ± 1.4	4.5 ± 2.9	<0.0001
NHI-CPSI (/44)	113	31.6 ± 5.3	21.3 ± 10.8	<0.0001
Impotence (%) (<i>n</i> = 23 men)	21	9 (42.9)	7 (33.3)	0.48
Sexual arousal syndrome (%)	113	34 (30.1)	14 (12.4)	<0.0001
Dyspareunia (%) (<i>n</i> = 90 women)	83	34 (41.0)	14 (16.9)	<0.0001
Anal incontinence (%) ^c	113	56 (49.6)	42 (37.2)	0.016
St Marks score (/24)	113	4.9 ± 4.7	3.1 ± 4.2	<0.0001
Proctalgia fugax (%)	111	39 (35.1)	31 (27.9)	0.16
Dyschesia (%)	94	45 (47.8)	28 (30.0)	0.0011
Wexner score (/30)	113	8.9 ± 5.5	7.0 ± 5.5	<0.0001

^aModerate or severe

^bAverage time between two micturition

^cAll types (gas, liquid, and solid)

Névralgie isolée ou « Polynévralgique »



A new method to evaluate the part of stress in pain: injection of dextrose 5% (neural prolotherapy) on acupuncture points corresponding to the stellate, coeliac and mesenteric ganglions.
A pilot study

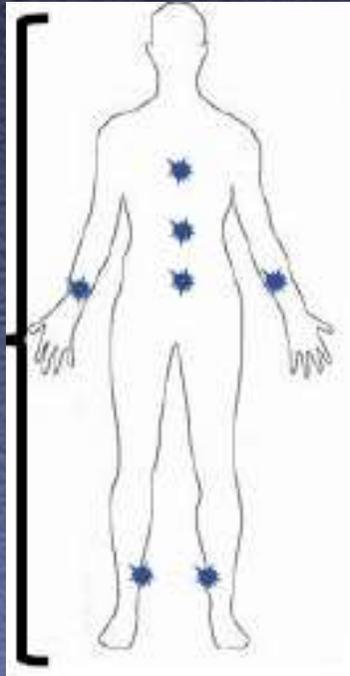
JACQUES BECO¹, JACK MOUCHEL², LAURENCE SEIDEL³, ADELIN ALBERT^{3,4}

¹ Department of Gynecology and Obstetrics, University Hospital of Liège, Liège, Belgium

² Avenue d'Haouza, Le Mans, France

³ Biostatistics, University Hospital of Liège, Liège, Belgium

⁴ Department of Public Health Sciences, University of Liège, Liège, Belgium



- SP 6 x 2 : chevilles
- CV 6 : sous-ombilical
- CV 12 : sus-ombilical
- PC 6 x 2 : poignets
- CV 17 : sternum

Score de bien-être de l'OMS

TABLE 1. WHO score before and 14 days after treatment (N=55).

WHO index	Before injection Mean \pm SD	After injection Mean \pm SD	P-value
Item 1 (/5)	2.1 \pm 1.1	3.0 \pm 1.2	<0.0001
Item 2 (/5)	1.7 \pm 1.2	3.0 \pm 1.2	<0.0001
Item 3 (/5)	1.6 \pm 1.3	2.8 \pm 1.3	<0.0001
Item 4 (/5)	1.3 \pm 1.2	2.6 \pm 1.4	<0.0001
Item 5 (/5)	2.5 \pm 1.5	3.0 \pm 1.3	0.0036
Total score (/100)	36.8 \pm 18.1	57.8 \pm 22.2	<0.0001

WHO-1: I have felt cheerful and in good spirits; WHO-2: I have felt calm and relaxed; WHO-3: I have felt active and vigorous; WHO-4: I woke up feeling fresh and rested; WHO-5: My daily life has been filled with things that interest me.

