Invasieve pijntechnieken bij de palliatieve zorg

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MUMC
Maastricht / Nederland

Stadium van ziekte	Prevalentie pijn (95% CI)
Patiënten na curatieve behandeling	33% (21-46)
Patiënten na enige behandeling tegen kanker	59% (44-73)
Gevorderd/gemetastaseerd/terminaal stadium	64% (58-69)

Patiënt populatie

- Anesthesioloog
- Pijnbestrijding

- Daghospitaal
- chemotherapie
- radiotherapie
- Oncoloog
- Orgaan specialist

- paliative care

Rol anesthesioloog

- Optimaliseren medicamenteuze ondersteuning
- Multidisciplinaire evaluatie zo nodig
- Overwegen invasieve R/ indien vooraf medicamenteuze therapie werd geoptimaliseerd wegens
  - onvoldoende resultaat
  - Ondraaglijke/ ontolereerbare bijwerkingen
- Doel : verminderen van de huidige medicatie of met behoud van dosis een beter effect op de pijn

Uehara *et al. BMC Palliative Care (2022) 21:166*
https://doi.org/10.1186/s12904-022-01056-6

RESEARCH

Availability of and factors related to interventional procedures for refractory pain in patients with cancer: a nationwide survey

Yuko Uehara[1,2], Yoshihisa Matsumoto[1,2,3*], Toshifumi Kosugi[4], Miyuki Sone[5], Naoki Nakamura[6], Akio Mizushima[1], Mitsunori Miyashita[7], Tatsuya Morita[8], Takuhiro Yamaguchi[9] and Eriko Satomi[1,10]

As interventional procedures are well known, it is important to take measures to ensure that pain specialists and interventional radiology physicians are sufficiently utilized to manage refractory cancer pain.

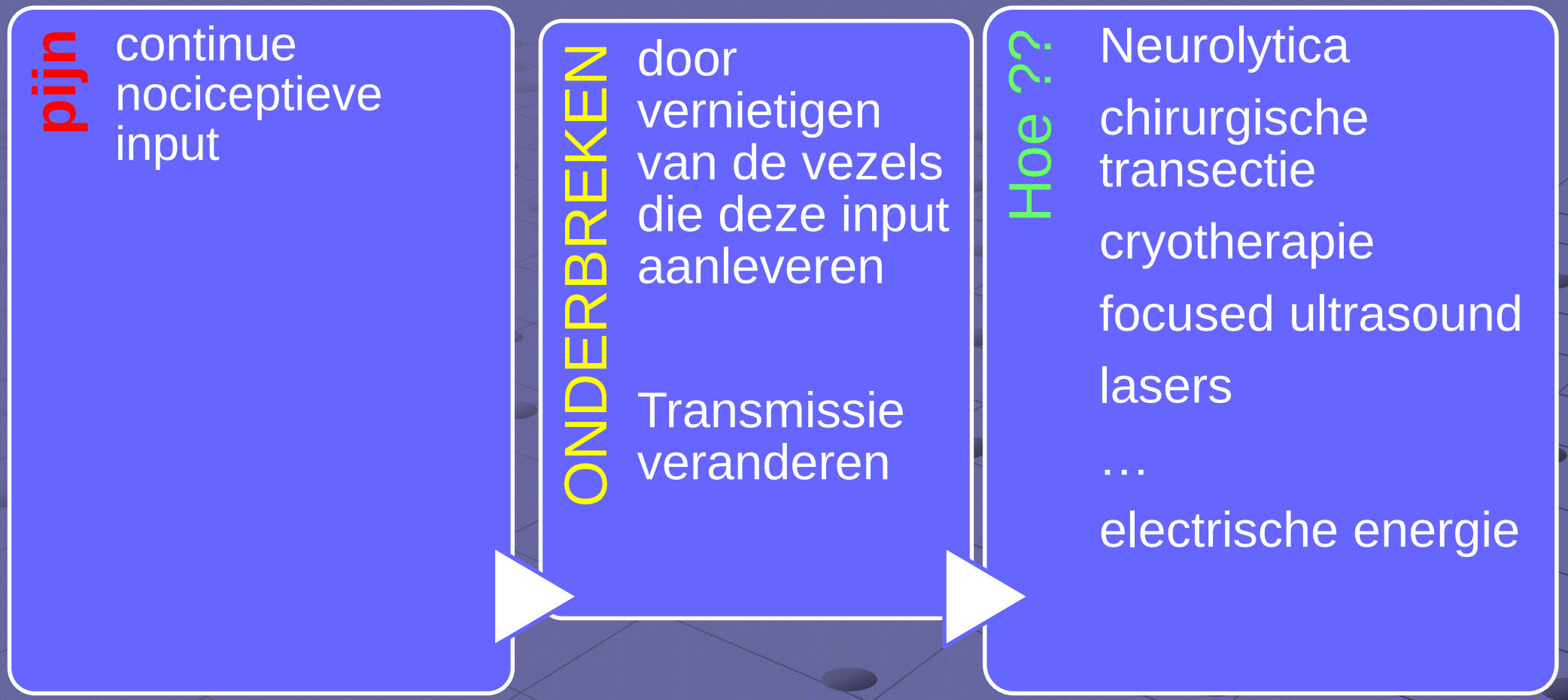
Unacceptable pain in oncology : The patients'perspective on reasons for absence of pain interventions

TABLE 2 Reasons for absence of pain intervention

Reasons mentioned[a]	Person considered by the patient as responsible for the absence of pain intervention[b]																			
	Physician								Patient			Both physician and patient				No one				
Patient	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Physician only focused on treatment of disease	X		X	X	X			X				X								
Reluctance for intervention by patient						X	X		X	X	X					X		X		
Reluctance to mention pain by patient	X				X									X	X					
Pain intervention complicated or impossible		X	X						X							X				
Unknown cause of pain		X		X			X									X				
Pain inevitable part of treatment	X							X						X						X
No attention for person behind the disease			X		X															
Pain with different cause, treatment elsewhere																	X		X	
Regulation of pain in own hands													X							

[a]Patients could indicate more than one reason.
[b]40% of the patients ($n = 8$) held only the physician responsible for the absence of pain intervention in their treatment, 15% ($n = 3$) held themselves responsible, and 20% ($n = 4$) reported a shared responsibility. The remaining 25% ($n = 5$) stated that no one was responsible.

European journal of cancer care, 2022, Vol.31


pijn
continue nociceptieve input
ONDERBREKEN
door vernietigen van de vezels die deze input aanleveren
Transmissie veranderen
Hoe ??
Neurolytica
chirurgische transectie
cryotherapie
focused ultrasound
lasers
…
electrische energie

Interventionele Technieken

- Zenuwonderbreking
  - Neurolytica
    - Alcohol
    - Phenol 6%
    - Glycerol
    - Hypertoon zout
  - Radiofrequentie
- Splanchnicus blokkade/Coeliacus blokkade
- Chordotomie
- Hypogastric plexus block
- Lower end block
- Intrathecale toediening van
  - opioiden
  - locale anesthetica
  - andere
- Spinale catheter

Zenuwonderbreking

- Neurolytica
  - Eiwitdenaturatie
    - **Alcohol >70 %**
    - **Phenol > 6%**
    - Glycerol
    - Hypertoon zout
- Radiofrequente technieken
  - Hoog frequente electrische stroom kortbij een zenuwstructuur appliceren
    structuursveranderingen → pijnconductie veranderen

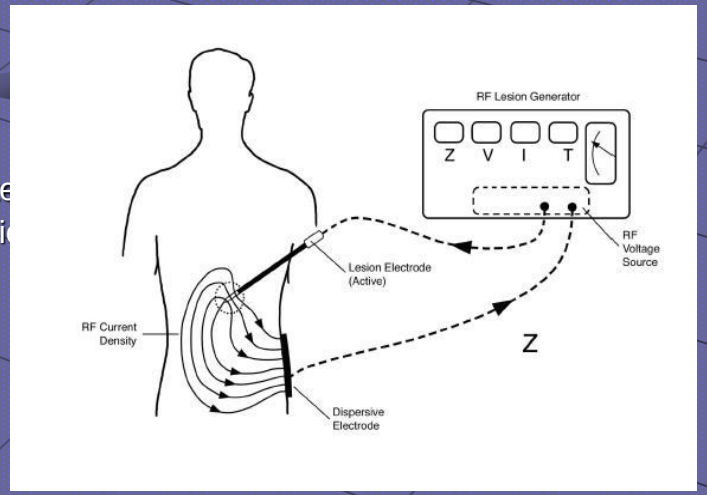
Zenuwonderbreking

- Neurolytica
  - Eiwitdenaturatie
    - Alcohol >70 %
    - Phenol 6%
    - Glycerol
    - Hypertoon zout

- Radiofrequente technieken
  - **Hoog frequente electrische stroom kortbij een zenuwstructuur appliceren**

    structuursveranderingen → pijnconductie veranderen

- Kwantificeerbare letsels
  Mijden van ongewenste
- Mogelijkheid tot stimulati
- Cylindrisch nauw letsel
- veilig
- Effectief
- Dagklinisch



Interventionele Technieken

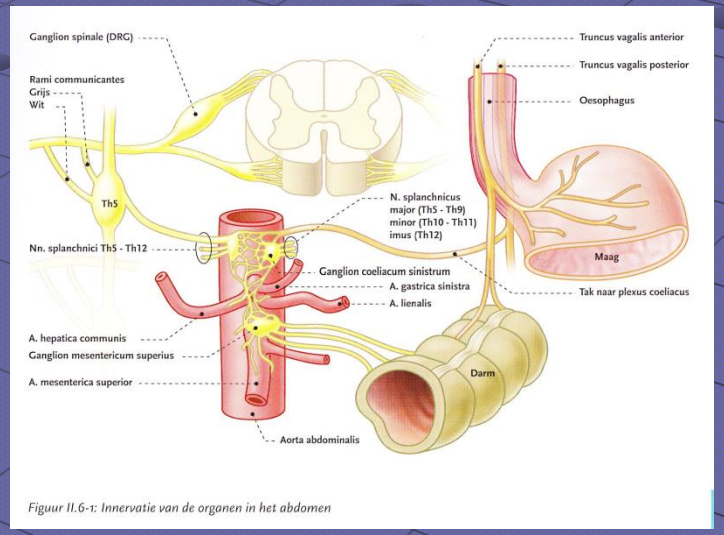
- Anatomie
- Indicatie
- Contra-indicaties
- Techniek
- Effectiviteit

Interventionele Technieken

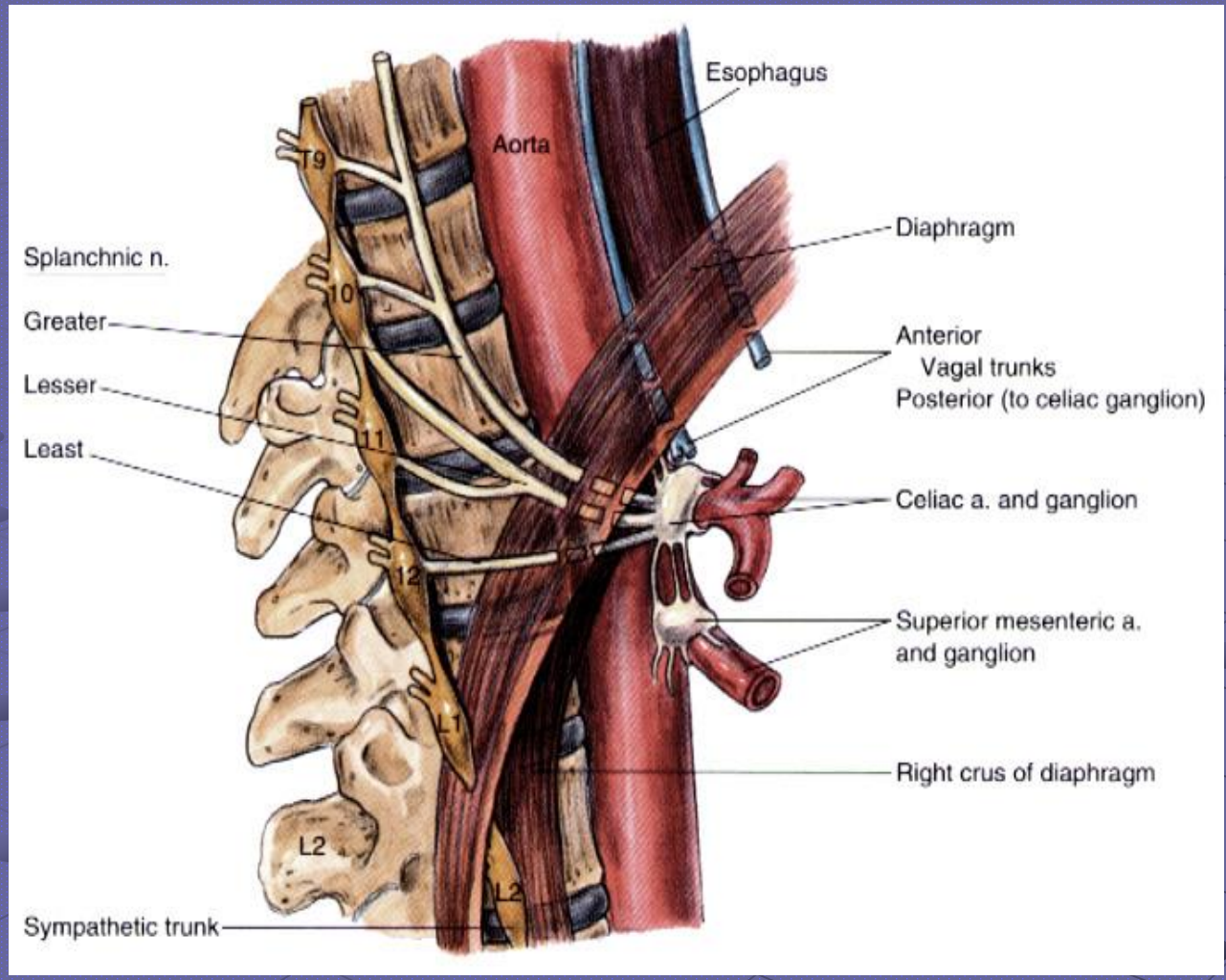
- Splanchnicus blokkade
- Coeliacus blokkade

