Quelle place pour la DREZtomie – Cordotomie dans la douleur du Cancer ?

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Hôpital Neurologique - Hospices civils de LYON

Université LYON I

review

Annals of Oncology 18: 1437–1449, 2007
doi:10.1093/annonc/mdm056
Published online 12 March 2007

Prevalence of pain in patients with cancer: a systematic review of the past 40 years

M. H. J. van den Beuken-van Everdingen[1]*, J. M. de Rijke[1], A. G. Kessels[2], H. C. Schouten[3], M. van Kleef[4] & J. Patijn[1]

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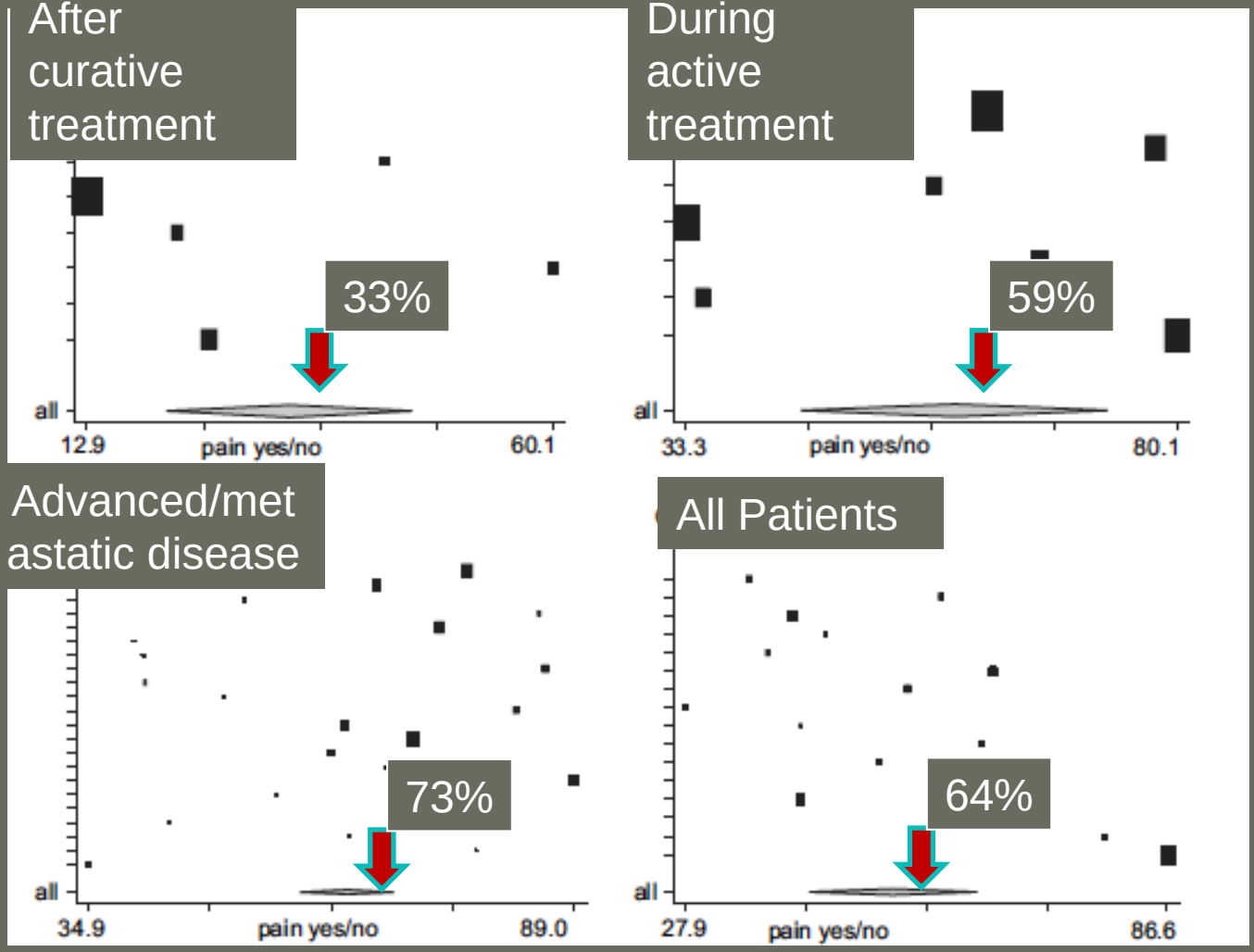
Received 18 December 2006; revised 11 January 2007; accepted 12 January 2007

Type of cancer	Groups 2–4		
	% pain (95% CI)	No. of reports	No. of patients
Head/neck	70% (51% to 88%)	3	95
Gastrointestinal	59% (44% to 74%)	9	564
Lung/bronchus	55% (44% to 67%)	7	1546
Breast	54% (44% to 64%)	7	420
Urogenital	52% (40% to 60%)	4	336
Gynaecological	60% (50% to 71%)	6	372


After curative treatment
33%
all
12.9
pain yes/no
60.1
During active treatment
59%
all
33.3
pain yes/no
80.1
Advanced/metastatic disease
73%
all
34.9
pain yes/no
89.0
All Patients
64%
all
27.9
pain yes/no
86.6

40-year trends in an index of survival for all cancers combined and survival adjusted for age and sex for each cancer in England and Wales, 1971–2011: a population-based study

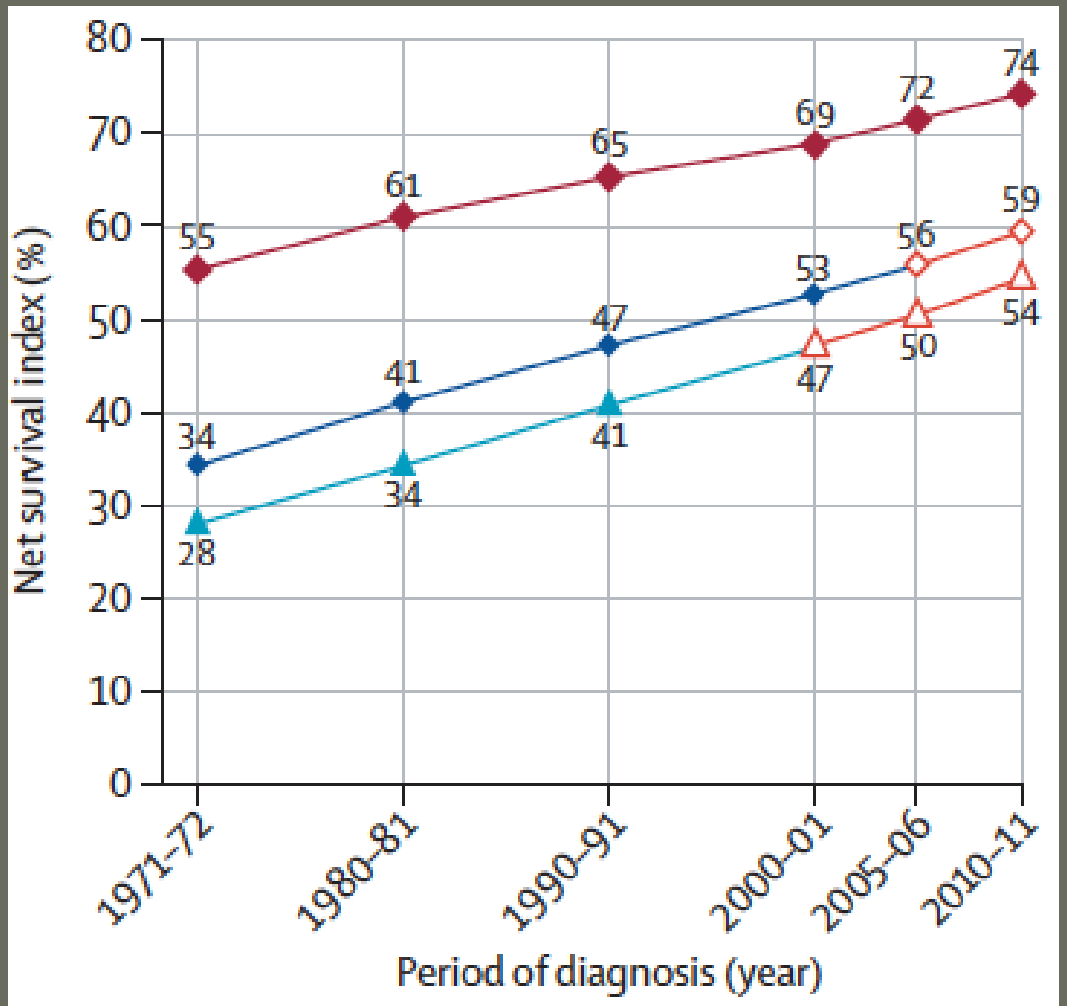
Manuela Quaresma, Michel P Coleman, Bernard Rachet

Lancet 2015; 385: 1206–18

Summary

Background Assessment of progress in cancer control at the population level is increasingly important.