Autres effets

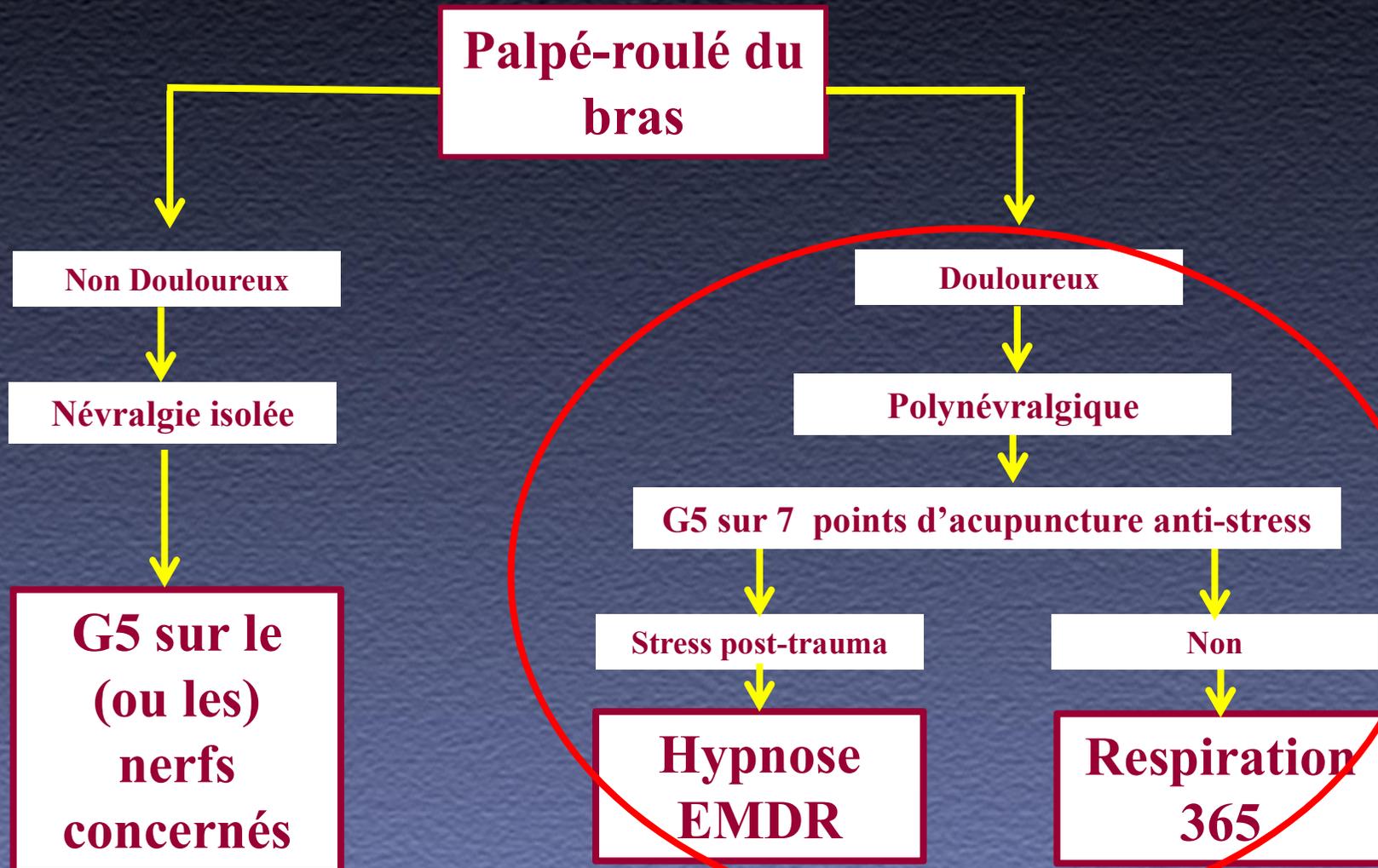
Douleur au Palpé-Roulé du bras (avant et 15 min après)

7.1 ± 1.5 to 4.2 ± 1.9 (p<0.0001)

Score de douleur global (avant et 15 jours après)

6.0 ± 2.1 before vs. 4.1 ± 2.5 after; p<0.0001

Névralgie isolée ou « Polynévralgique »



