

INTERVENTIONAL PAIN MANAGEMENT A FRESH OUTLOOK

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DISCLOSURES



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GRAND ROUNDS ?

- AN ESCALATING PUBLIC HEALTH PROBLEM. > HEART DISEASE AND DM
- CONVENTIONALLY **SPINE PAIN** HOWEVER A LARGE POPULATION OF CHRONIC PAIN PATIENTS PRESENT WITH A RATHER COMPLEX , MIXED NATURE OF PAIN PRESENTATION
- LARGE INFLUX OF SUCH PT,S DIAGNOSED WITH FIBROMYALGIA , ABDOMINAL PAIN OF UNKNOWN ORIGIN , PELVIC PAIN , CRPS , POST TRAUMATIC HEADACHES ETC. (**UNCONVENTIONAL PAIN SYNDROMES**)
- 5TH VITAL SIGN



OVERVIEW

New facts re Chronic Pain

Challenging syndromes

Why Modern ?

Why not Opioids ?




Chronic Pain States

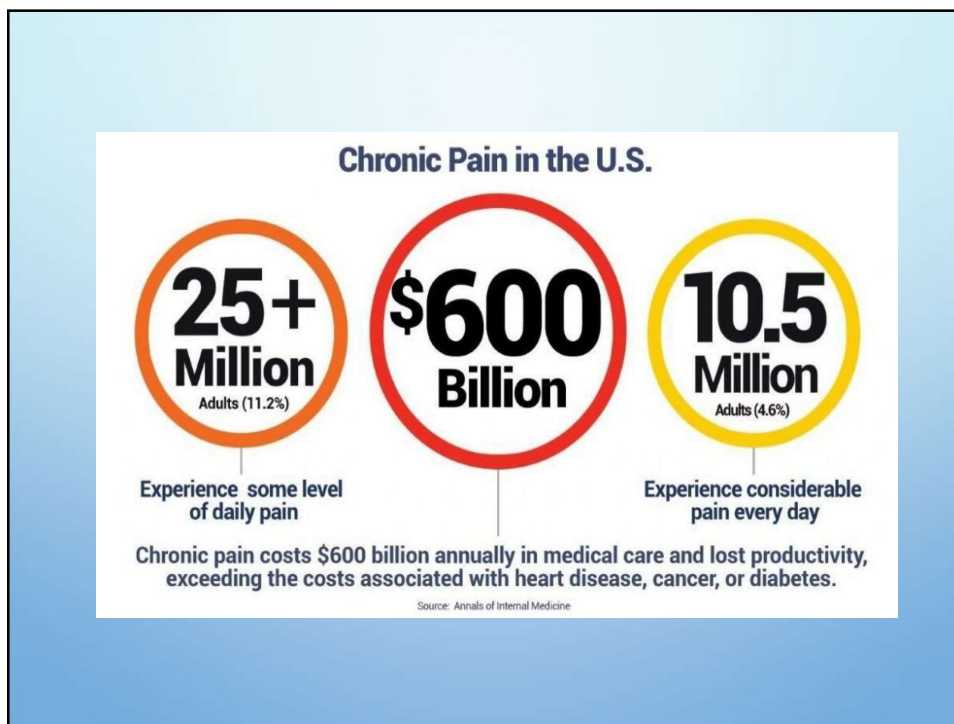
Neuromodulation and New Innovations

Chronic Pain - Facts Known

- Pain is a significant national health problem
- Most common reason people seek medical care
- The annual cost of chronic pain in the US, including healthcare expenses, lost income, and lost productivity, is estimated to be **\$100 Billion**



CHRONIC PAIN - NEW FACTS

-  Chronic pain affects more than 100 million American adults—more than the total affected by heart disease, cancer, and diabetes combined.
-  Socioeconomic burden up-to **\$635 billion** each year in medical treatment and lost productivity
-  Its high time we redefine pain and explain how modern pain management can help curb this epidemic.



Modern Pain Management

Why a fresh outlook ?

-  **Long standing pain : causes reinforcement of pain pathways to the brain**
-  ***If the thing that's making it hurt is taken away, the brain still feels the pain."***

Goal : Interrupting these virtual signals to the brain to prevent formation of a **complex web of anxiety, depression, insomnia and chronic pain.**

...and allows the same medical regimen to be much more effective

OPIOIDS !