Coeliacus-Splanchnicus blokkade

- Indicatie
  - Carcinoma van midden en boven buik
    - vooral pancreas carcinoom
    - ook maag, lever, galblaas,
    - bovenpool van de nieren
    - Milt
    - Bijnieren
    - Diaphragma
    - Re colon en proximaal transvers colon
- DD : wandpijn thoracaal



Figuur II.6-1: Innervatie van de organen in het abdomen


Esophagus
Aorta
T9
Diaphragm
Splanchnic n.
10
Greater
Anterior
Vagal trunks
Posterior (to celiac ganglion)
Lesser
11
Least
Celiac a. and ganglion
12
Superior mesenteric a.
and ganglion
L1
Right crus of diaphragm
L2
L2
Sympathetic trunk

Coeliacus-Splanchnicus blokkade contra-indicaties

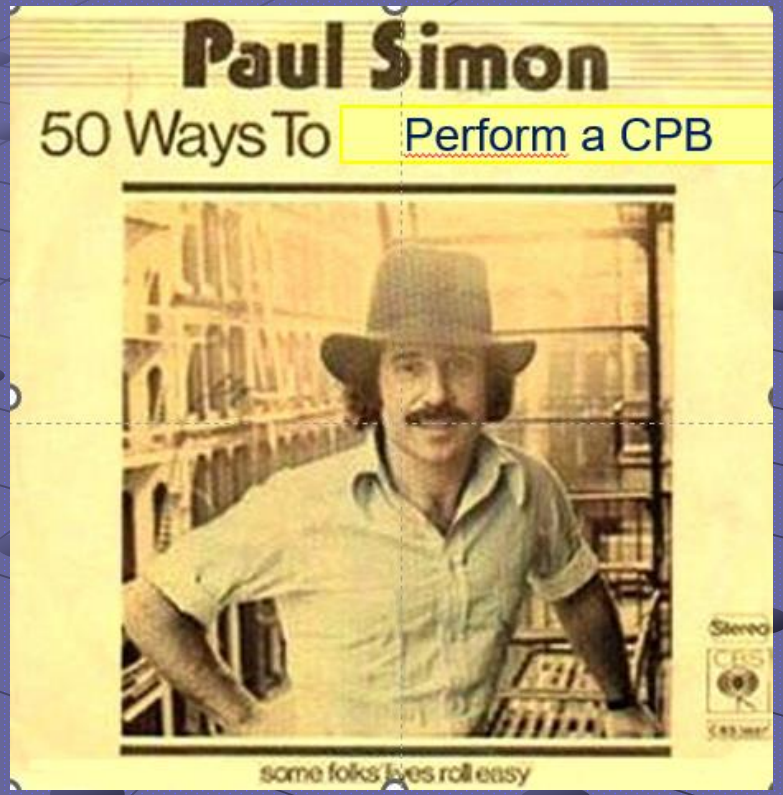
- Stolling
- Locale infectie thv prikplaats
- Te differentiëren met wandpijn

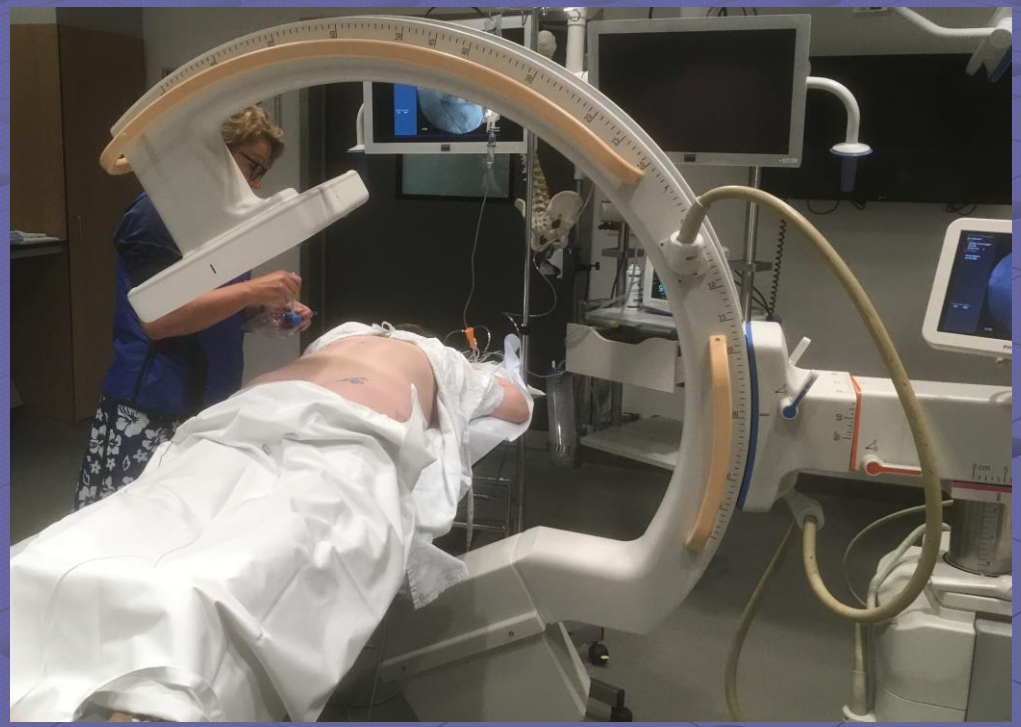
- Distorting anatomy: tumor/heelkunde
- Abdominaal aneurysma
- Respiratoire insufficiëntie

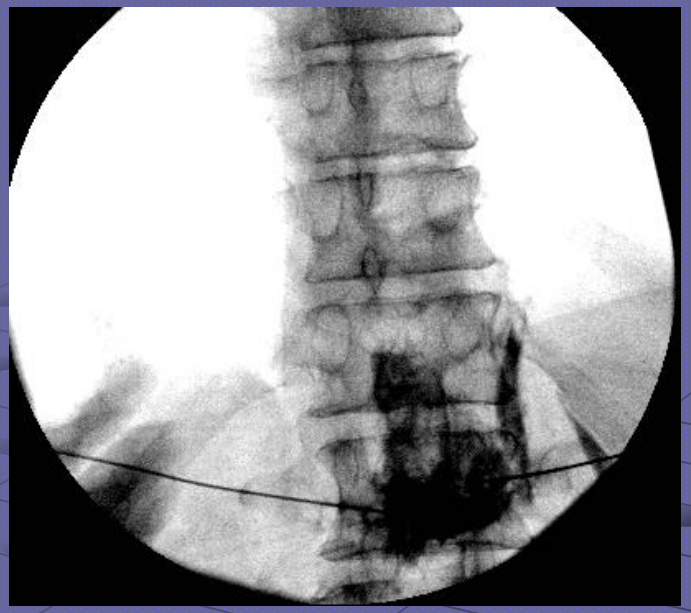
plexus coeliacus blokkade : technieken

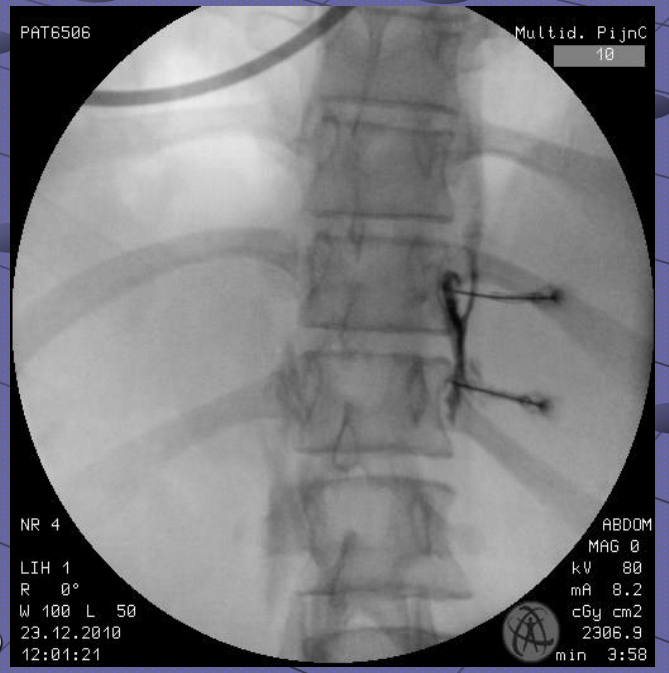
- percutaan:
  - posterior trans-aortaal,
  - paravertebraal (retrocruraal)
  - transdiscaal : nieuwe opmars

  Ischia S, Ischia A, Polati E, Finco G. *Anesthesiology* 1992;76:534-540
  - Anterior
  - lateraal CT guided
  - 1-2 naald technieken
- Heelkundig
- Endoscopisch, transgastrisch US guided





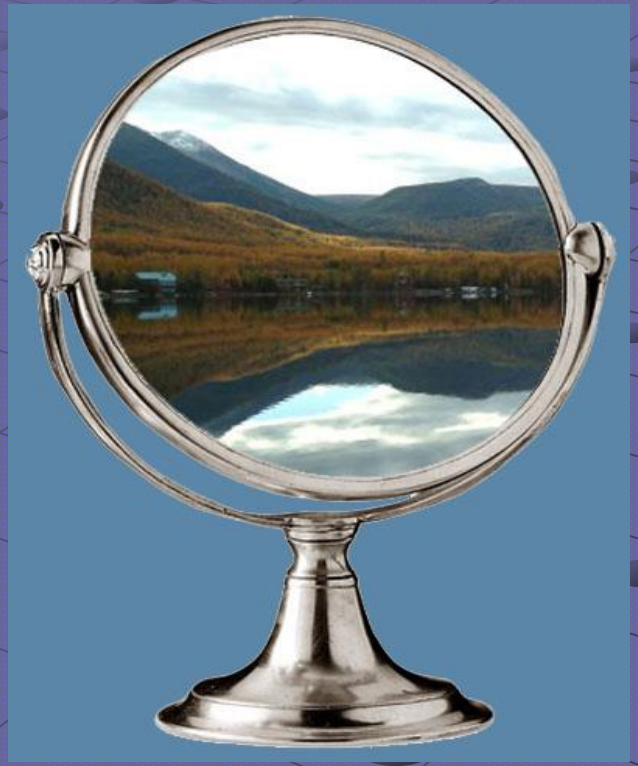



PAT6506
Multid. PijnC
10
NR 4
LIH 1
R 0°
W 100 L 50
23.12.2010
12:01:21
ABDOM
MAG 0
kV 80
mA 8.2
cGy cm2
2306.9
min 3:58

Medical imaging

- Fluoroscopy
- CT guided
- Echo guided
- Endoscopie/echo

- videothoracoscopic
  splanchnicectomy



Current Pain and Headache Reports
February 2014, 18:394 | Cite as

Celiac Plexus Block in the Management of Chronic Abdominal Pain

Authors | Authors and affiliations

Maunak V. Rana, Kenneth D. Candido, Omar Raja, Nebojsa Nick Knezevic

Anesthetic Techniques in Pain Management (D Wang, Section Editor)
First Online: 11 January 2014

1.3k Downloads
15 Citations

currently, various imaging modalities are at the disposal of the interventionalist for the treatment of pain. Fluoroscopy, computed tomography (CT) guidance and endoscopic ultrasound assistance may be utilized to aid the practitioner in performing the blockade of the celiac plexus. The choice of radiographic technology depends on the specialty of the interventionalist, with gastroenterologists favoring endoscopic ultrasound and interventional pain physicians and radiologists preferring CT guidance. A review is presented describing the indications, technical aspects, and agents utilized to block the celiac plexus in patients suffering from chronic abdominal pain.

