

# SPINAL CORD STIMULATION (SCS) OF THE DORSAL ROOT GANGLION (DRG) FOR GROIN PAIN – A MULTI-CENTER CASE SERIES

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Conflicts of Interest: XXXXXXX

## INTRODUCTION

Spinal cord stimulation (SCS) for chronic neuropathic pain syndromes has become a standard treatment option in many pain clinics over the years. However, it is recognized that some anatomical pain distributions are known to be difficult to cover with SCS induced paresthesias. We present the results from 18 patients (prospective and retrospective data) suffering from groin pain of various etiologies treated with a CE marked neuromodulation device that utilizes SCS of the dorsal root ganglion (DRG).

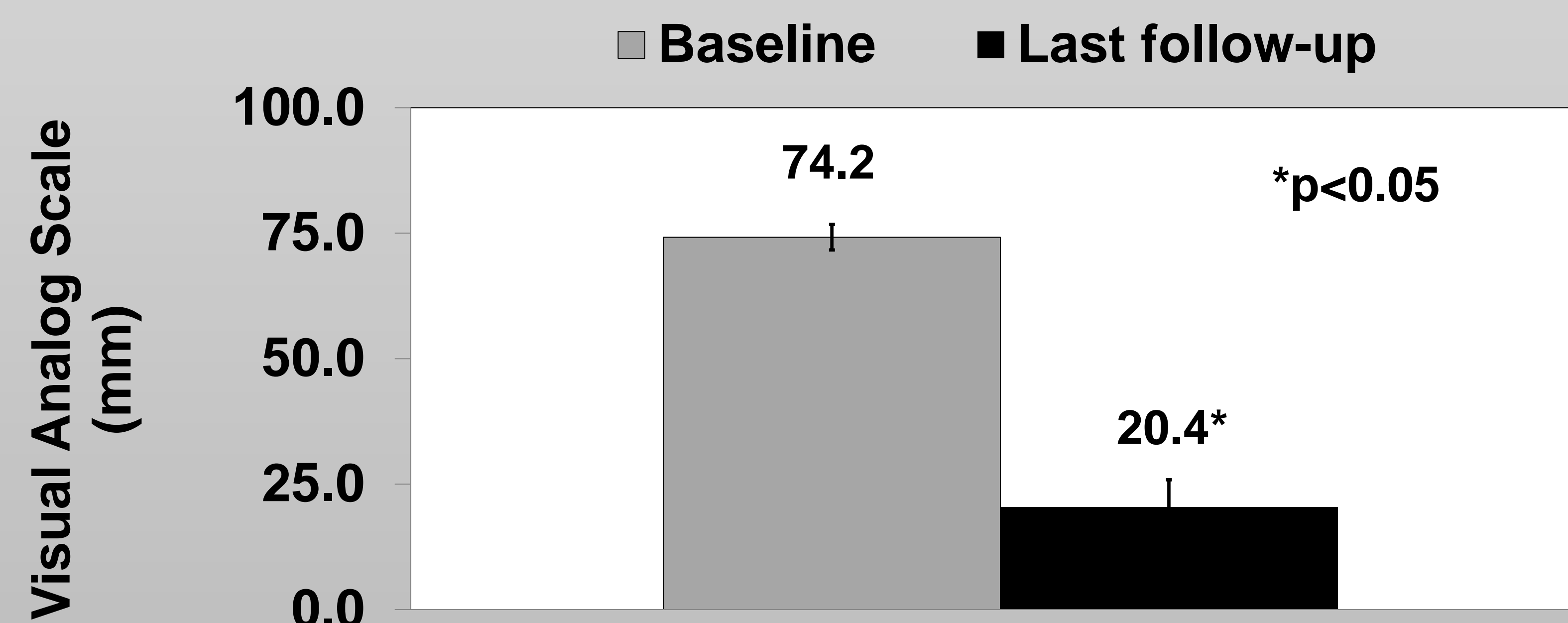
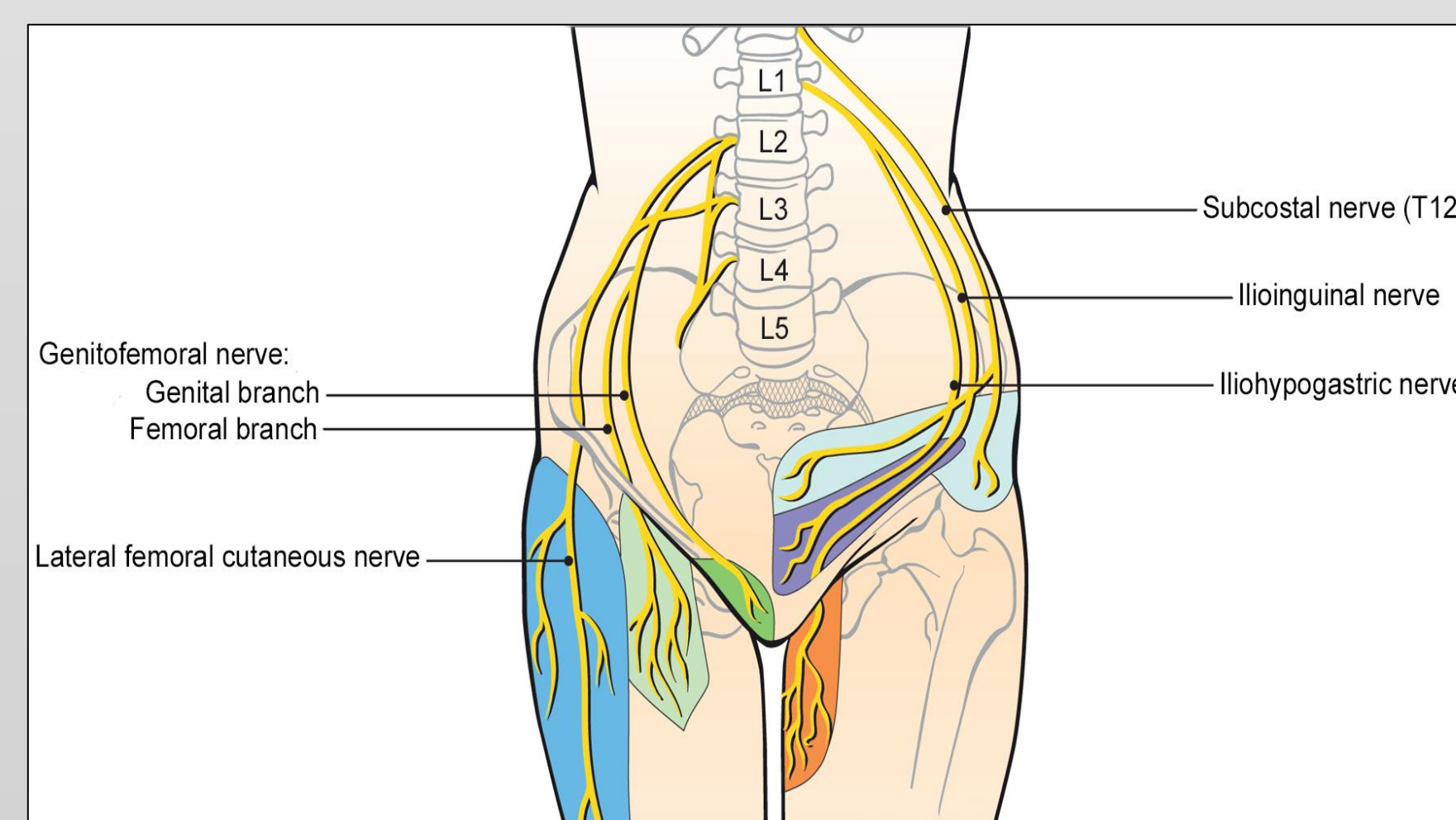
## METHODS

- Etiologies: Prior herniorrhaphy (9), prior femoral vascular access (3), reversed testicular torsion (1), Pfannenstiel incision (1), failed back surgery syndrome (1), abdominal cutaneous nerve entrapment syndrome (1) and unspecified peripheral nerve damage (2).
- Leads were placed between T12 and L4 DRGs and patients with a successful trial therapy (>50% improvement) received the fully implantable neuromodulation system.
- Pain scores were captured on a visual analog scale (VAS) at baseline and at follow up visits.