- IS THAT AN ANSWER TO ROAD BLOCKS ?



- OPIOID TOLERANCE
- OPIOID HYPERALGESIA
- OPIOID ADDICTION



OPIOIDS !

- ▶ REDIRECTION OF PAIN SIGNALS RESULTING IN A VISCOUS WHIRLPOOL OF CHRONICITY
- ▶ IMPACTS THE PATIENTS NORMAL INTERNAL PHYSIOLOGY AND OVERALL HEALTH WELLNESS OUTCOMES.
- ▶ NEW CMS GUIDELINES : RESTRICT OPIOIDS FOR CHRONIC PAIN (MORPHINE EQ :50 – 90)



STATISTICS ON OPIOIDS IN USA

- 22.6 M /8.9% OF AMERICANS , 12 YRS OR OLDER WERE CURRENT OR PAST MONTH ILLICIT DRUG USERS
- 1 IN 6 SAID THEY RECEIVED A PRESCRIPTION FOR OPIOID DRUGS
- OPIOID DEATHS > MVA OR SUICIDES

- 60% OF OPIOID DEATHS HAPPENED WHEN THEY WERE PRESCRIBED PER GUIDELINES



CHALLENGING CHRONIC PAIN STATES

Fibromyalgia


Abdominal Pain

Pelvic Pain

CRPS

Headaches / Posttraumatic Headaches


Postsurgical spine pain



FIBROMYALGIA

- ▶ CHRONIC WIDESPREAD LOW GRADE SEIZURES IN NERVES

- ▶ MAJOR RECOMMENDATIONS (GOOD , LEVEL A)
 - EDUCATION , INTERNET RESOURCES AND FIQ , MEDS
 - AEROBIC EXERCISE'S , CBT
 - TCA , SNRI , SSRI,S , NO OPIOIDS



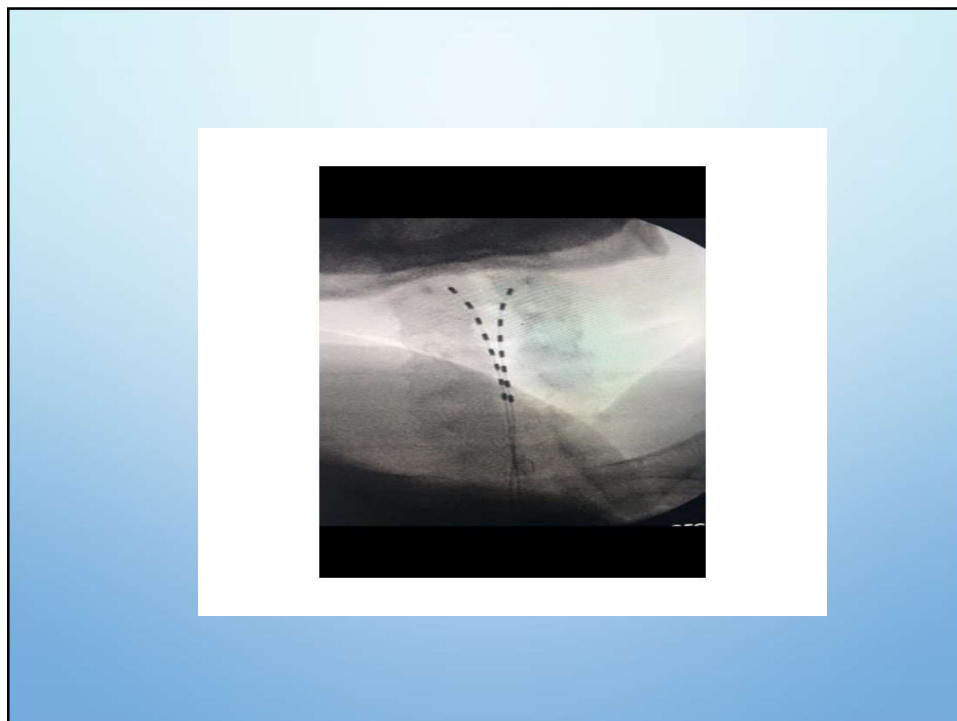
FIBROMYALGIA

LITTLE OR NO EVIDENCE IN EFFICACY FOR FIBROMYALGIA TREATMENT:

- CHIROPRACTIC THERAPY
- MASSAGE THERAPY
- ULTRASOUND
- TRIGGER POINT INJECTIONS

FIBROMYALGIA

- STATE OF CHRONIC SEIZURES IN THE NERVES.
- TRADITIONALLY : BANDAID APPROACH
- THE HOT SPOTS CONCEPT
- C2 MODULATION FOR THE INTRACTABLE SYNDROMES
- PUNCH BIOPSY – SMALL FIBER DISEASE



ABDOMINAL PAIN

Most pts have a negative GI Workup

Somatic and Visceral Component interaction

Opioids ?? – Nucynta

Multimodal approach : Neuropathic / NSAIDS

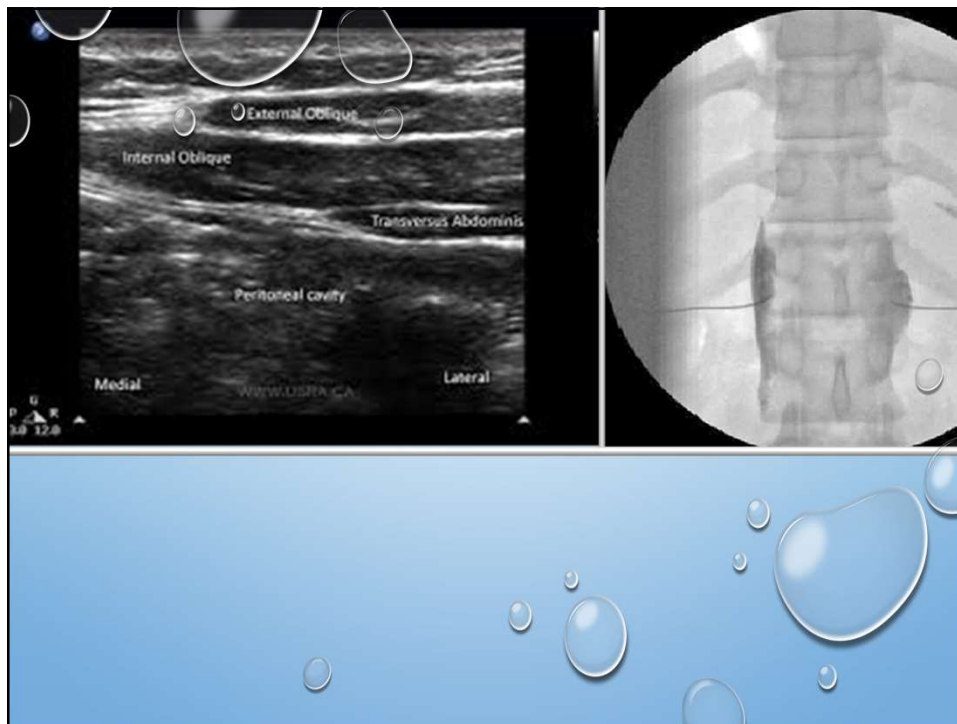
ABDOMINAL PAIN

Diagnostics for each component- TAP block , Celiac Plexus block

Intercepting Pain signals from the Back


(Celiac plexus blocks / Splanchnic nerve blocks –RFA)

Dermatomal Pain : Spinal cord stimulation /DRG stimulation Neuromodulation



PELVIC PAIN

- ALARMING RISE IN PREVALENCE
- IS JUST NOT IN THE MIND ! - SOCIAL TABOO
- CAN AFFECT MALES AND FEMALES
- MOST PTS HAVE SEEN A OBGYN/ UROLOGIST AND HAD SURGICAL PROCEDURES
- MOST OF THEM ARE ON OPIOIDS – **ROAD BLOCK**



PELVIC PAIN

- INFECTION/ PELVIC BONE / REPRODUCTIVE AND NON REPRODUCTIVE
- ENDOMETRIOSIS/ PELVIC ADHESIONS
- INTERSTITIAL CYSTITIS
- PELVIC FLOOR MYALGIA
 -
 - SYMPATHETIC STORM*
 - *VISCERAL HYPERALGESIA*
 - *PHANTOM ABDOMEN*



PELVIC PAIN

MANAGEMENT :

- A TRUE MULTIMODAL APPROACH
- ANTIDEPRESSANTS / ANXIOLYTICS
- NEUROPATHIC ANALGESICS
- PELVIC FLOOR THERAPY
- INTERVENTIONAL STRATEGIES