La survie des cancers s'améliore



CANCER RESEARCH UK

VOLUME 30 · NUMBER 35 · DECEMBER 10 2012

JOURNAL OF CLINICAL ONCOLOGY

ORIGINAL REPORT

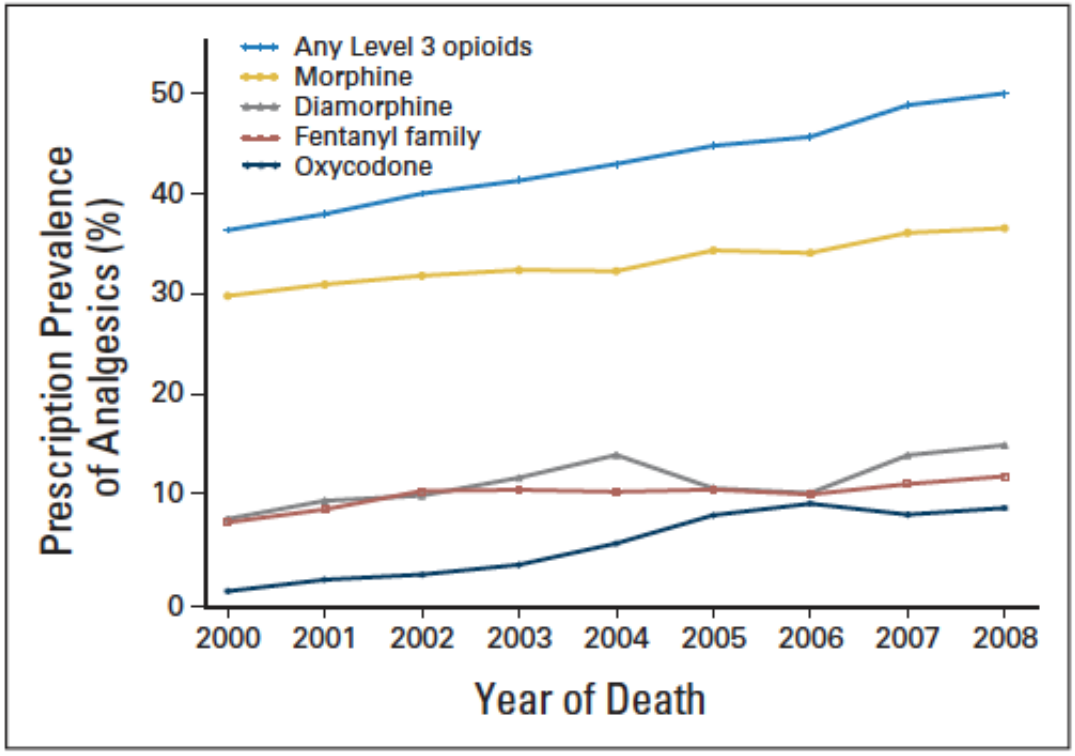
Opioid Prescribing for Cancer Pain During the Last 3 Months of Life: Associated Factors and 9-Year Trends in a Nationwide United Kingdom Cohort Study

Irene J. Higginson and Wei Gao

All authors, Cicely Saunders Institute, King's College London, London, United Kingdom.

A B S T R A C T

Prescription d'opioîdes en croissance

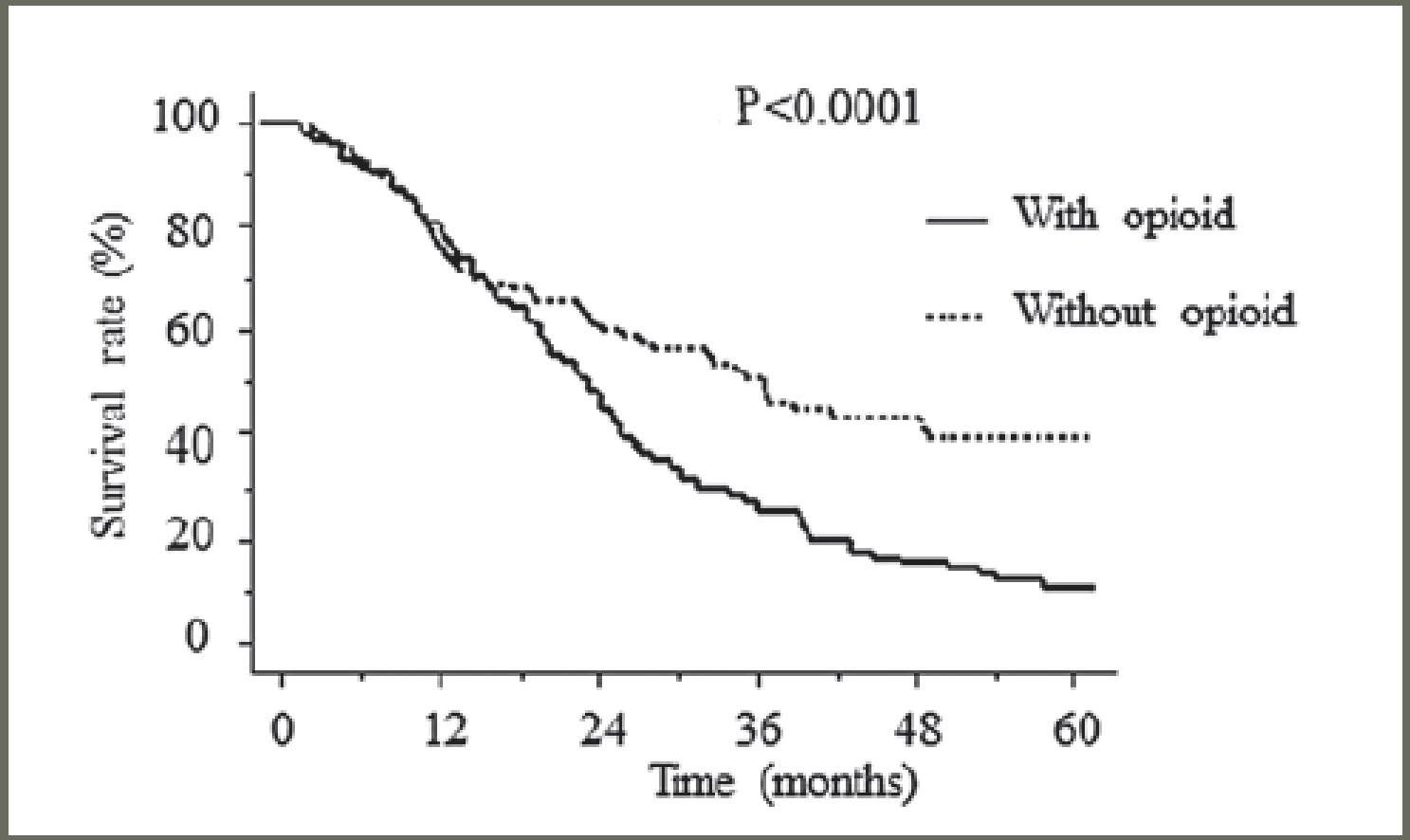


MOLECULAR AND CLINICAL ONCOLOGY 1: 59-64, 2013

Prognostic significance of opioid use in the active treatment of advanced colorectal cancer

YASUHIRO INOUE, TAKASHI IWATA, YOSHINAGA OKUGAWA, AYA KAWAMOTO, JUNICHIRO HIRO, YUJI TOIYAMA, KOJI TANAKA, KEIICHI UCHIDA, YASUHIKO MOHRI and MASATO KUSUNOKI

Department of Gastrointestinal and Pediatric Surgery, Division of Reparative Medicine, Institute of Life Sciences, Mie University Graduate School of Medicine, Tsu, Mie 514-8507, Japan



- Cancer moins agressif = moins douloureux = moins d'opioïdes
- Opioïdes délétères : Immuno suppresseurs – Complications…

Place des méthodes invasives dans la douleur cancéreuse

- Adultes - Enfants :

  SOR 2016

Méthodes invasives relèvent d'équipes spécialisées

(Voie péridurale, IT, IV, techniques neurochirurgicales, cimentoplastie…)

« *ont des indications rares et restent sujettes à débat entre experts en l'absence d'études contrôlées en nombre suffisant* »

Neurochirurgie de la douleur du cancer

Critères de sélection préalable :

- ✓ Prise en charge étiologique assurée
- ✓ Complications traitées (mécaniques, infectieuses)
- ✓ Absence d'interférences avec Tt oncologiques (chimio-radiothérapie…)

Modalités neurochirurgicales à disposition

1- *« Anatomiques »*

Reconstitution *anatomique*

(décompression, neurolyse, réparation-greffes ...)