Nevenwerkingen en Complicaties splanchnicus/coeliacus blokkade

- Nevenwerkingen :
  - Locale pijn
  - orthostatische hypotensie
  - toename van darmperistaltiek – overwicht parasympaticus : diarree
- Zeldzame, ernstige
  - hematurie,
  - pneumothorax,
  - schouder pijn
  - paresthesia,
  - Case reports met paraplegie (neurolytica)

Available online at www.sciencedirect.com
SCIENCE DIRECT®
European Journal of Pain 8 (2004) 539–545
www.EuropeanJournalPain.com

Efficacy of coeliac plexus and splanchnic nerve blockades in body and tail located pancreatic cancer pain

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[b] *Department of Cancer Epidemiology and Biostatistics, Institute of Oncology, Istanbul University, Capa Klinikleri, Istanbul, Turkey*

Received 25 June 2003; accepted 16 January 2004
Available online 11 March 2004

ORIGINAL ARTICLE

Comparison between radiofrequency ablation and chemical neurolysis of thoracic splanchnic nerves for the management of abdominal cancer pain, randomized trial

S.A. Amr[1], R.M. Reyad[2], A.H. Othman[1], M.F. Mohamad[1], M.M. Mostafa[1], N.H. Alieldin[3], F.A. Hamed[1]

1 Department of Anesthesia, ICU and Pain Relief, South Egypt Cancer Institute, Assiut University, Egypt
2 Department of Anesthesia, and Pain Relief, National Cancer Institute, Cairo University, Egypt
3 Department of Biostatistics and Cancer Epidemiology, National Cancer Institute, Cairo University, Egypt

ORIGINAL ARTICLE

Celiac Plexus Block for Treatment of Pain Associated with Pancreatic Cancer: A Meta-Analysis

Wa Zhong, MD*,[1]; Zhong Yu, MD*,[1]; Jing-Xian Zeng, MM†; Ying Lin, MD*; Tao Yu, MD*; Xiao-Hui Min, MD‡; Yu-Hong Yuan, MD*; Qi-Kui Chen, MD*

**Department of Gastroenterology, Sun Yat-Sen Memorial Hospital, Sun Yat-Sen University, Guangzhou, Guangdong; †Department of Anesthesiology, Sun Yat-sen Memorial Hospital, Sun Yat-sen University, Guangzhou, Guangdong; ‡Department of Infection, Sun Yat-sen Memorial Hospital, Sun Yat-sen University, Guangzhou, Guangdong, China*

Dig Dis Sci (2009) 54:2330–2337
DOI 10.1007/s10620-008-0651-x

REVIEW

EUS-Guided Celiac Plexus Neurolysis for Pain due to Chronic Pancreatitis or Pancreatic Cancer Pain: A Meta-Analysis and Systematic Review

Srinivas R. Puli · Jyotsna B. K. Reddy · Matthew L. Bechtold · Mainor R. Antillon · William R. Brugge

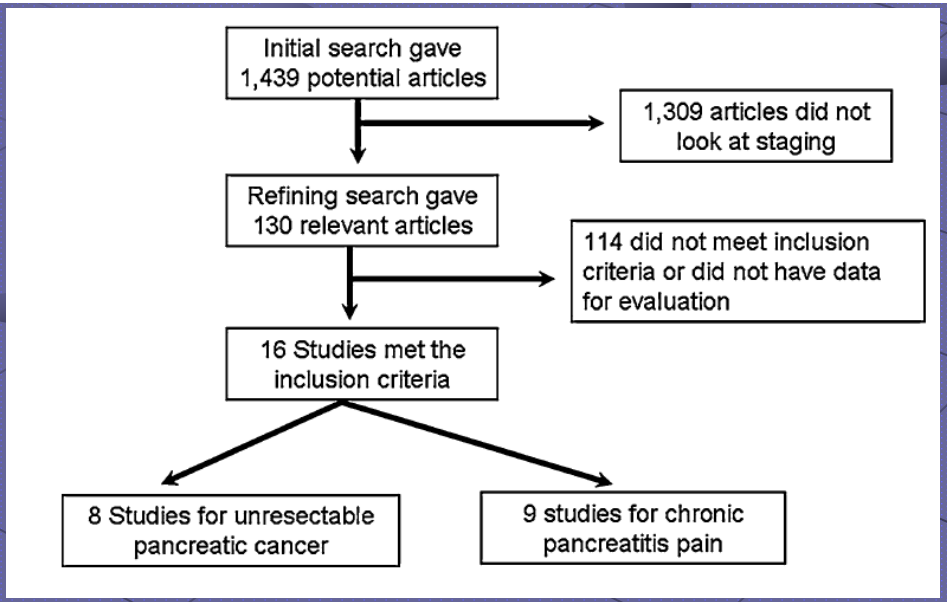


Table 2 Characteristics of studies for EUS-guided CPN for pancreatic cancer pain

Authors	Etiology	No. of patients	Method of pain evaluation	Substance for neurolysis	Unilat/ bilateral celiac plexus injection	Complications (number of patients)	Average period of follow-up
O'Toole et al. [48]	CP	31	Pain Scale	Unstated	Unstated	Unstated	Unstated
LeBlanc et al. [49]	CP	51	Likert scale (0–10)	20 ml 0.75% bupivacaine and 80 mg of triamcinolone	Bilateral	Unstated	Unstated
Lemelin et al. [50]	CP	71	Visual Analog Scale pain scores (0–10)	20 ml 0.25% Bupivacaine with 20 ml absolute alcohol	Bilateral	Unstated	7 days
Gress et al. [51]	CP	10	Visual Analog Scale pain scores (0–10)	10 ml 0.75% Bupivacaine with 3 ml of 40 mg Triamicinolone	Bilateral	Diarrhea (1)	15 weeks
Gress et al. [52]	CP	90	Visual Analog Scale pain scores (0–10)	10 ml 0.25% Bupivacaine with 3 ml of 40 mg Triamicinolone	Bilateral	Diarrhea (3) Peripancreatic abscess (1)	8 weeks
Levy et al. [45]	CP	5	Complete, partial, or no pain relief	Bupivacaine (0.25) followed by alcohol (99%) and/or Depo-Medrol suspension (80 mg/2 cc)	Unstated	Diarrhoea (4)	4 weeks
Mahajan et al. [53]	CP	22	Pain Scale	Bupivacaine and Triamcinolone	Unstated	Flare of pancreatitis (1) Infection of pseudocyst (1)	8 weeks
LeBlanc et al. [46]	CP	6	Visual Analog Scale pain scores (0–10)	10 ml of Bupivacaine 0.75% and Triamcinolone 80 mg	Bilateral	Unstated	11.3 weeks
Gress et al. [54]	CP	90	Visual Analog Scale pain scores (0–10)	10 ml 0.25% Bupivacaine with 3 ml of 80 mg Triamicinolone	Bilateral	Unstated	8 weeks

EUS-guided CPN Endoscopic ultrasound-guided celiac plexus neurolysis, *CP* chronic pancreatitis

REVIEW

Systematic review and meta-analysis of celiac plexus neurolysis for abdominal pain associated with unresectable pancreatic cancer

Muneyori Okita MD[1] | Kazuki Otani[1] | Noriaki Gibo MD[2] | Shigeyuki Matsui PhD[1]

- the effect of adding CPN to MM : 322 studies -> 9 weerhouden
- RCTs combinatie CPN + MM versus MM alleen
- CPN :
  - Percutaan-CPN,
  - Intraoperatief-CPN
  - EUS-CPN
- + effect op 4 wkn , moeizaam verschillende outcome parameters

Pain Practice. 2022;22:652–661.

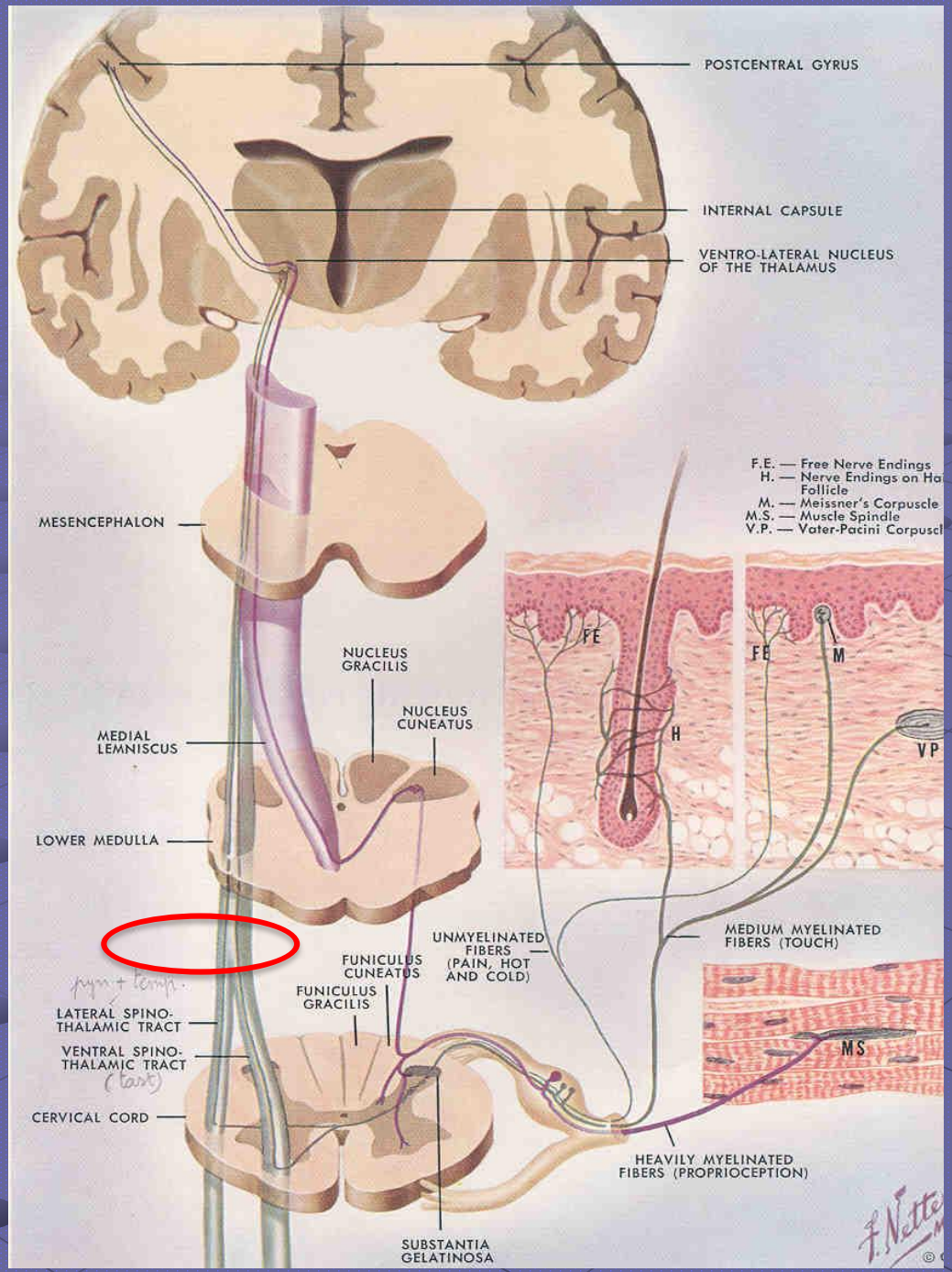
- Coeliac plexus block
  - Neurolytic block
  - Evidence 1A+
  - Not in case of distorted anatomy
  - CT guided if possible
  - Onset : fast
- Splanchnicus block
  - Neurolytic block or radiofrequency
    (depending on the prognosis)
  - Evidence 2B+
  - Technique of choice if anatomy is uncertain
  - Onset neurolytics : fast
  - Onset Radiofrequency treatment up to 4 wk