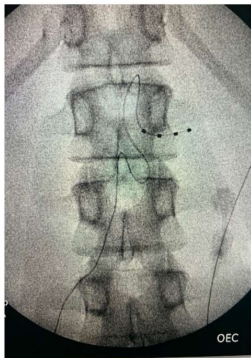
PELVIC PAIN

- SOMATIC MECHANISM
 - PUDENDAL NERVE S2 , S3 , S4
- SYMPATHETIC MECHANISM
 - T12-L2
- PARASYMPATHETIC MECHANISM
 - S2 , S3 , S4
 - SUPERIOR HYPOGASTRIC PLEXUS BLK
 - CAUDAL ESI

PELVIC PAIN

NEUROMODULATION

- SPINAL CORD STIMULATION
- RETROGRADE STIMULATION
- DORSAL ROOT GANGLION (DRG)



RENAL PAIN

Chronic renal calculi

Multiple urological surgeries

Peripheral neuropathy

Celiac interception

Spinal column stimulation – DRG

COMPLEX REGIONAL PAIN SYNDROME

CRPS

- DAMAGE / MALFUNCTION OF THE PERIPHERAL OR CENTRAL NERVOUS SYSTEMS
- BLOOD VESSELS IN THE AFFECTED AREA DILATE, LEAK FLUID INTO THE SURROUNDING TISSUE, CAUSING EDEMA
- UNDERLYING MUSCLES AND TISSUES BECOME STARVED OF OXYGEN AND NUTRIENTS, CAUSING MUSCLE AND JOINT PAIN AND DAMAGE.



CRPS

- TRADITIONALLY KNOWN AS A DISEASE
- NOW DESCRIBED AS A SPECTRUM (NEUROPATHIC PAIN)



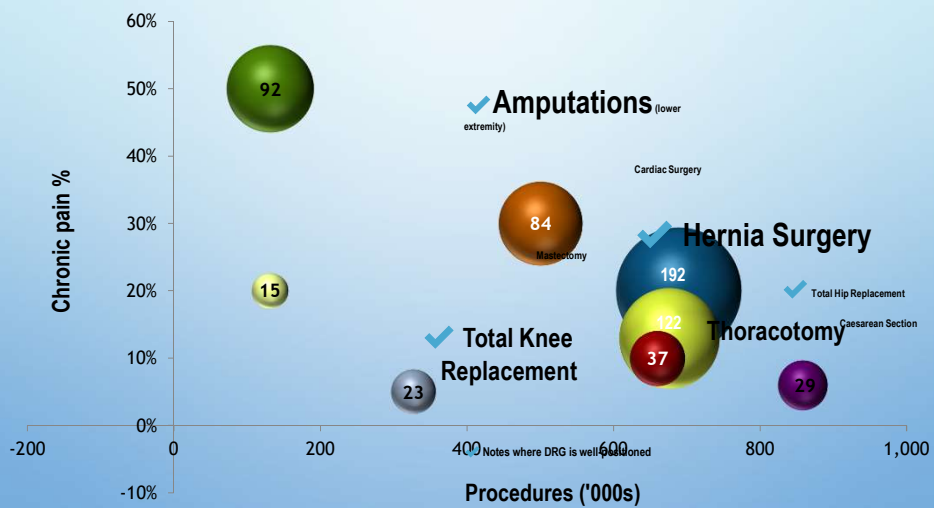
CRPS

- REHABILITATION THERAPY/PSYCHOTHERAPY
- NEUROPATHIC MEDICATIONS
- EARLY INTERVENTIONAL PAIN MANAGEMENT
- EARLY NEUROMODULATION

CHRONIC POST SURGICAL PAIN (CPSP)

- UNUSUALLY PROLONGED POST OPERATIVE PAIN COURSE
- LARGELY NEGLECTED OR RATHER OVERLOOKED
- EARLY AND AGGRESSIVE TREATMENT NEEDED
- CONTRIBUTES TO OPIOID EPIDEMIC

SURGICAL PROCEDURES – CPSP





- ## INTERVENTIONAL HEADACHE PROGRAM
- ONGOING HEADACHE MANAGEMENT BY NEUROLOGISTS/PCP
 - OCCIPITAL NERVE BLOCKS
 - CERVICAL FACET RHIZOTOMY- CERVICALGIA
 - STELLATE GANGLION BLOCK
 - NEUROMODULATION – SPINAL CORD STIMULATION
 - PERIPHERAL NERVE STIMULATION