2- *Neuromodulation*

- par infusion intrathécale de molécules antalgiques

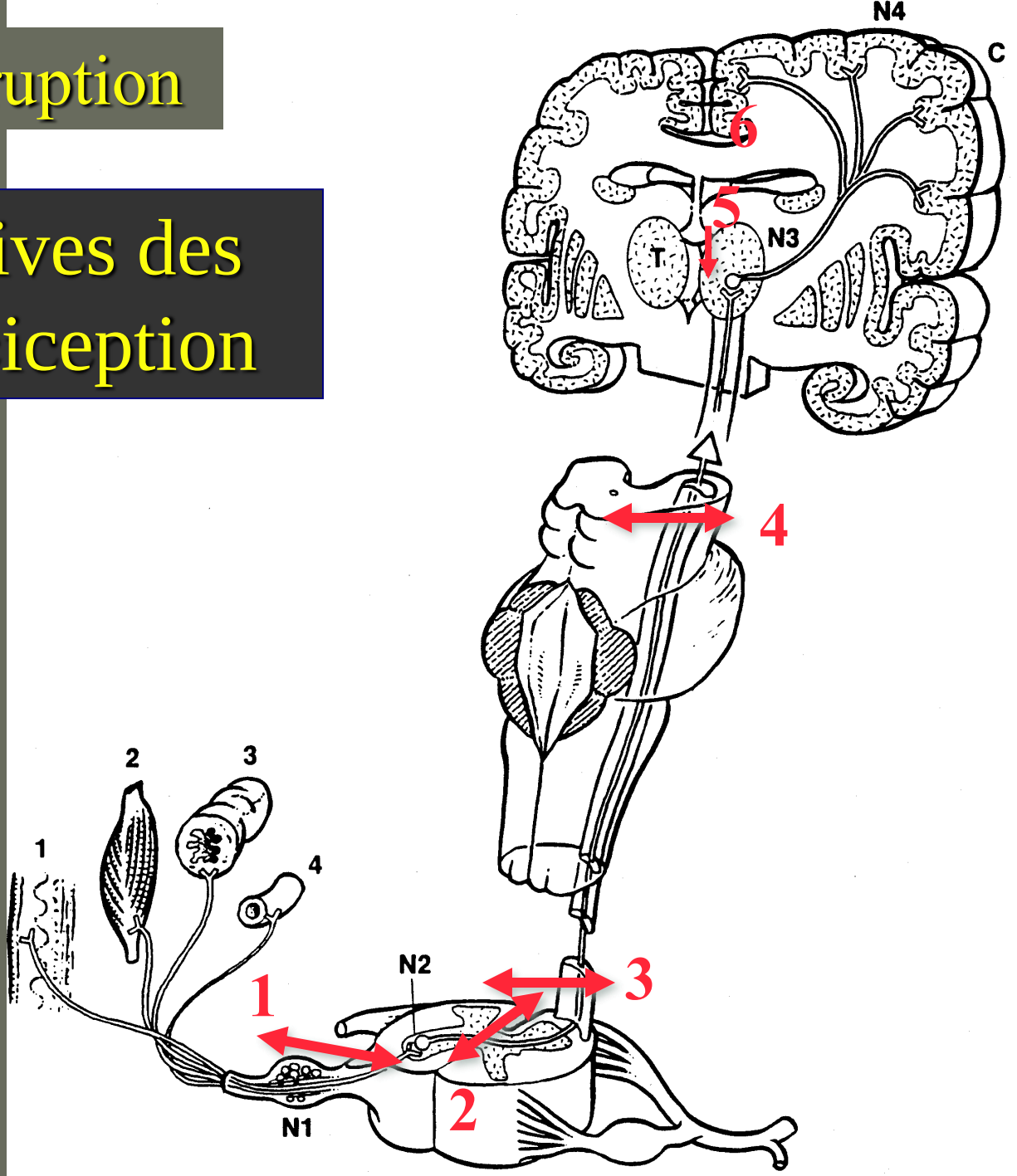
- par neurostimulation électrique – Douleurs neuro

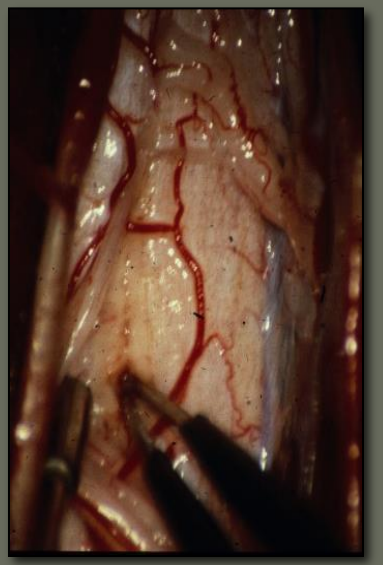
3- *Lésions sélectives* dirigée sur des cibles reconnues comme participant aux mécanismes algogènes

Techniques d'interruption

Lésions sélectives des voies de la nociception

1 Drezotomie
2 Myelotomie
3 Cordotomie
4 Tractotomie
(5 Thalamotomie mediane)
6 Cingulotomie



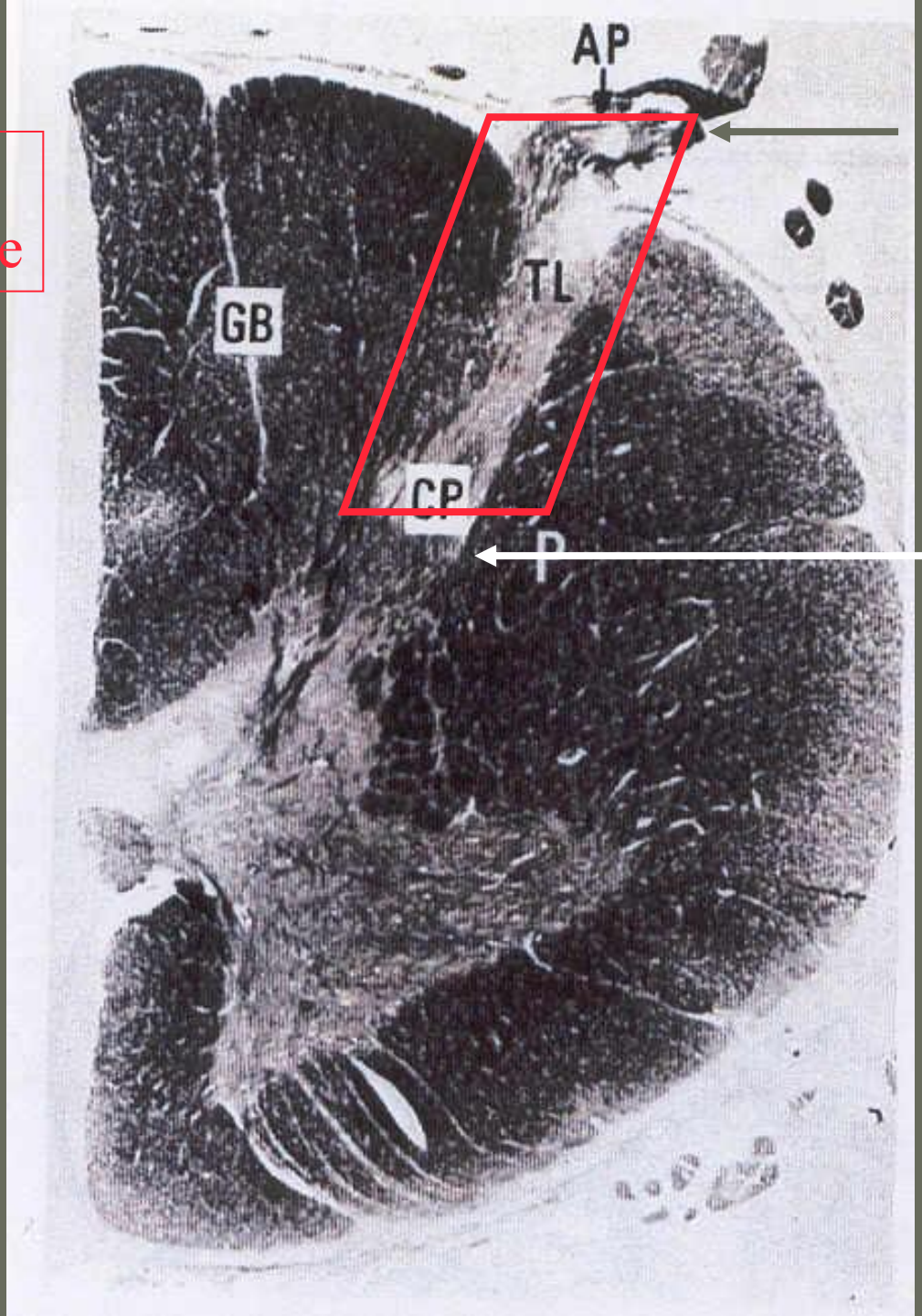


Chirurgie dans la zone d'entrée de la racine dorsale

(dorsal root entry zone = DREZ)