Studie Nederland
Blockpan studie

- Plexus coeliacusblokkade vs radiotherapie
- Betrokkenheid van de DPCG
- Coördinatie vanuit Amsterdam UMC

Interventionele Technieken

- Percutane Chordotomie



Sensory cortex

Thalamus

Climbing pathway: spinothalamic tract

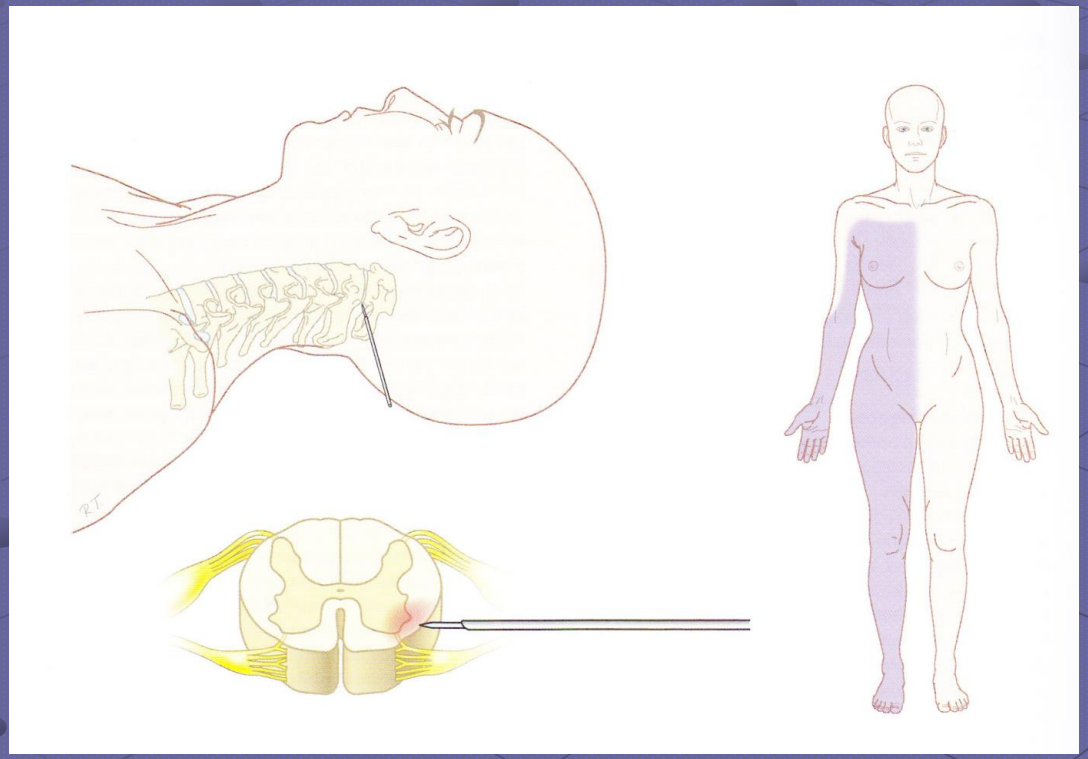
Dorsal horn Spinal cord

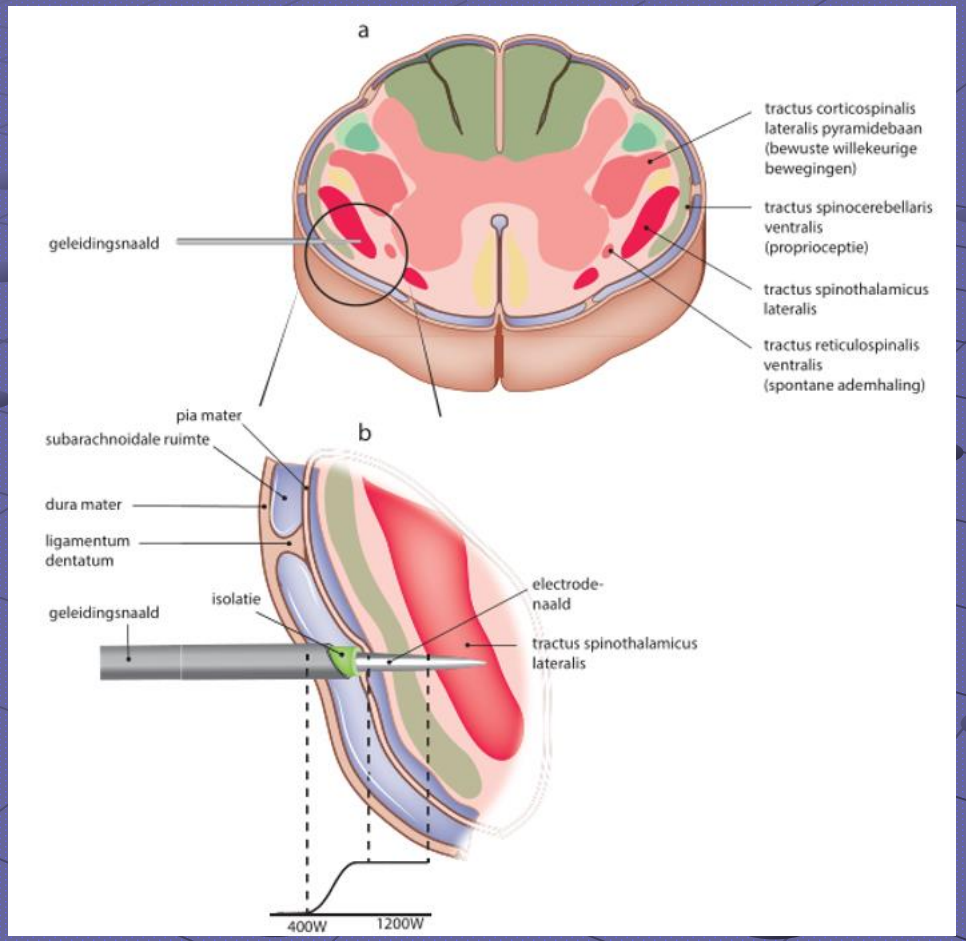
Nociceptor

Onderbreken van de tractus spinothalamicus anterior

Thv niveau C1 C2

- Grootste intervertebrale opening
- Arteria vertebralis anterieur tov merg
- Geen facet





Geschiedenis

1905	open cordotomy, midthoracic	Spiller & Martin
1932	open cervical	Forster & Gagle
1963	perc. strontium needle	Mullan
1965	***RF electrode***	***Rosomoff***
1969	stereotactic	Crue, Hitchcock
1989	CT guided	Kanpolat
2010	endoscopic guided	Fonoff

Percutane Cordotomie
indicaties

Indicaties

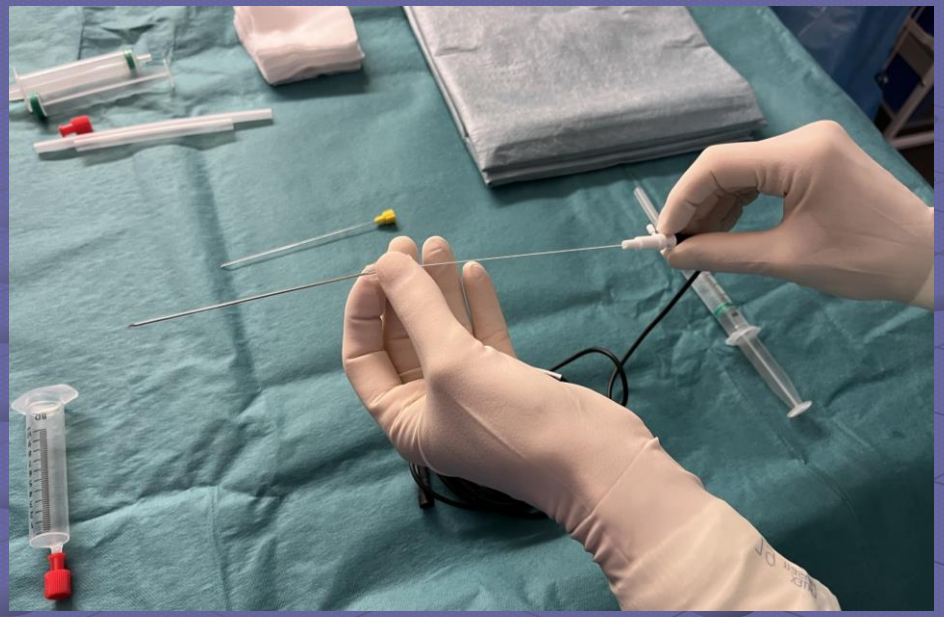
- Unilaterale pijn
- lager dan dermatoom C5
- patiënt met beperkte levensverwachting ± 6 maanden
- redelijke respiratoire functie

Voorbeelden

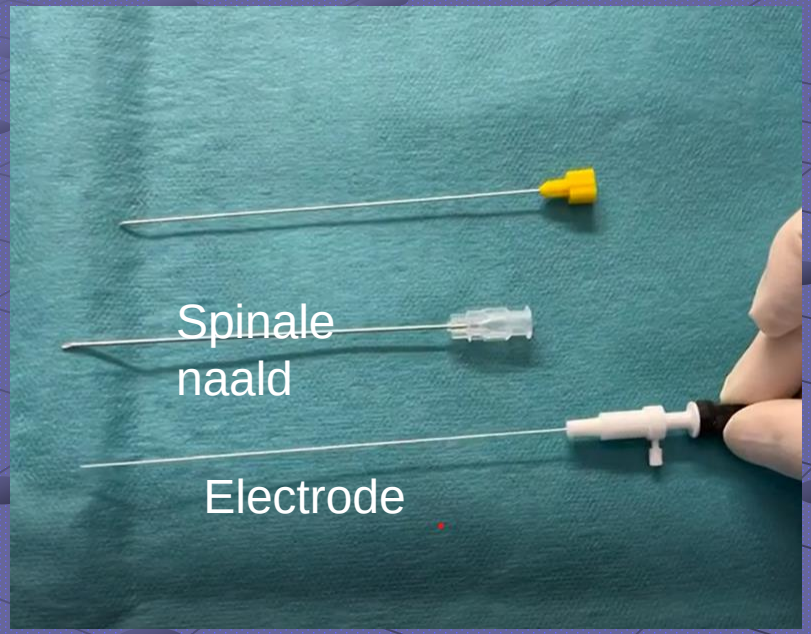
- Thoracale wand invasie door mesothelioma long
- Invasie plexus brachialis- long top tumor Pancoast syndroom
- Invasie plexus lumbo-sacralis met unilaterale beenpijn

Percutane Chordotomie

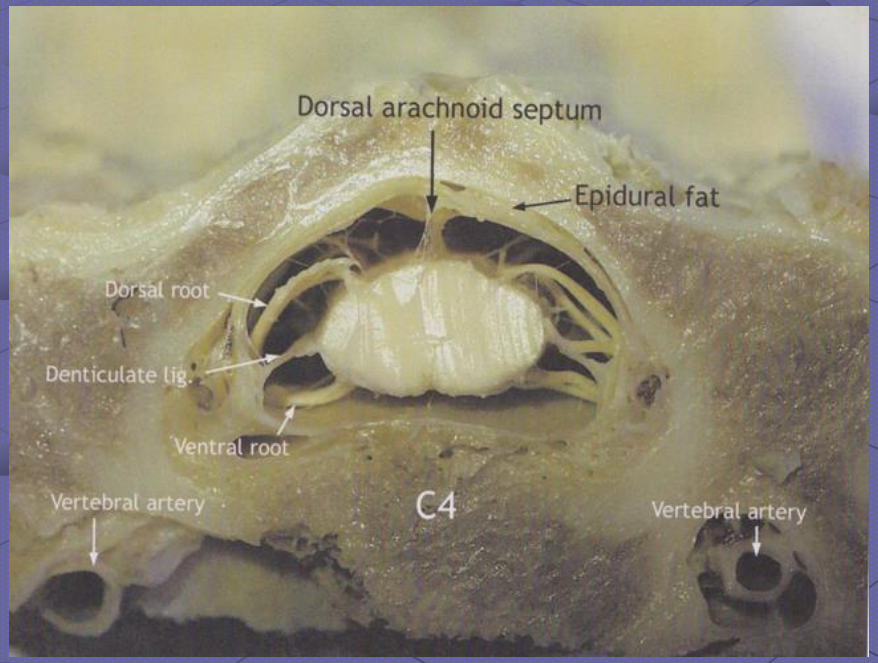
- patiënt in rugligging met hoofd gefixeerd
- Onder röntgen begeleiding
- spinale punctie tussen C1 en C2
- positie van lig. Dentatum identificeren door contrast subarachnoidaal te spuiten