FAILED BACK SURGERY SYNDROME

- ▶ WHEN SPINE SURGERY DID NOT COMPLETELY MEET THE EXPECTATIONS OF A PAIN PATIENT – LAMINECTOMY / FUSION

- ▶ INCIDENCE 20 -40% IN 200,000 EACH YEAR

- ▶ IMPROPER PREOPERATIVE PATIENT SELECTION BEFORE BACK SURGERY / LEVELS OF FUSION

- ❖ RECURRENT DISC HERNIATION AFTER SPINE SURGERY
- ❖ EPIDURAL FIBROSIS
- ❖ ADJACENT SEGMENT DISEASE

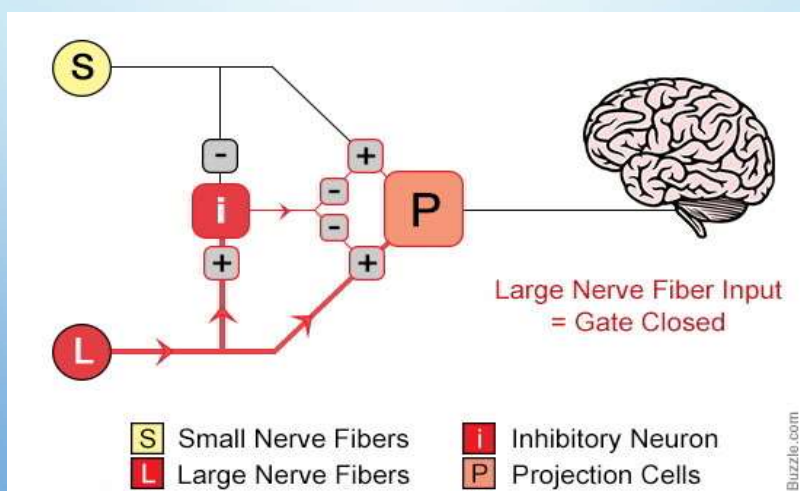
FAILED BACK SURGERY SYNDROME

- EXTREMELY COMPLICATED AND COMPLEX
- MIXED PAIN PATTERN
- MULTIPLE PAIN GENERATORS
- USUALLY HIGH DOSES OF OPIOIDS
- REQUIRE NUMEROUS STEROID BASED INTERVENTIONS

SPINAL COLUMN STIMULATION/ NEUROMODULATION

- GATE CONTROL THEORY AND INNATE OPIOID RELEASE
- INDEPENDENT OF PAIN GENERATOR TYPE
- PROVEN IN SYMPATHETIC WEBS
- TEST DRIVE
- FACILITATES OPIOID WEANING

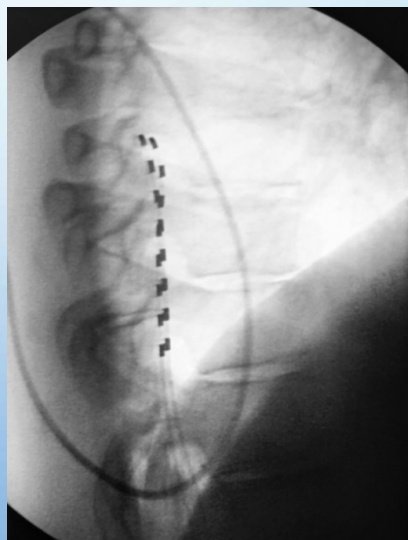
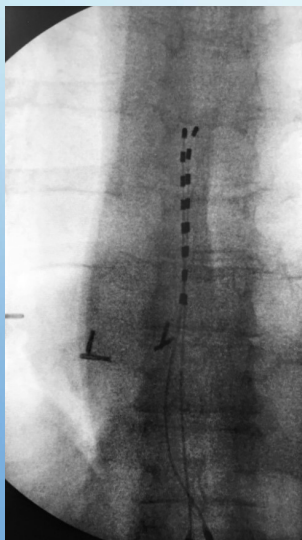
GATE CONTROL THEORY