M. Sindou, 1974

Zone d'entrée
de la racine dorsale



Racine dorsale

Corne dorsale

LAT

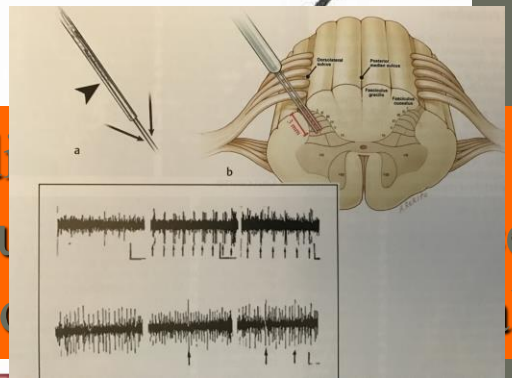
AV

Drezotomie

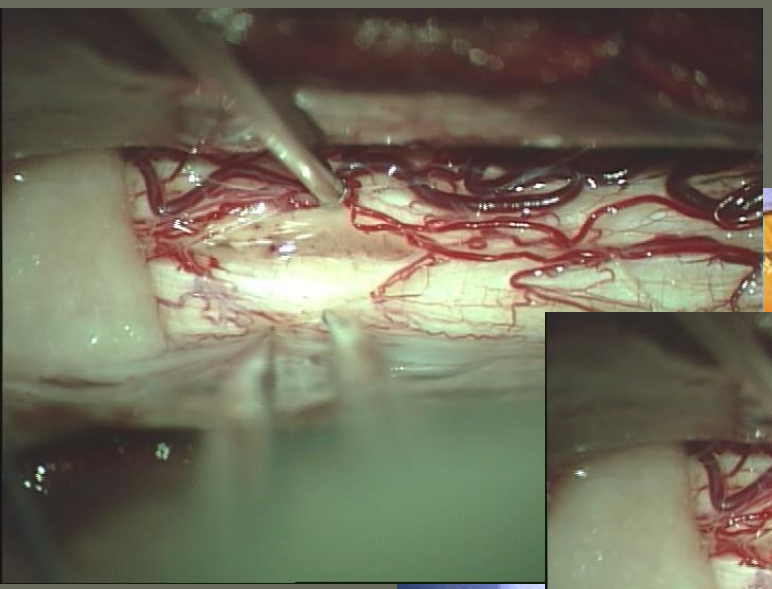
Interruption préferentielle
des fibres nociceptives.
Cr **Destruction de neurones**
th **générateurs de douleurs**
da **dans l'apex corne dorsale**

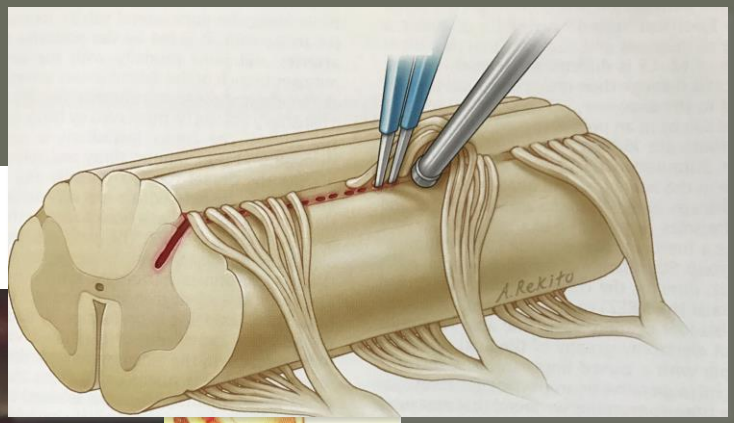
Indication :
Douleurs neuropathiques
radiculo-medullaires

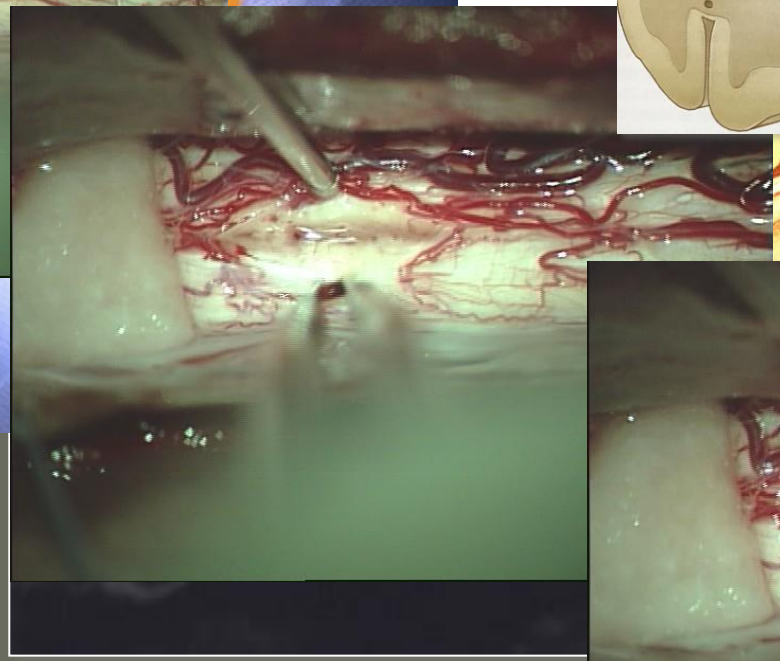
Ind
Dou
top
eption de
les)

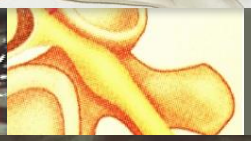


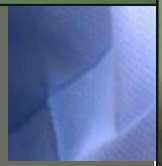
Drezotomy
Surgical technique

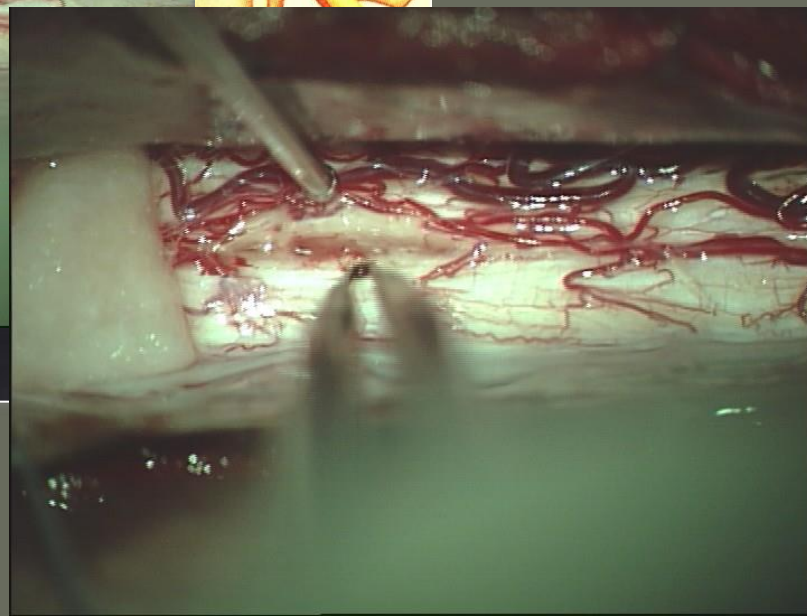












MICROSURGICAL DREZ LESIONS FOR THE CONTROL OF CANCER RELATED PAIN

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Review

Stereotactic and Functional Neurosurgery

Stereotact Funct Neurosurg 2012;90:356–360
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DREZotomy in the Treatment of Cancer Pain: A Review