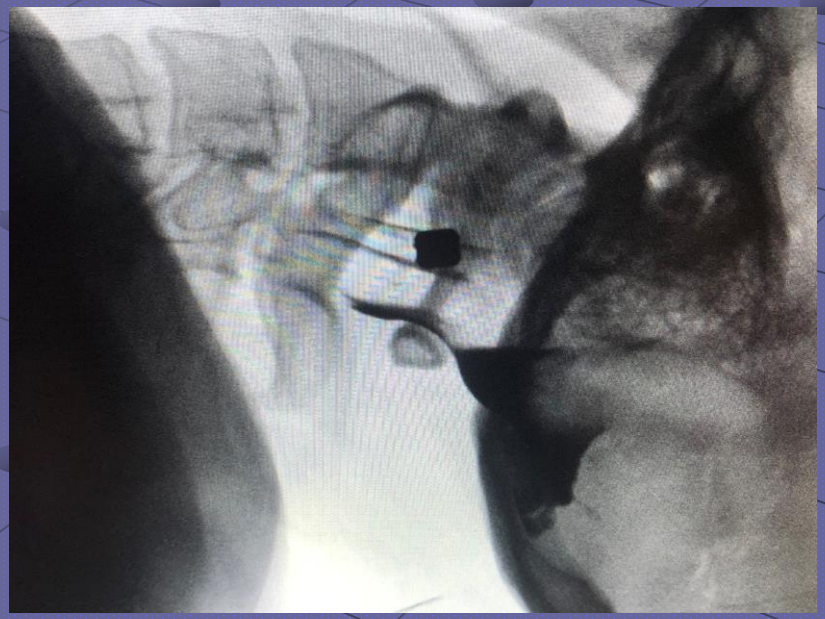


Minta probe




BD Plastipak

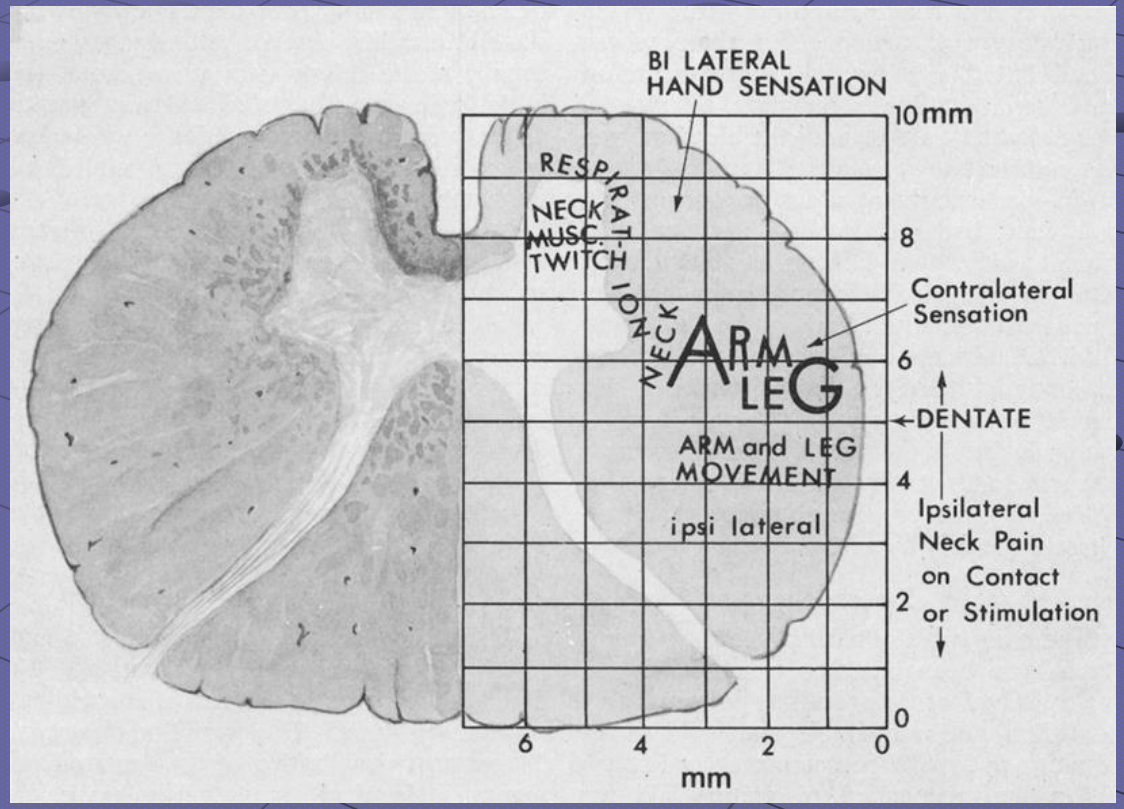

Dorsal arachnoid septum
Epidural fat
Dorsal root
Denticulate lig.
Ventral root
Vertebral artery
C4
Vertebral artery



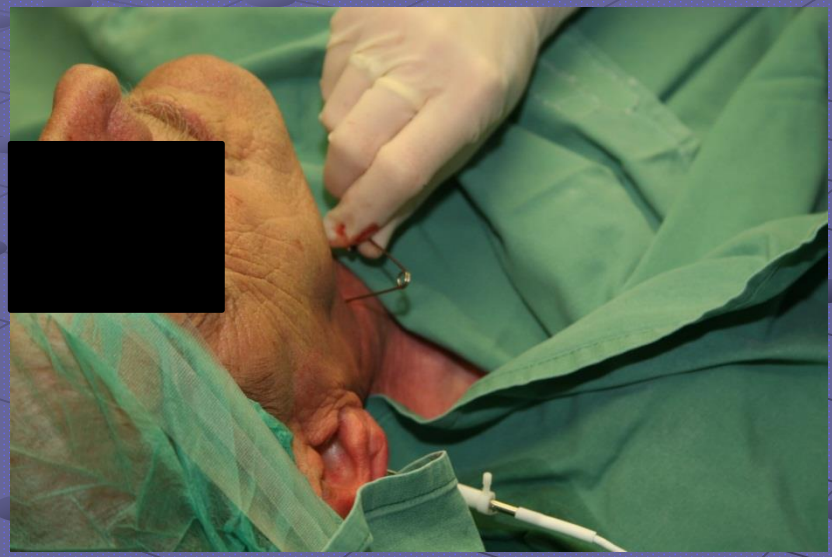

Sensory Stimulation
Use Control Knob
G4
0.02
508
32

Procedure Controle positionering electrode

1. Radioscopie : lateraal + AP -view
2. Impedantie stijging : 150 –300 →800-1000 Ohm
   CSV naar ruggenmerg
3. Sensorisch electrische stimulatie : 50 Hz
   - Stimulation at the region from the pain (<0,1V)
   - warmte, wind feeling, koude, paresthesia
   - Repositionering op geleide van functioneel schema
4. Motorische stimulatie



- behandeling :
  - 10 s op 85 - 90 °
- Controle met pin prick, voor contralaterale analgesie
- Controle van de kracht in armen en benen
- Herhaal de procedure

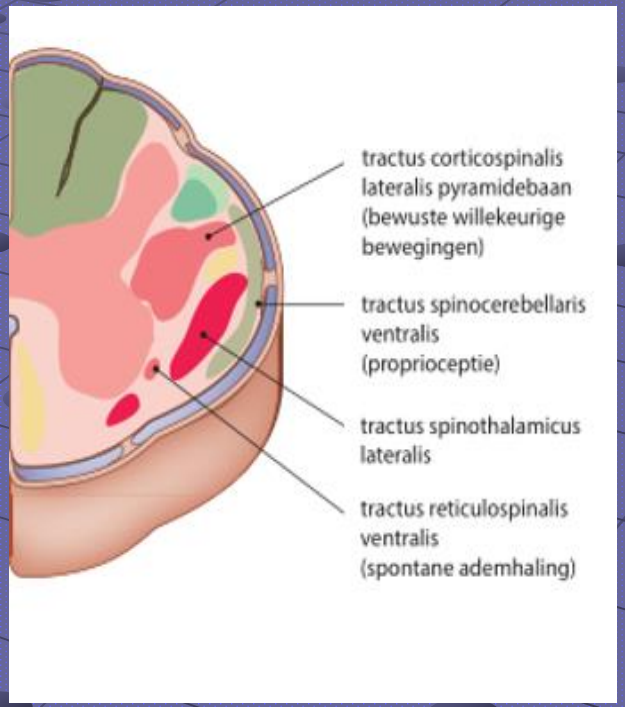


Percutane Chordotomie : neven effecten

- Hoofdpijn :
  - Cerebrospinaal vocht (CSV) lek
  - Mixen van CSV met bloed
  - Chemische meningitis door contrast
  - Transiente neuritis C2
- koorts : ware infectie/chemische meningitis

Percutane Chordotomie : complicaties

- respiratoire dysfunctie
- slaap apnoe
- hemiparese - meestal tijdelijk : oedeem
- blaas dysfunctie – tijdelijk : oedeem
- Syndroom van Horner
- arteriale hypotensie in 40% - tijdelijk



Cervicale chordotomie

- Evidence 2C+

Discussie

- Resultaten zijn ***case series*** (low level of evidence in GRADE system C+)
- Outcome van de case series zijn consistent
- Indrukwekkende reductie van pijn (>70 %) met blijvend effect
- Relatief weinig nevenwerkingen cfr de pathologie

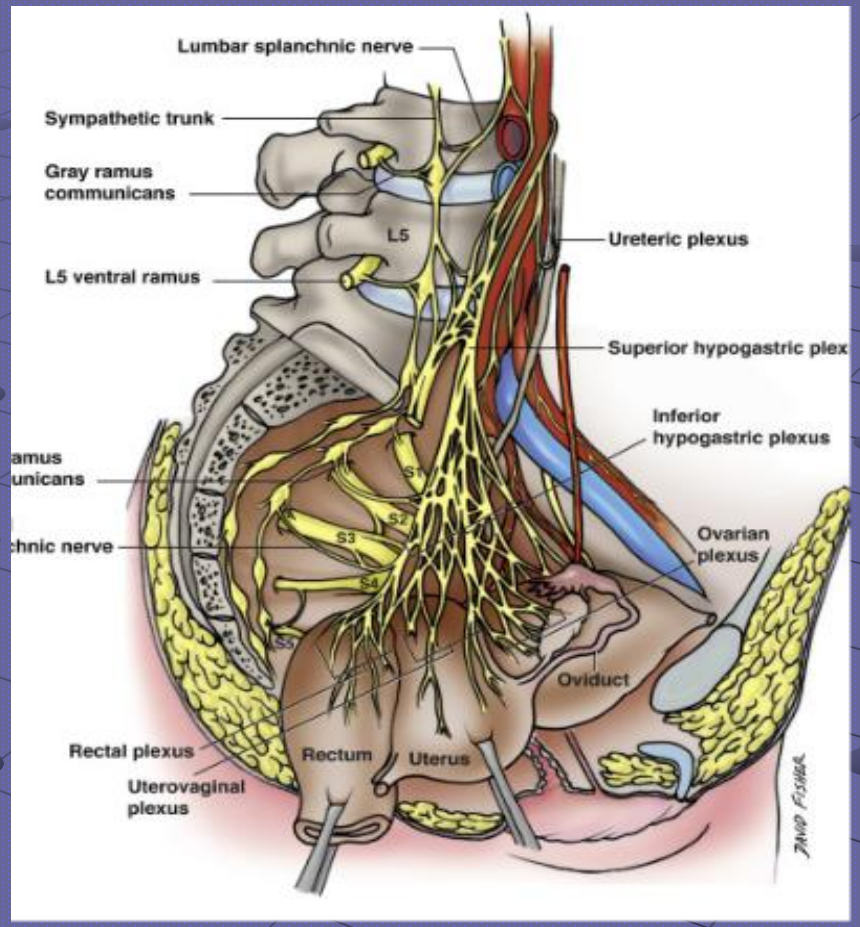
- Beperkt aantal centra in palliatieve care
- Regionaal refereer systeem
- Studieopzet Belgie/Nederland : chordo prospectieve database coordinatie vanuit Groningen