NEUROMODULATION

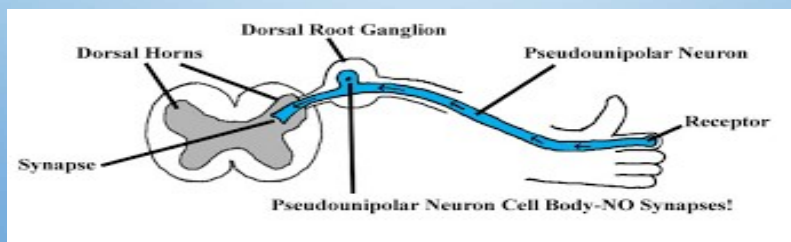
- 2 OR 3 CATHETERS ARE PLACED IN THE EPIDURAL SPACE , OR NEAR OTHER SPINAL STRUCTURE'S
- TEST OR A TRIAL PHASE
- IMPLANT PHASE : PULSE GENERATOR IS IMPLANTED IN LOWER BACK MUSCLES

SCS STIM

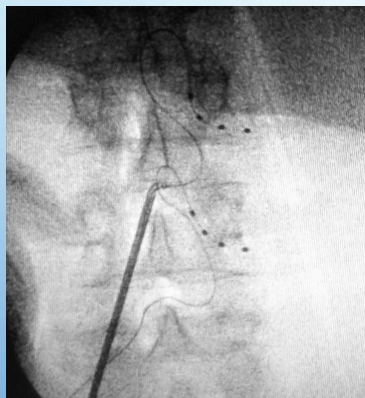


NEW INNOVATIONS : DORSAL ROOT GANGLION STIMULATION

- GROUP OF NEURONS CLUSTERED IN A SAC JUST BEFORE NERVES ENTER THE CORD
- TRADITIONALLY CONSIDERED AS HAVING FOOD RESERVES
- MODULATES CHRONIC PAIN SIGNALS ENTERING THE SPINAL CORD

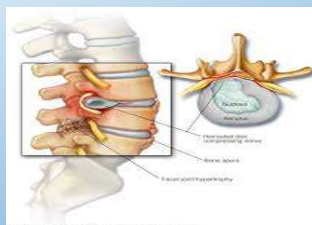


DRG



SPINAL STENOSIS AN EPIDEMIC IN MAKING

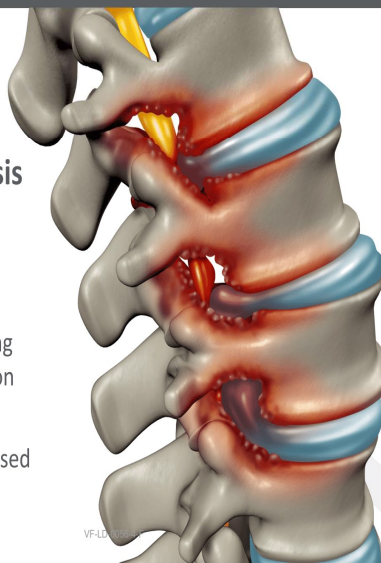
- A DISEASE OF THE ELDERLY
- NARROWING OF THE VOLUME OF THE SPINAL CANAL
- CLAUSTROPHOBIC FEELING TO THE NEURAL ELEMENTS
- MILD , MODERATE AND SEVERE
- SURGERY WAS THE ONLY OPTION
- NOW A MINIMALLY INVASIVE OPTION



Net Prevalence & Incidence of Patients Annually

Lumbar Spinal Stenosis

- **14M** symptomatic LSS patients in the US
- Net Prevalence: **1.8M** patients in the US matching the Indications for Superion
- Net Incidence: **109K** additional patients diagnosed every year

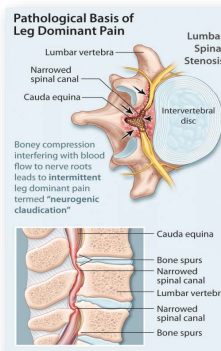


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SPINAL STENOSIS AN EPIDEMIC IN MAKING

Neurogenic Intermittent Claudication (NIC)

1. The symptoms and location of NIC are:
 - Pain
 - Cramping
 - Weakness
 - Tingling
 - Back
 - Buttocks
 - Legs
2. Worsened when walking or standing
3. Unilateral or Bilateral
4. Spinal flexion naturally widens the spinal canal and relieves symptoms
5. NIC symptoms are secondary to LSS



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Clinical Presentation of NIC Secondary to LSS