Nisha Gadgil Ashwin Viswanathan

Department of Neurosurgery, Baylor College of Medicine, Houston, Tex., USA

Revue de la littérature
2012
14 articles – 123 patients

Reference	Technique	Number of patients	Follow-up, in months: range (mean)	Percentage of patients having > 75% relief
Nashold et al[6,80,81]	RF-Th	2 (cauda equina K)	8-4	100
Sindou and Lapras[39]	Microsurgery	13 (thoracic apex K)	1–30	90
Samii and Moringlane[82]	RF-Th	2 (breast K)	?	50
Powers et al[83]	Laser	3 (K)	?	100
Esposito et al[84]	Microsurgery	8 (K)	?	100
Kumagai et al[66]	RF-Th	1 (pelvic K)	2	0
Zeidman et al[85]	RF-Th	2 postradiation	29–48	100
Sindou	Microsurgery	46 (K): cervical MDT 35 (K): lumbar/sacral MDT	1–48	87 78
Rath et al[68]	RF-Th	2 postradiation	6–8	50
Teixeira et al[86]	RF-Th	7 postradiation	2–36	85
Ruiz-Juretschke et al[87]	RF-Th	3 (cervical K)	?	33
Kanpolat et al[72]	RF-Th	7 (K)	?	60
Taira (p.c.)	Microsurgery	3	> 1	?

Drezotomie

Résultats – *Douleurs nociceptives*

M SINDOU – Acta Neurochirurgica 1992

81 patients - recul de 13 mois en moy

Efficacité

(= sédation des douleurs > 75% et suppression des opioïdes)

Drez cervicale	87 %	(Pancoast- Tobias)
Drez lombo-sacrée	78 %	(K pelviens)

Drezotomie

Résultats – *Douleurs nociceptives*

M SINDOU – Acta Neurochirurgica 1992

81 patients - recul de 13 mois en moy

Mortalité - Morbidité

- 2 décès précoces
- 2 infections du site opératoire

Drezotomie
Résultats

Douleurs neuropathiques séquellaires

Série personnelle

18patients - recul de 24 mois en moy.

Efficacité

(= sédation des douleurs > 50% et diminution des antalgiques > 50%)

Drez cervicale 79 % – Plexite radique

Texeira et al SPINE 2007 : 5 / 6 patient pain-free 12 month F-up

Drezotomie

 +

- Efficacité à moy et long terme
- Réduction des opioïdes
- Suivi simple
- Non couteux

 -

- Sous AG avec ouverture canal vertébral
- Pas pour les patients en mauvais EG
- Seulement pour douleur de territoire limité
- Induit une thermo-analgesie (acceptable)

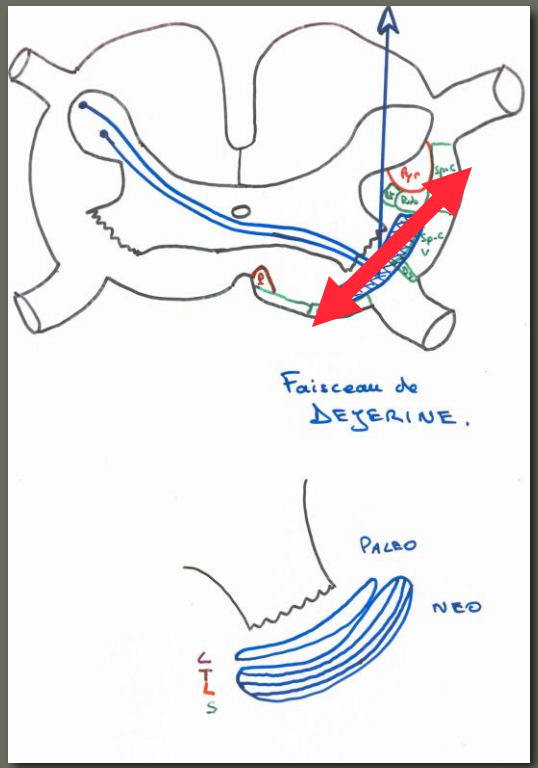
Drezotomie
Indications

- Douleurs d'hypernociception de **topographie limitée**
- Douleurs neuropathiques périphériques, radiculo-medullaires

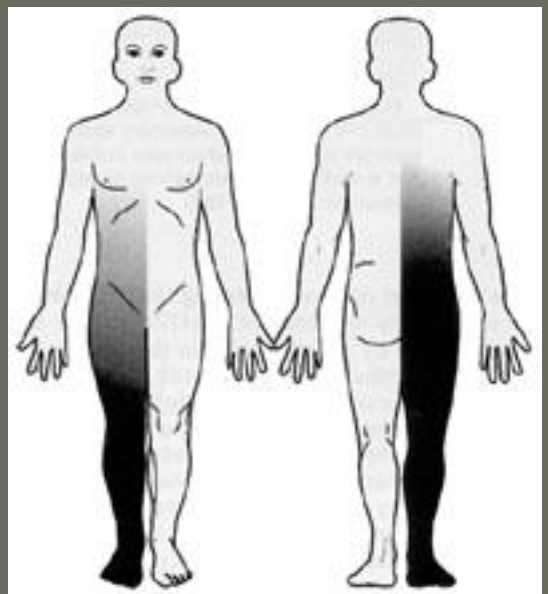
  avec composantes paroxystiques
- Douleurs mixtes

Cordotomie antéro-latérale pour douleurs du cancer

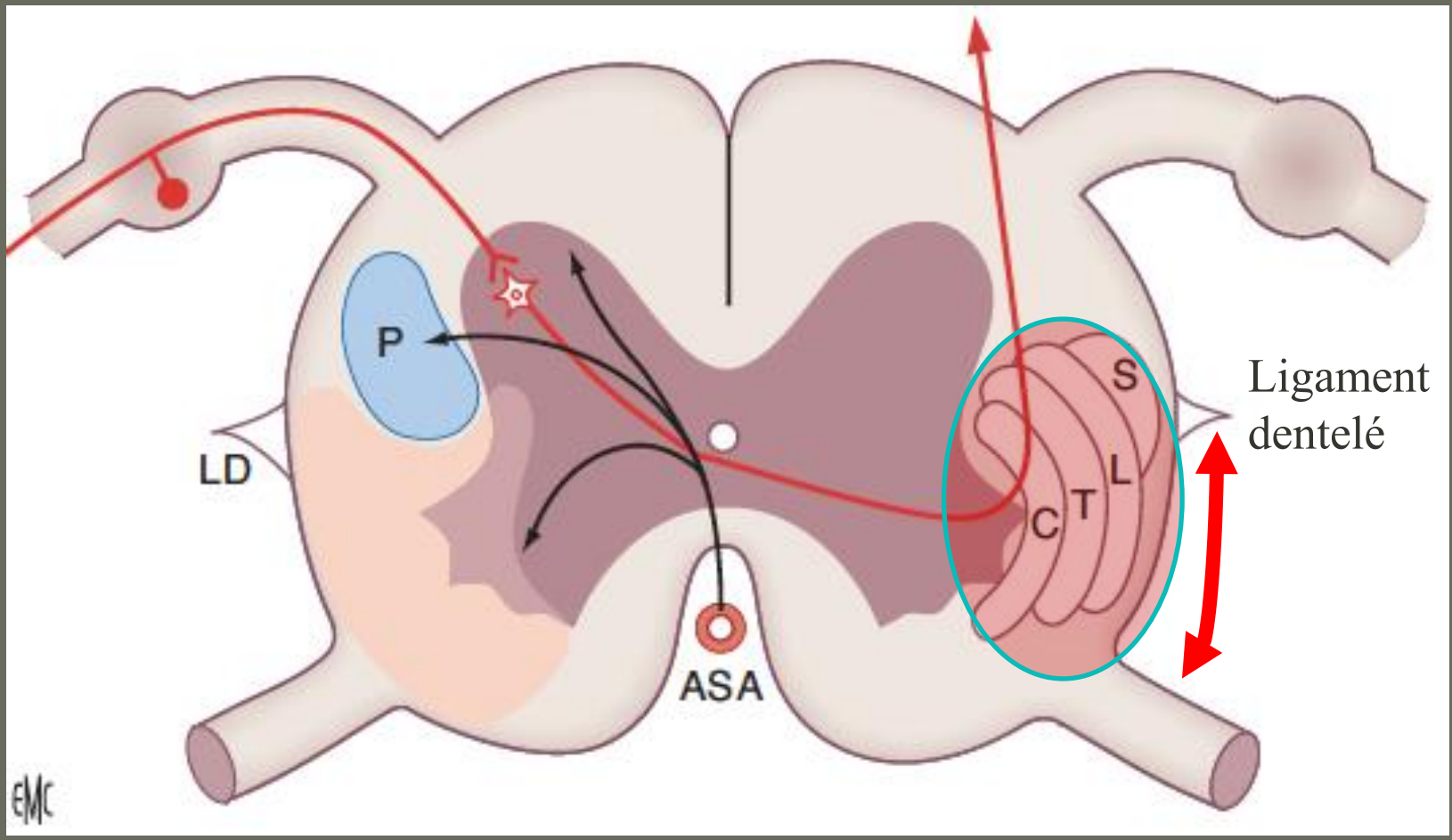
Cordotomie antero-latérale
(Spiller et Martin, 1912)



- Interruption de la voie nociceptive au niveau du faisceau spinothalamique dans le cordon antérolatéral



à l'origine d'une anesthésie thermoalgique controlatérale


P
LD
ASA
S
L
T
C
Ligament
dentelé

Technique neurochirurgicale sous utilisée ?