Interventional Techniques

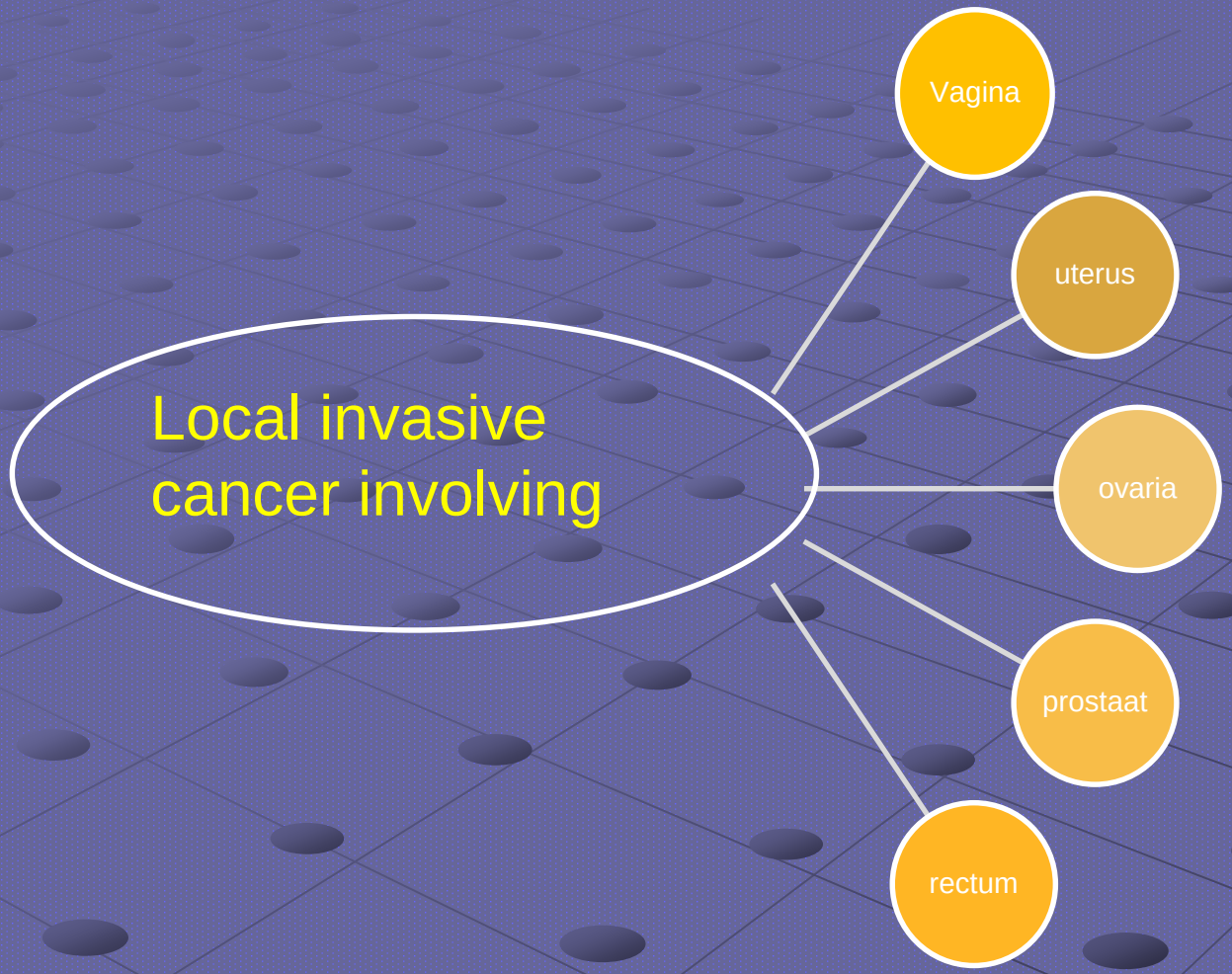
- Splanchnicus block/Coeliac plexus block
- Cordotomy
- Hypogastric plexus block
- Lower end block
- Ganglion impar block

Superior hypogastric plexus: anatomie

- Retroperitoneale structuur
- Bilateraal onderste 1/3 van het 5e lumbale wervellichaam en bovenste 1/3 van de eerste sacrale wervel of thv promontorium,
- Pelvische afferente en efferente vezels



Superior Hypogastric Plexus block



Superior Hypogastric plexus block

- Pelvische pijn tgv tumoraal proces
- Neurolytisch block => Niet voor niet kanker pijn
- Kan seksuele dysfunctie veroorzaken in mannelijke patienten mn retrograde ejaculatie
- Contra-indicaties
  - Bloedingsstoornissen
  - Infectie thv infiltratieplaats
  - Tumor invasie in de route van de naald

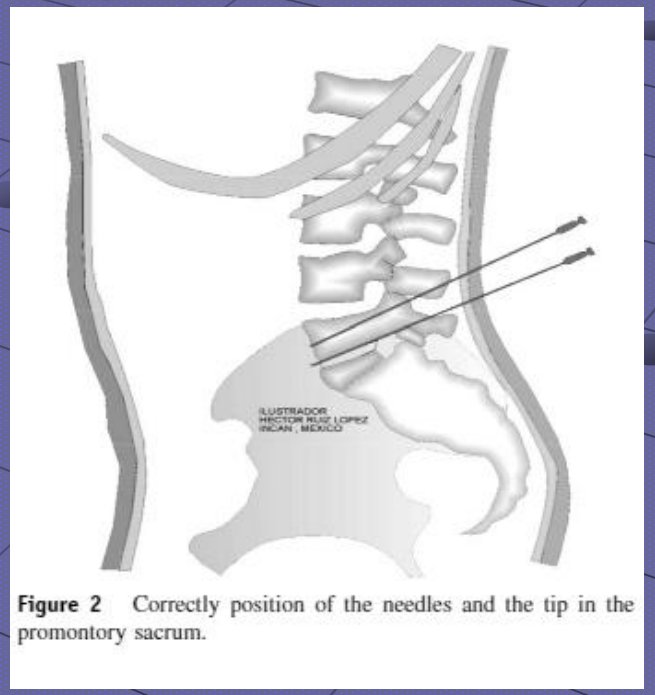
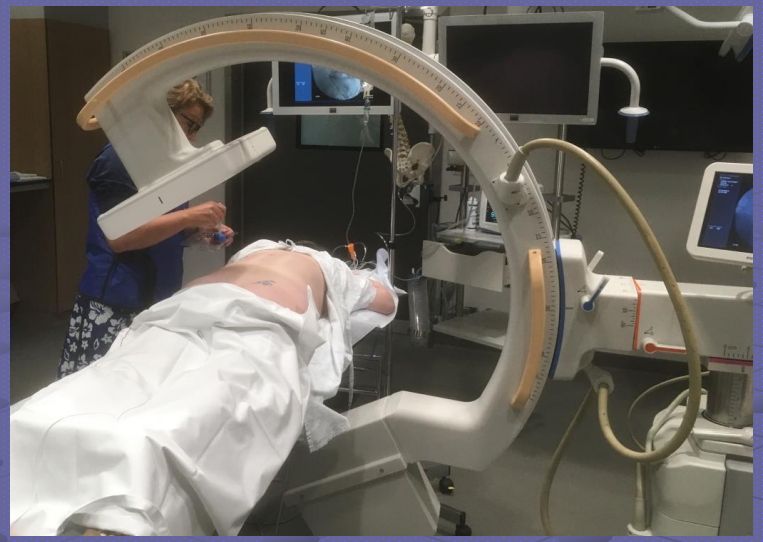
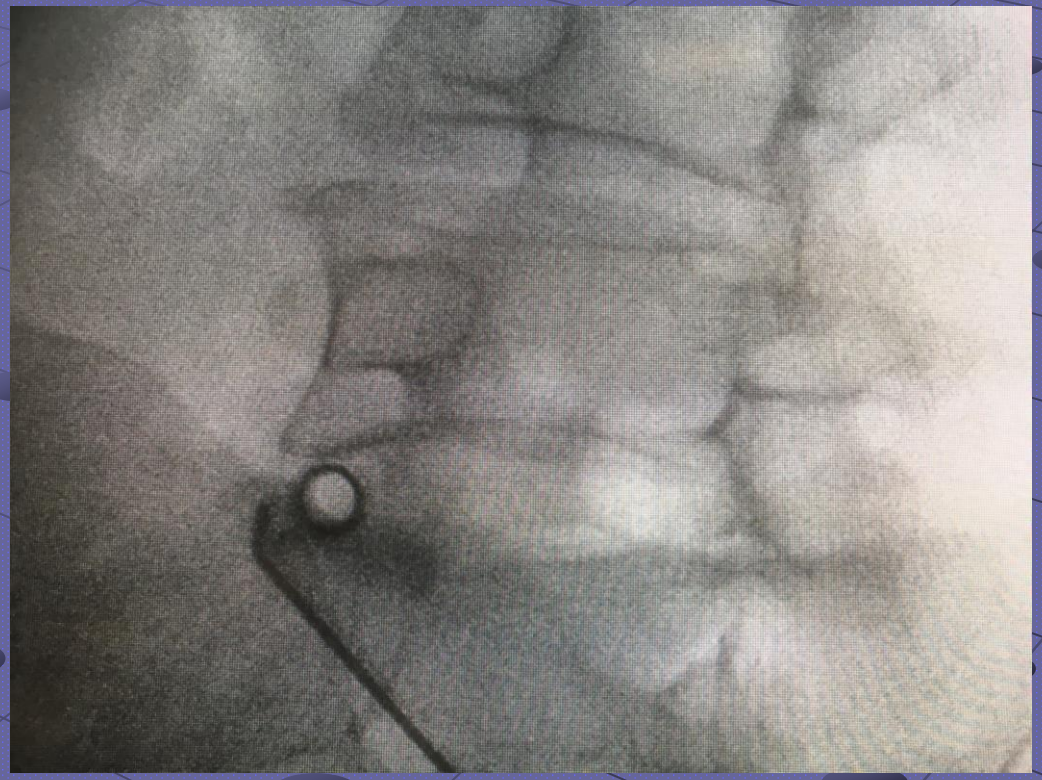
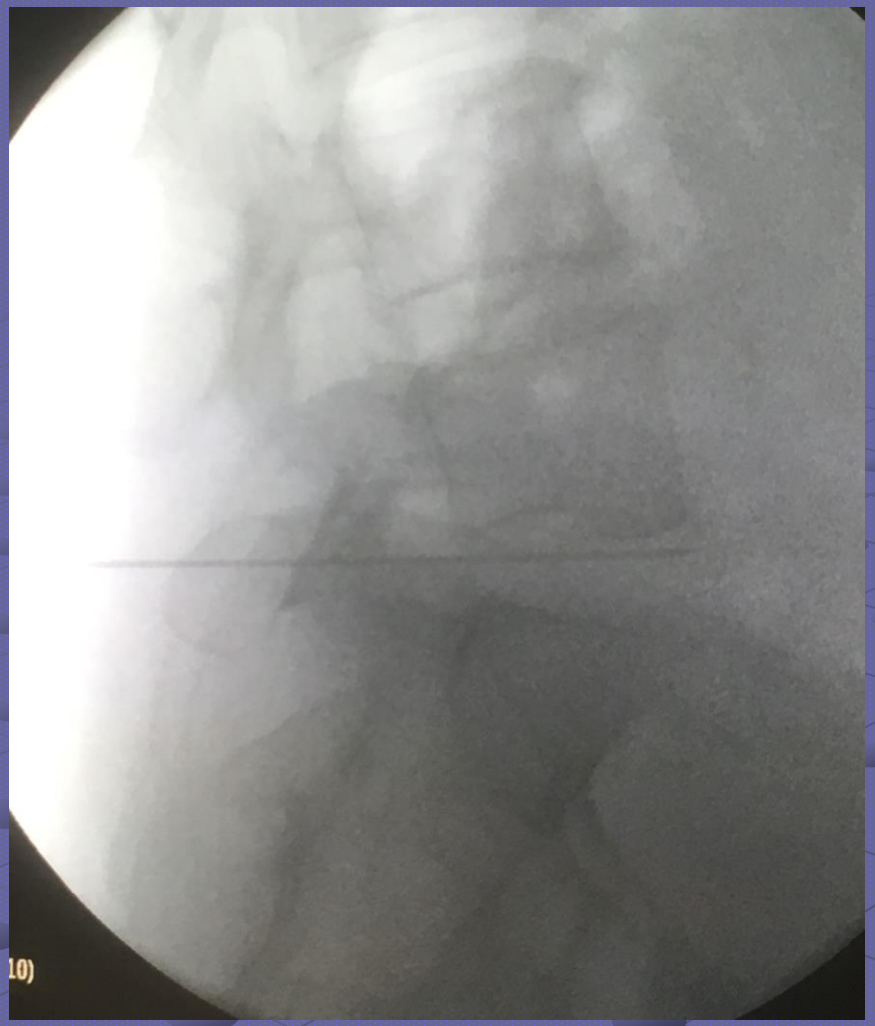
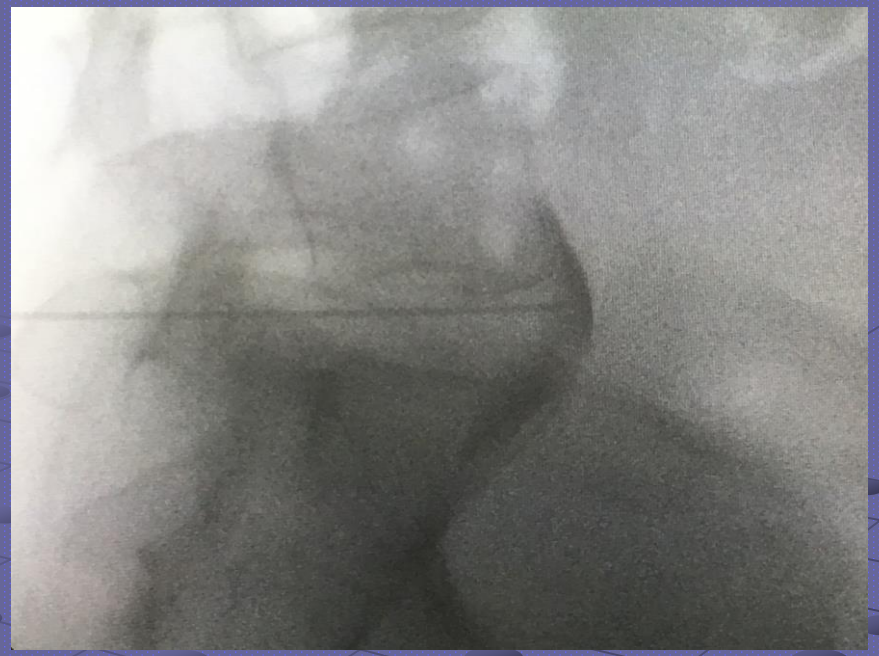