International
**Neural
Prolotherapy**
World Workshop

May 9-12, 2014

Ferrara, Italy

PROLO • M2
Società Italiana di Proloterapia
Ferrara 2014

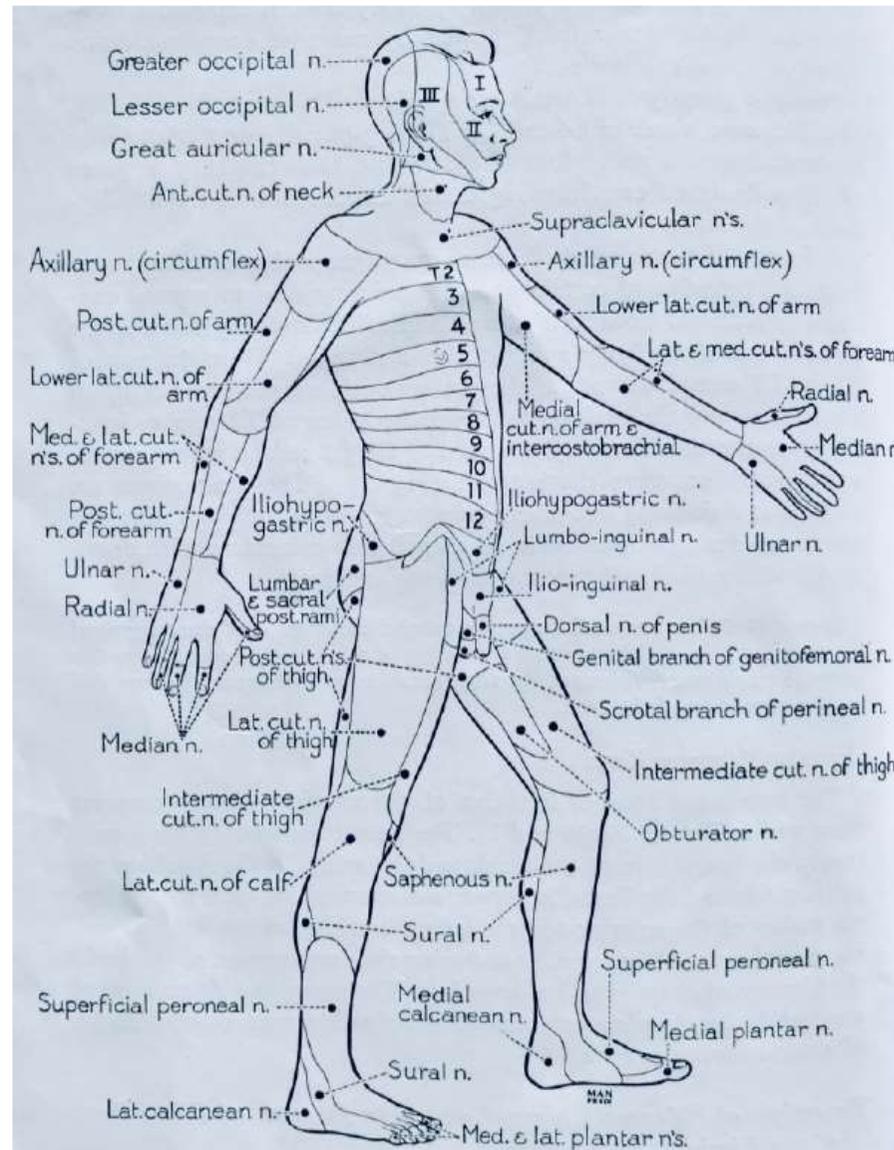
PROLO • M2
Società Italiana di Proloterapia
Ferrara 2014

Dr. Stephen Cavallini
Director SPRO Ita

PROLO • M2
NEURAL PROLOTHESIS



Anatomical fields according to Haymaker and Woodall Peripheral Nerve Injuries 2nd Edition 1953



A retenir !!

1. En cas de douleur ou de trouble fonctionnel pelvien (idem ailleurs) => penser névralgie !!
2. Utiliser le palpé-roulé pour confirmer le diagnostic
3. Injection sous-cutanée de glucosé 5% (seringue 10ml - aiguille 27G) => guérir votre patient(e) sans risque (efficacité 80%; 4 séances en moyenne)
4. Palpé-roulé du bras très douloureux !!! => syndrome de stress post-traumatique
5. L'injection de G5 dans 7 points anti-stress => soulagement instantané du stress et des douleurs

A vous de jouer !!