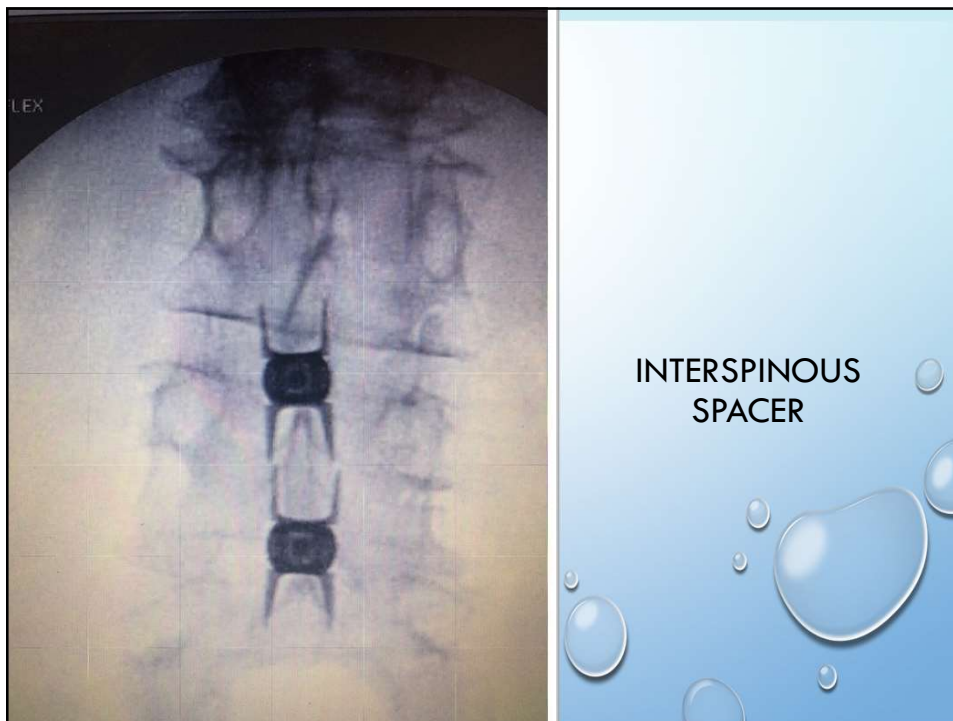
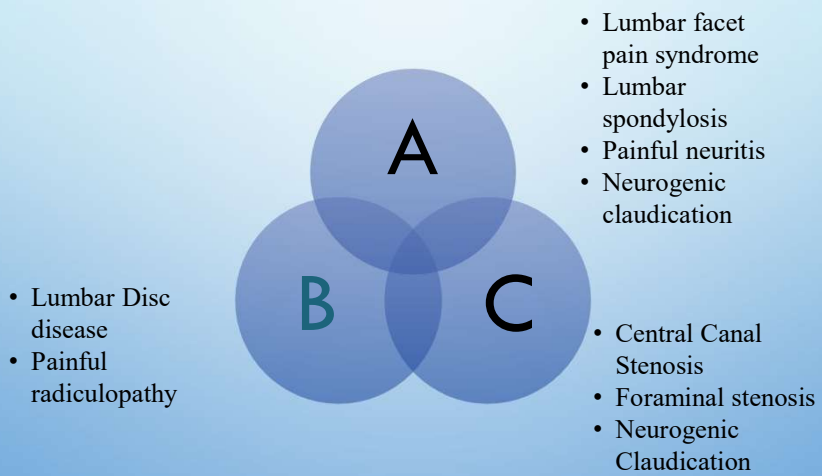


- | | | |
|--|--|--|
| EXTENSION | "SHOPPING CART" SIGN | FLEXION |
| <ul style="list-style-type: none"> Extension provokes symptoms Pain / weakness in legs | <ul style="list-style-type: none"> Leaning forward while walking to ambulate more comfortably | <ul style="list-style-type: none"> Sitting relieves symptoms* |

*Lack of symptom relief with flexion is exclusionary for Superior patient selection

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MEHTA ,S ABC MODEL OF SPINE PAIN



TAKE HOME MESSAGE

- MEANINGFUL USE OF OPIOIDS
- DIAGNOSIS AND RECOGNITION OF PAIN GENERATORS AND POTENTIAL CHRONICITY
- EARLY INCORPORATION OF INNOVATIVE INTERVENTIONAL TECHNIQUES TO MULTIDISCIPLINARY PAIN PROGRAMS
- **S.A.V.E**

THANK YOU !!!

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