J Pain Symptom Manage 2010

Palliative Care Rounds

Open Thoracic Cordotomy for Refractory Cancer Pain: A Neglected Technique?

Nicola Atkin,, Kate A. Jackson, R. Andrew Danks et al.

Supportive and Palliative Care Unit (K.A.J.) and Neurosurgery Unit and Palliative Care Department (N.A.), The Royal Melbourne Hospital, Melbourne, Victoria, Australia

Although open thoracic cordotomy will not commonly be required, it remains a valuable option for a small group of patients with refractory cancer pain. Access to these procedure should be available to pain and palliative care services and referral should be considered in select cases of otherwise refractory cancer pain.

See the corresponding editorial in this issue, pp 153–154.

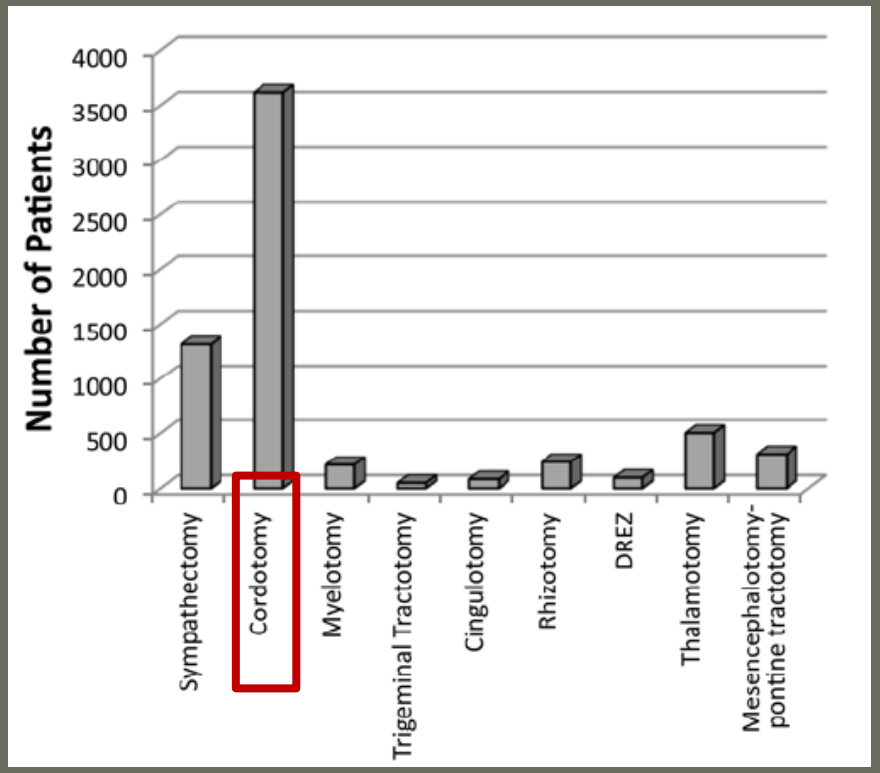
J Neurosurg 114:155–170, 2011

Destructive procedures for control of cancer pain: the case for cordotomy

A review

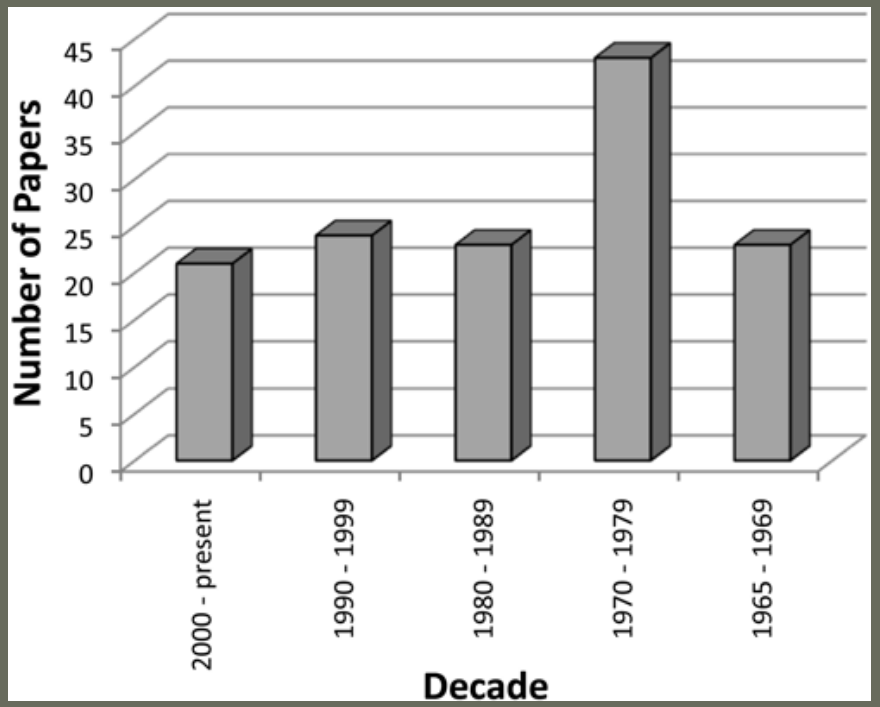
Ahmed M. Raslan, M.D., Justin S. Cetas, M.D., Ph.D., Shirley McCartney, Ph.D., and Kim J. Burchiel, M.D.

Department of Neurological Surgery, Oregon Health & Science University, Portland, Oregon