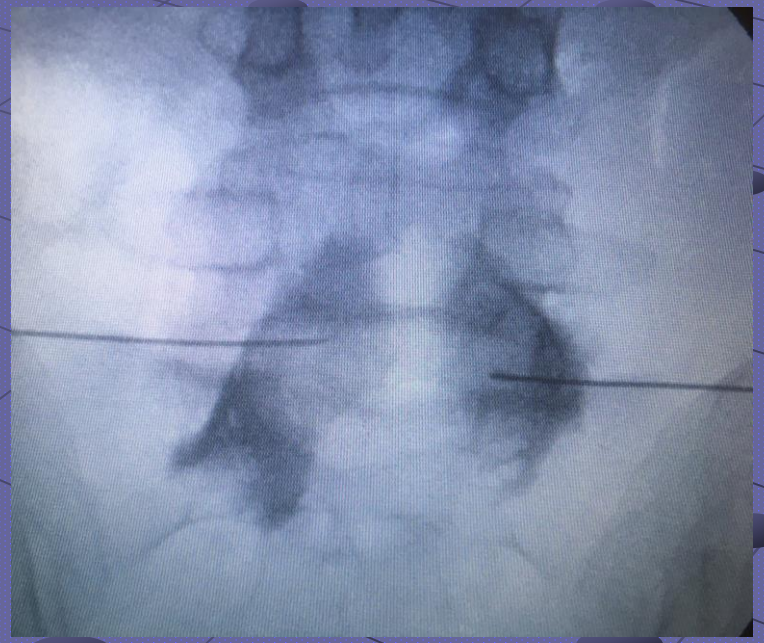
Figure 2 Correctly position of the needles and the tip in the promontory sacrum.











Current Pain and Headache Reports (2021) 25: 13
https://doi.org/10.1007/s11916-020-00933-0

CHRONIC PAIN MEDICINE (O VISWANATH, SECTION EDITOR)

A Comprehensive Update of the Superior Hypogastric Block for the Management of Chronic Pelvic Pain

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Accepted: 29 December 2020 / Published online: 25 February 2021
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		bupivacaine hydrochloride		pain in this case series
Phenol	Plancarte (1997)	Prospective cohort trial with 227 patients with gynecological, colorectal, or genitourinary cancer with pelvic pain taking oral opioids. A bilateral superior hypogastric plexus block of 10% phenol was performed 1 day following a block with 0.25% bupivacaine	Reduction of visual analog score pain in 72% (95% CI 65–79%) of patients and reduction in oral opioid therapy	The phenol-based superior hypogastric block was effective in 72% of patients in reducing pain and lessening the number of opioids required for pain relief
	Rocha (2020)	A retrospective analysis of 180 patients with chronic pelvic cancer pain treated with the classic or paravertebral technique of a superior hypogastric plexus neurolysis with phenol 10%	There was a significant reduction in VAS scores by 49.55% in 3 months as well as a 12.55% reduction in opioid use of in 3 months	The superior hypogastric plexus neurolysis is an effective treatment for chronic pelvic cancer pain and should be considered in order to reduce the potential damaging effects of opioid treatment
	Koyyalagunta (2016)	Retrospective chart review of 93 patients comparing using alcohol (50–100%) with phenol (5–10%) for splanchnic nerve neurolysis	There was no difference found in the 1-month post-procedure pain scores or side effects between the alcohol or phenol solutions. The only difference between the two agents found was the amount of volume required with 24.73± 8.89 mL of alcohol used compared to 20.24±5.95 mL used for phenol	A phenol-based block is just as effective as an alcohol-based block for splanchnic nerve neurolysis
Ethanol	Amr (2014)	Prospective cohort of 109 patients with abdominal or pelvic cancer and visceral pain were divided into two groups: a superior hypogastric plexus block was performed before strong opioids were given or strong opioids were given first, and then a superior hypogastric block was performed. A neurolytic block was performed with 12 mL of 70% alcohol and 3 mL of 2% lidocaine	Those who received the block before the opioids had significantly reduced pain levels and reduced opioid consumption	Before proceeding with step 2 on the WHO ladder (give strong opioids), performing an alcohol-based block can reduce the number of opioids needed
	Huang (2016)	A randomized clinical trial of 52 patients with upper abdominal malignancies and cancer pain was divided into two groups: a celiac plexus block alone or a combined neurolytic block of the celiac and superior hypogastric blocks	A 30±5 mL of alcohol used in a combined neurolytic block of the celiac and superior hypogastric plexus is more effective at treating upper abdominal cancer pain than using 21±3 mL of alcohol in a celiac plexus block alone. The group treated with both the celiac and superior hypogastric plexus block had reduced morphine use afterwards as well	A combined neurolytic block of the celiac and superior hypogastric plexus composed of 30±5 mL of alcohol reduced abdominal cancer pain than a celiac plexus block alone

- Chronische pijn en CA related
- Positief effect op de pijn
- Geen verschil phenol of alcohol

Evidence

- **Viscerale pijn ten gevolge van tumoren in het bekken**
- Neurolytisch plexus hypogastricus block overwogen (2 C +)

Plancarte R Neurolytic blocks of the sympathetic axis. Cancer Pain.1993,377-425

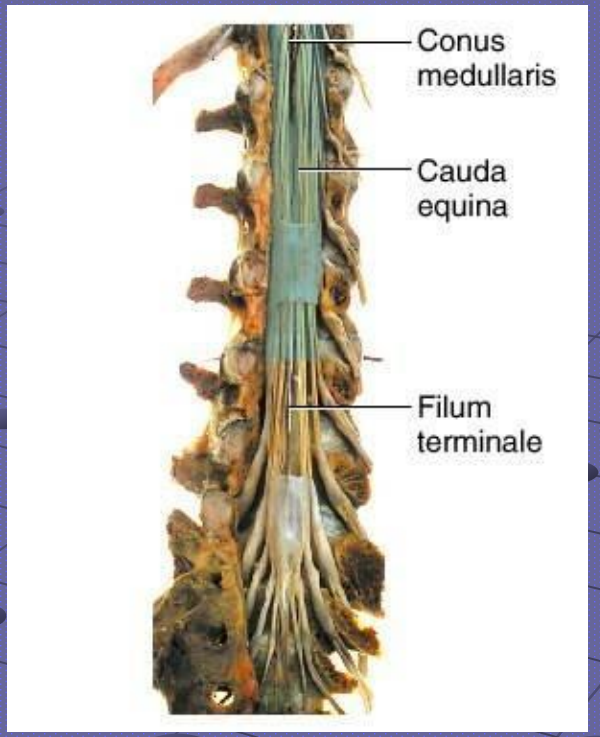
Interventional Techniques

- Splanchnicus block/Coeliac plexus block
- Cordotomy
- Hypogastric plexus block
- Lower end block
- Ganglion impar block

Lower End Block

Indicaties

- Perineale pijn door tumor invasie in het bekken
- Phenolisatie van de onderste sacrale wortels van de cauda equina
- Zittend, single shot



Complicaties

- Verlies van blaas en sfincter functie
- Vooraf bestaande urinaire en fecale incontinentie

Lower End Block

- geen studies laatste 20 jaar
- Case report UK 127 ptn : EFIC
- 16 ptn 2x
- 113 pt tevreden
- 19 ptn redo na 3 maand

Nevenwerkingen

Doofheid perineaal

Incontinentie urine/stoelgang

2pt weakness legs

Interventional Techniques

- Splanchnicus block/Coeliac plexus block
- Cordotomy
- Hypogastric plexus block
- Lower end block
- Ganglion impar block

Ganglion impar

- Meest caudale autonome ganglion van het lichaam
- het eind van de twee sympathische ketens
- anterieur van het sacrococcygeale gewricht in the retroperitoneum.
- 25-30mm anterieur van de tip van het coccyx .