Technique lésionnelle
la + pratiquée

Nb d'articles / décades

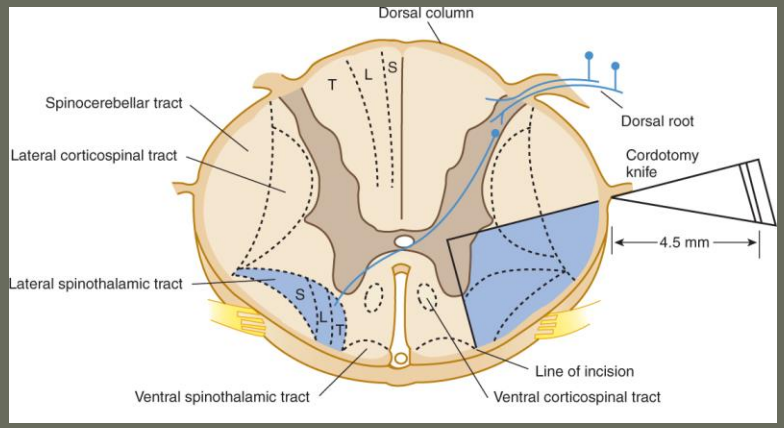


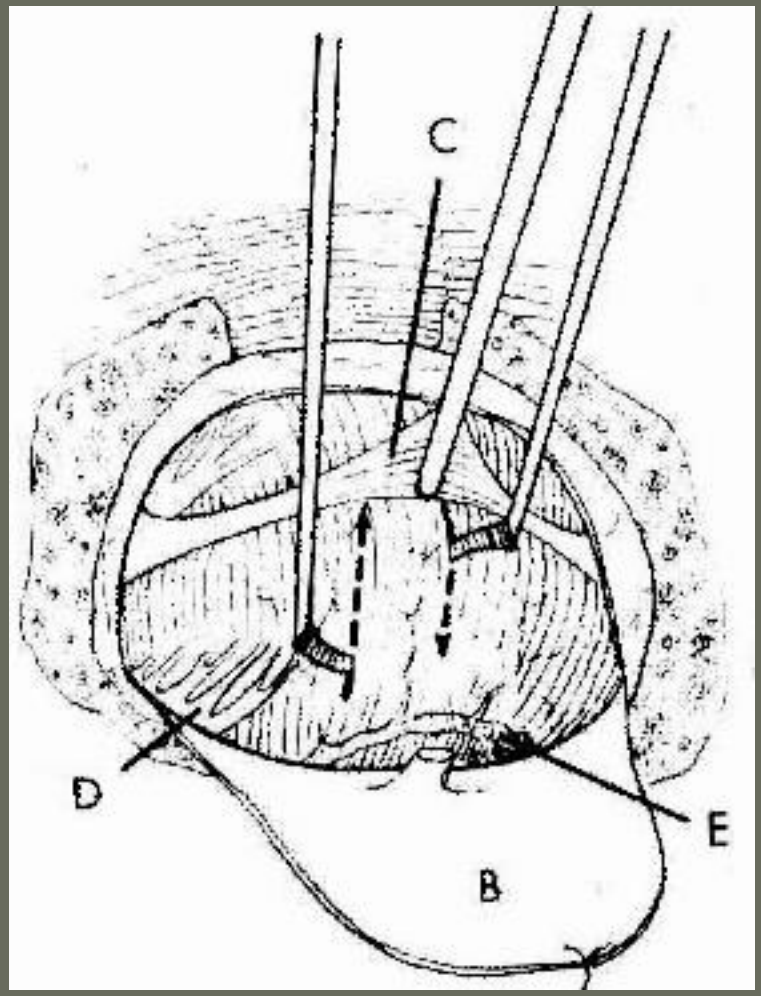
Variantes techniques

- Percutaneé vs chirurgicale
- Cervicale haute vs thoracique haute

Cordotomie antero-latérale

- Chirurgie ouverte
- Sous AG – 1h
- Abord rachidien limité





C. J. , ♀ 70 y

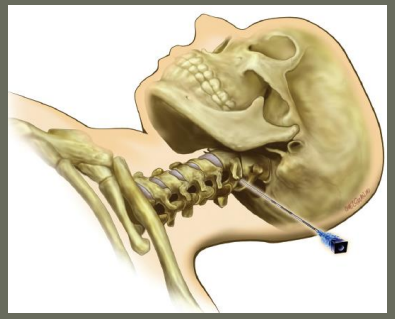
- Myxofibrosarcoma of the thigh
- Open left T1 antero-lateral cordotomy

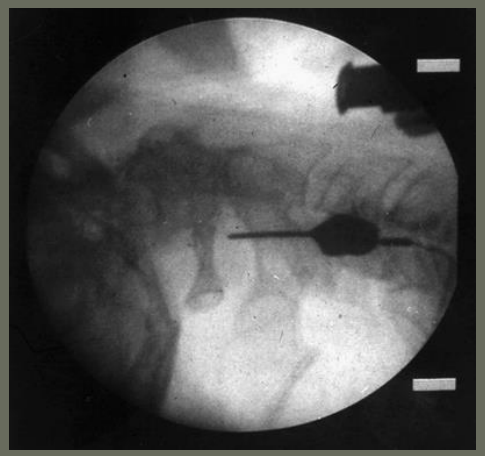
Cordotomie antero-latérale

Technique Percutanée sous AL (←coop patient)

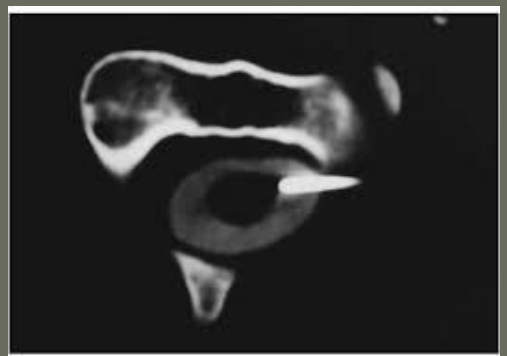
- Niveau cervical C1-C2

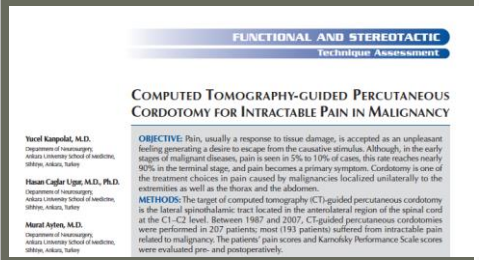
Under radiological and electrophysiological control *Mullan, 1965*





Under CT and electrophysiological control *Kanpolat, 1987*





FUNCTIONAL AND STEREOTACTIC
Technique Assessment

COMPUTED TOMOGRAPHY-GUIDED PERCUTANEOUS CORDOTOMY FOR INTRACTABLE PAIN IN MALIGNANCY

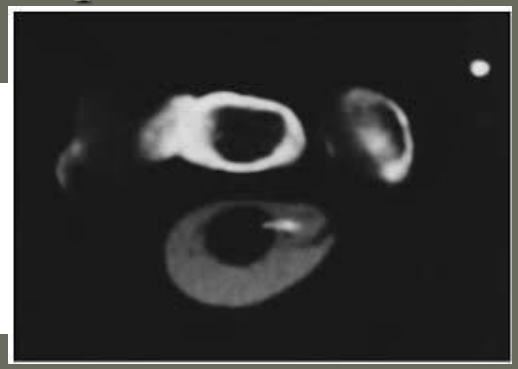
Yucel Kanpolat, M.D.
Department of Neurosurgery, Ankara University School of Medicine, Sihhiye, Ankara, Turkey

Hasan Caglar Ugur, M.D., Ph.D.
Department of Neurosurgery, Ankara University School of Medicine, Sihhiye, Ankara, Turkey

Murat Ayten, M.D.
Department of Neurosurgery, Ankara University School of Medicine, Sihhiye, Ankara, Turkey

OBJECTIVE: Pain, usually a response to tissue damage, is accepted as an unpleasant feeling generating a desire to escape from the causative stimulus. Although, in the early stages of malignant diseases, pain is seen in 5% to 10% of cases, this rate reaches nearly 90% in the terminal stage, and pain becomes a primary symptom. Cordotomy is one of the treatment choices in pain caused by malignancies localized unilaterally to the extremities as well as the thorax and the abdomen.

METHODS: The target of computed tomography (CT)-guided percutaneous cordotomy is the lateral spinothalamic tract located in the anterolateral region of the spinal cord at the C1–C2 level. Between 1987 and 2007, CT-guided percutaneous cordotomies were performed in 207 patients; most (193 patients) suffered from intractable pain related to malignancy. The patients' pain scores and Karnofsky Performance Scale scores were evaluated pre- and postoperatively.



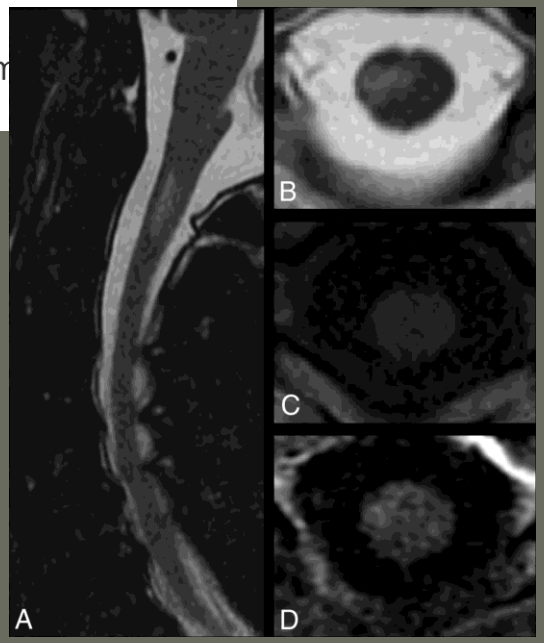
Stereotact Funct Neurosurg 2002;78:53–63
(DOI:10.1159/000068012)

MRI-Guided Frameless Stereotactic Percutaneous Cordotomy

McGirt M.J. · Villavicencio A.T. · Bulsara K.R. · Gorecki J.
Author affiliations

Division of Neurosurgery, Duke University Medical Center, Durham

At an average of 6 months of follow-up (range 5–11), excellent pain relief was achieved in 83% (5/6)



Cordotomie antero-latérale
Résultats

CHAPTER I

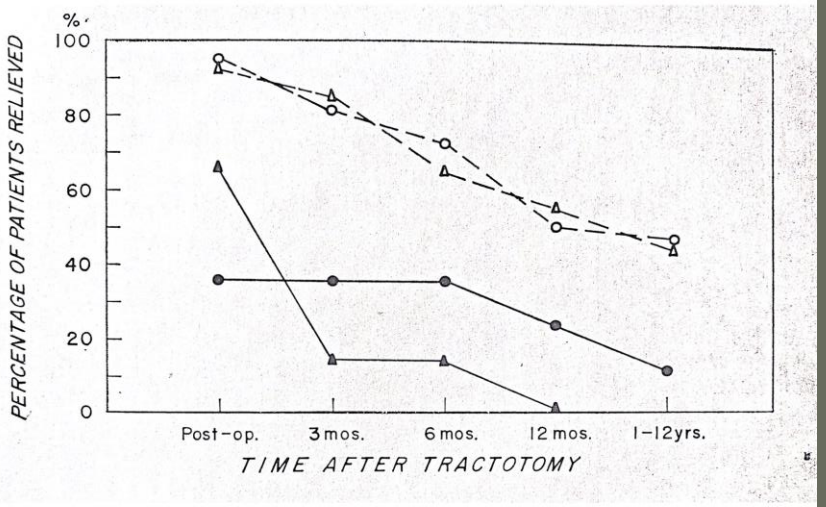
Cordotomy: Assessment of its Effectiveness and Suggestions for its Improvement

JAMES C. WHITE, M.D.

INTRODUCTION

The spinothalamic tract was first described by Edinger in 1889 (4), but its function was not known until a postmortem reported by Spiller (21) in 1905 disclosed that a pair of discrete tuberculomas in each anterior quadrant had been the cause of bilateral loss of sensibility to pain and temperature. At Spiller's suggestion, the first cordotomy was performed by Martin in 1912 (22). Less well known is the fact that Schüller (19) had already carried out the operation in monkeys in Vienna in 1910. The operation was perfected by Frazier (8) in this country and by Foerster (6) in Germany. It was the latter who first carried the tractotomy to the upper cervical level.

1963 Malignant vs. NonMalignant



Neurochirurgie. Sep-Oct 1976;22(5):437-44.

[Spino-thalamic cordotomy in cancerous pain. Results of a series of 124 patients operated on by the direct posterior approach]

[Article in French]

L Mansuy, M Sindou, G Fischer, J Brunon

PMID: 1071136

Cordotomie antero-latérale

Revue d'une série lyonnaise 171 cas
et de 2022 cas de la littérature

- Efficacité à court terme :
  - Chir ouv 71%
  - Per cut 88%
- Efficacité à long terme :
  - 6 mois 75%
  - 1 an 40%

JNS

LITERATURE REVIEW

J Neurosurg 130:1039–1049, 2019

Contemporary concepts of pain surgery

JNSPG 75th Anniversary Invited Review Article

Kim J. Burchiel, MD, and Ahmed M. Raslan, MD

Department of Neurological Surgery, Oregon Health & Science University, Portland, Oregon

Pain surgery is one of the historic foundations of neurological surgery. The authors present a review of contemporary concepts in surgical pain management, with reference to past successes and failures, what has been learned as a subspecialty over the past 50 years, as well as a vision for current and future practice. This subspecialty confronts problems of cancer pain, nociceptive pain, and neuropathic pain. For noncancer pain, ablative procedures such as dorsal root entry zone lesions and rhizolysis for trigeminal neuralgia (TN) should continue to be practiced. Other procedures, such as medial thalamotomy, have not been proven effective and require continued study. Dorsal rhizotomy, dorsal root ganglionectomy, and neurotomy should probably be abandoned. For cancer pain, cordotomy is an important and underutilized method for pain control. Intrathecal opiate administration via an implantable system remains an important option for

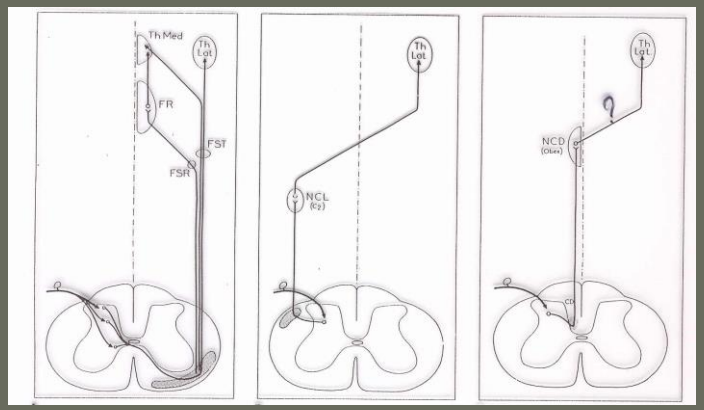
TABLE 1. Mean, median, minimum, maximum, and standard deviation values of Karnofsky Performance Scale and visual analog scale scores[a]

Cordotomy	Preoperative		Postoperative		*P* value
	Mean ± SD	Median (range)	Mean ± SD	Median (range)	
VAS	7.61 ± 0.61	8 (5–9)	1.29 ± 2.21	0 (0–10)	<0.001
KPS	45.2 ± 14.4	40 (10–80)	65.7 ± 13.4	70 (20–100)	<0.001

Problème du retour de douleurs
> 18 mois après cordotomie

Quel type de douleur ? Mêmes préop– différentes ?

- Evolution du cancer – métastases
- Insuffisance de la lésion → vraie récidive douleurs
- Existence d'autres voies nociceptives ascendantes ?



Complications - spécifiques

- **Hypoventilation d'origine centrale**

Défaillance respiratoire surtout cordotomie cervicale haute bilatérale ou unilatérale sur poumon sain unique (⚐K poumon)

- **Incontinence urinaire**

Cordotomie sous C5 surtout

Cordotomie antero-latérale

 +

- Sous AL chez patient en mauvais EG
- Sous AG technique simple et rapide
- Couvre large territoire
- Réduction des opioïdes
- Suivi simple
- Non couteux

 -

- Technique délicate AL
- Effets temporaires (6 à 18 mois)
- Seulement pour douleur unilatérale
- Induit thermo-analgesie
- Peut induire douleurs neuropathiques secondaires (dysthesies)

See the corresponding editorial in this issue, pp 153–154.

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Destructive procedures for control of cancer pain: the case for cordotomy

A review

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TABLE 6: Final recommendation grade for cordotomy in cancer pain*

Grade of Recommendation	Benefit vs Risk & Burden	Methodological Quality of Supporting Evidence	Implications
1C—strong recommendation, low-quality evidence for cordotomy in cancer pain	benefits of pain reduction clearly outweigh risks & burdens, vice versa	observational studies or case series	strong recommendations for use of cordotomy in somatic cancer pain, but may change when higher quality of evidence becomes available

* Based on the analysis in Table 5, a strong recommendation for utilization of cordotomy in patients with unilateral somatic pain below the neck. The GRADE system allows the generation of strong recommendations based on weak evidence, defined as a Class IC recommendation.

Shémas d'indications préférentielles dans les douleurs des cancers en évolution

- Localisées
- Lésion K stabilisée – EG +
- Espérance de vie > 6 mois

Infusions IT /IV

Techniques ablatives

- Drezotomie (Pancoast…)
- Cordotomie (K sein…)
- Tractotomie (K ORL)

- Diffuses - axiales
- Evolution rapide
- Espérance de vie limitée

Infusions IT /IV

Shémas d'indication dans les Douleurs séquellaires (neuropathiques)

- Neurostimulation *(douleurs continues)*

  - Transcutanée : neuropathie périphérique (post chimio, trauma, radiothérapique…)

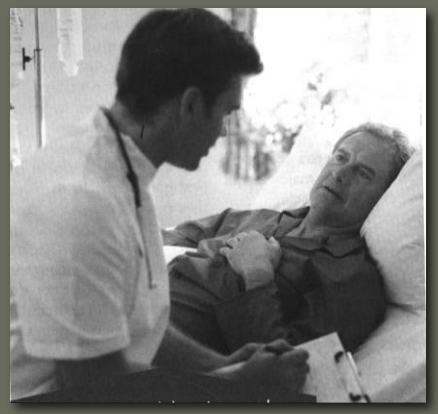
  - Médullaire : neuropathie périphérique, plexuelle, radiculaire

  - Corticale : plexus, moelle spinale

- Drezotomie *(douleurs paroxystique)*

  plexite radique

Conclusions



- Utile pour certains patients sélectionnés
- Discussion cas par cas du rapport bénéfices /risques
- Dans un contexte de prise en charge multidisciplinaire
- En concertation avec l'équipe d'oncologie
- Pas trop tôt, ni trop tard…