Pijn startend vanuit

- Perineum
- Distale rectum
- Anus
- Distale urethra
- Vulva
- Distale 1/3 van de vagina
- Testiculair

Impar ganglion block

- Chronisch, neuropathische perineal pijn van viscerale en/of sympathische origine
- Non maligne en maligne.
- Plancarte et al. (1990)
- Transdiscale approach
- Low risk procedure

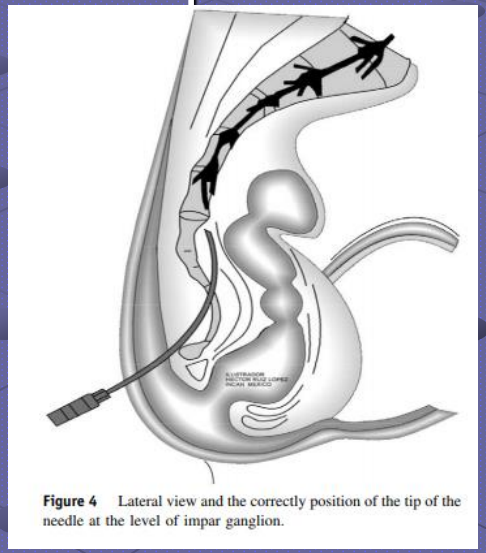
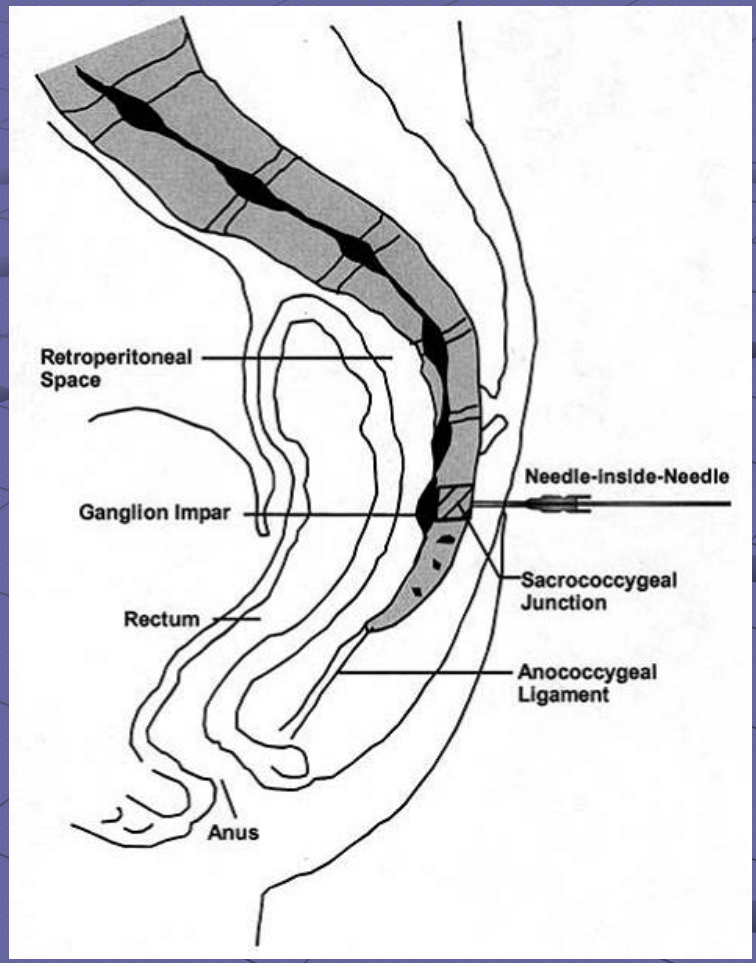


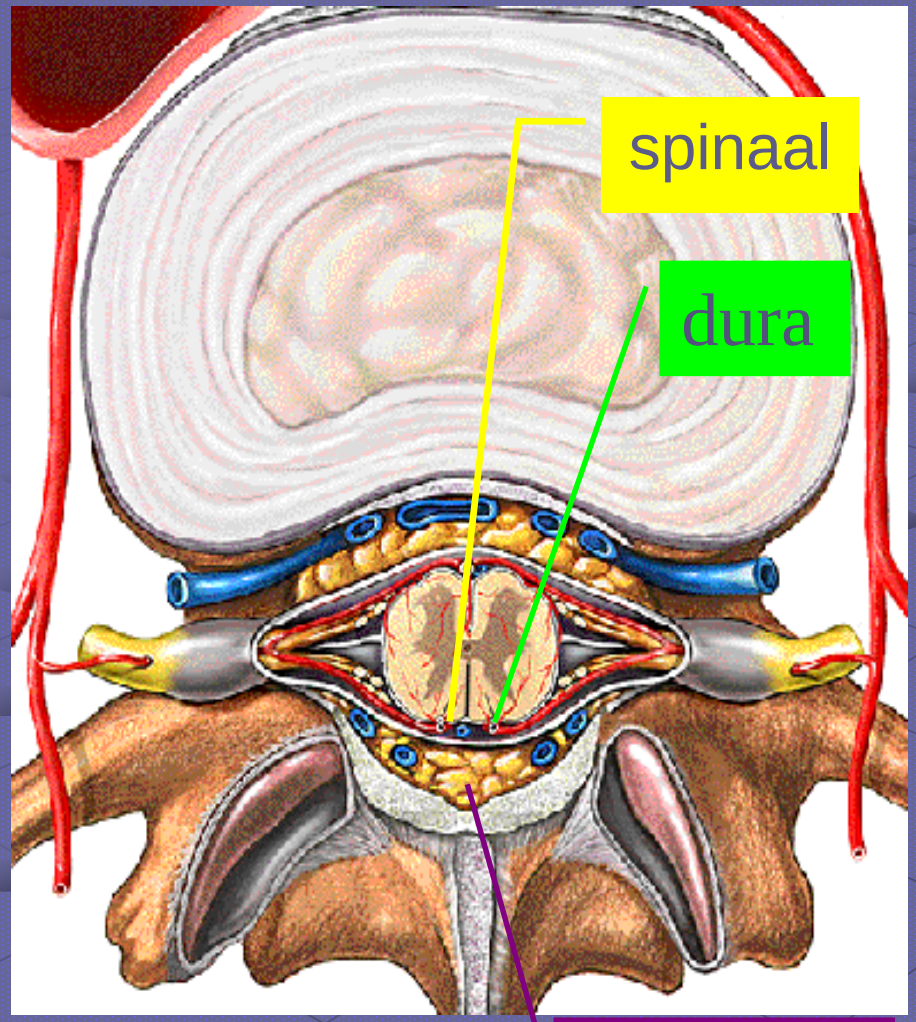
Figure 4 Lateral view and the correctly position of the tip of the needle at the level of impar ganglion.



Interventionele Technieken

- Spinale catheter

Epidurale/spinale catheter

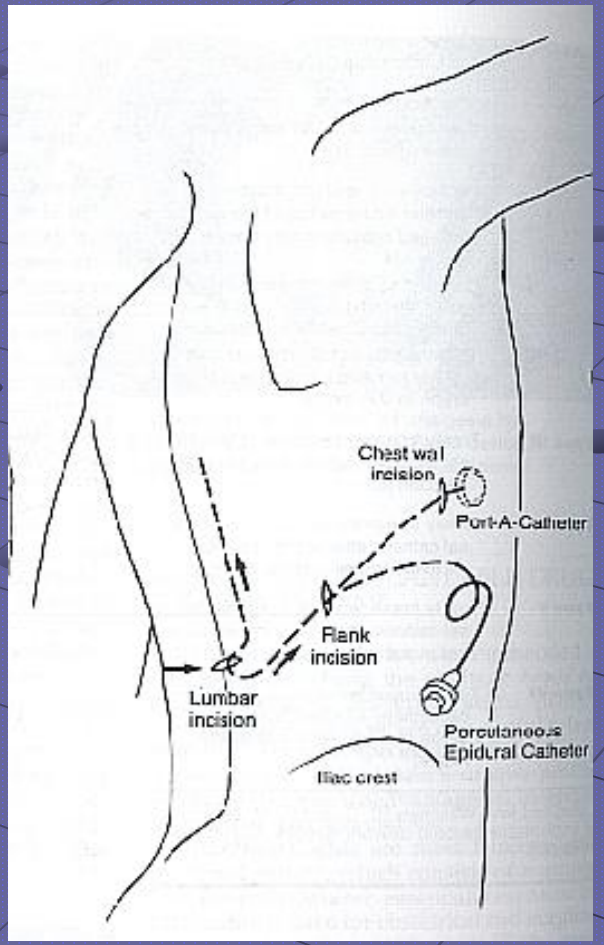


- = Voor / of door de dura
- hoge opioidnood, belangrijke nevenwerkingen
- opiaatreceptoren zitten thv
  - de hersenen
  - het ruggenmerg
- lage concentratie opioid met maximaal effect

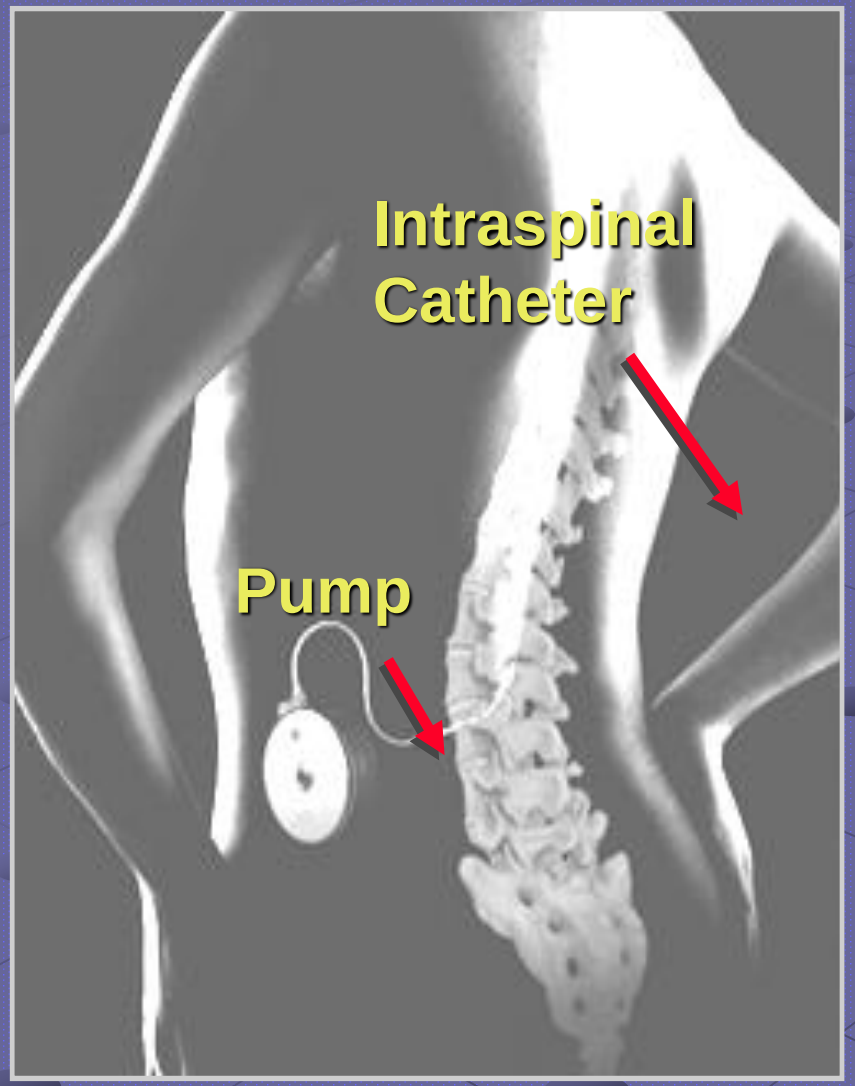
Spinale / Epidurale Pijnbestrijding

3 mogelijkheden

- Percutane catheter
- Port-A-Cath systeem
- Implanteerbare pomp



Implanteerbare Pompen



- Pomp Plaatsing
  - Abdominaal
- Catheter Positie
  - Subcutaan getunneld van de ruggengraat naar de pomp (cathetertippositie is variabel)

Spinale catheter

- pomp aangesloten

  - continu
  - bolus demand nuttig voor doorbraakpijn

Epidurale/spinale catheter

- Medicatie
  - Opioid : morfine, sufentanil
  - locaal anestheticum potentialiseert
    - mogelijks effect op motoriek,paresthesieën
  - Clonidine : neuropathische pijnen

Nevenwerkingen en complicaties

- Drug related: voornamelijk bij de start van de behandeling
- Catheter related:
  - infectie
  - mechanische obstructie
  - Fibrosis
- Hormonaal: na langdurige toediening : door immunotherapie is life expectancy toegenomen

Complicaties : korte termijn

- Epiduraal hematoom
  - Ontwikkeld eerste uren na plaatsing
  - Hevige pijn in de lumbale regio al dan niet met uitstraling in de benen
  - Motorische uitval
  - MBV
  - Urgente laminectomie

Epidurale / spinale catheter
Contra-indicaties

- Stollingsstoornissen
- Lokale infectie
- Epidurale pathologie

Maar ook...

- Sociale omgeving van de patiënt

- Interventional pain management is niet trap 4 op de pijnladder
- Afhankelijk van de patiënt dient dit geïntegreerd worden in een compleet management van kankerpatienten
  - Palliatieve kanker behandeling (chemo en radio therapie,heelkunde)
  - Pharmacologisch management
  - Interventioneel pijn management
  - Psychologic councelling
  - Informatie meedelen ivm behandelingsmodaliteiten

- Mag alleen uitgevoerd worden door ervaren artsen.
- Technieken vereisen wel een excellente anatomische kennis en technische skills

Take home messages

- Scoor pijn
- Denk multimodaal : Pijnbestrijding en oncologische behandeling kunnen hand in hand gaan
- Denk tijdig aan bijkomend advies pijnkliniek
- Bij aanmelden bij pijnkliniek : geen wachttijden !