## RESULTS

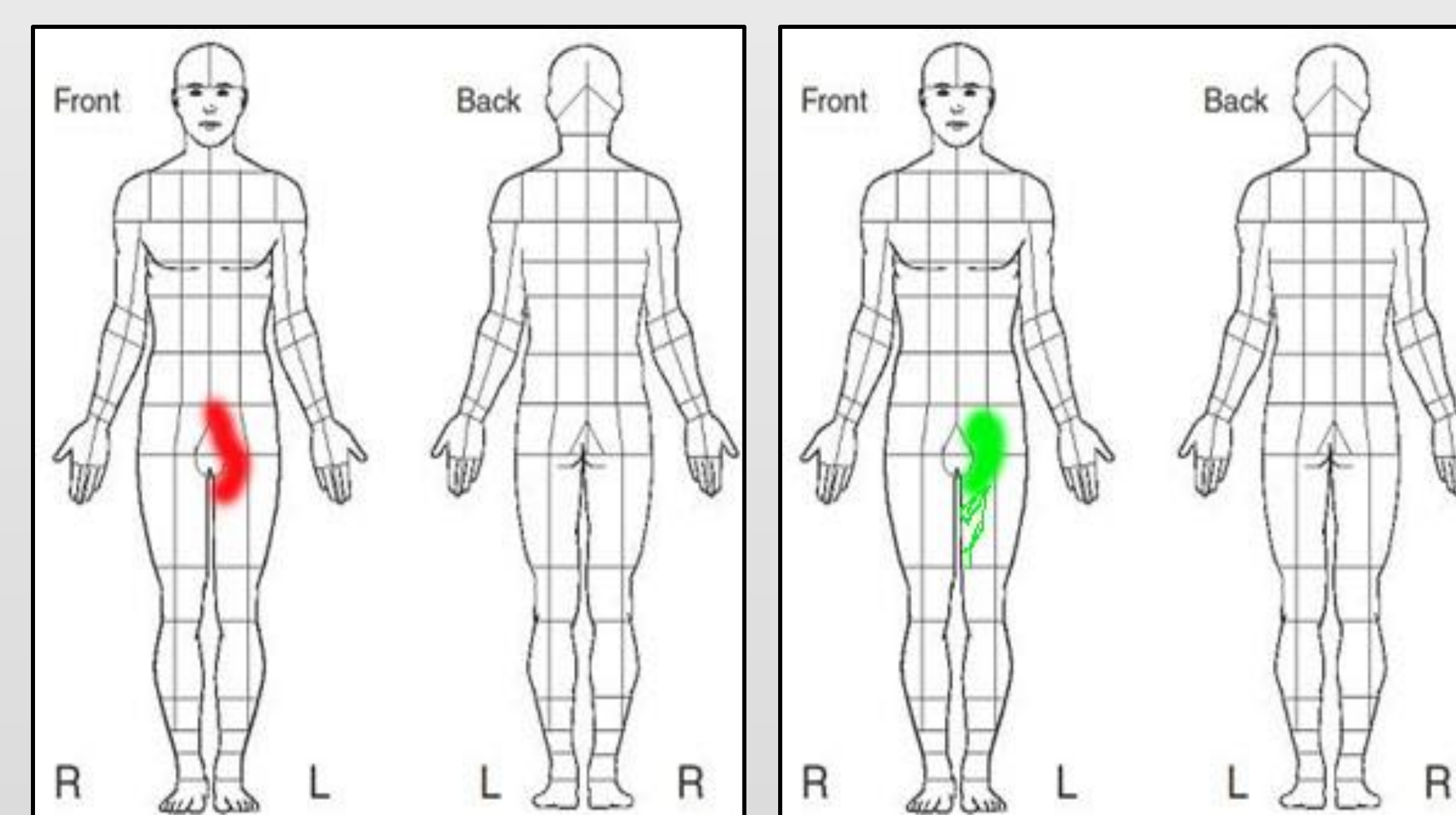
- **14/18** patients screened (**78%**) received fully implantable neurostimulators.
- Average follow-up period: 18.2±4.0 weeks
- **Median pain reduction: 84.1±7.6%**
- **78.6%** of patients experienced a >50% reduction of their pain

(Right) Major nerves innervating the groin area. Figure adapted from Loos MJ et al., Surgical management of inguinal neuralgia after a low transverse Pfannenstiel incision. Ann Surg. 2008 Nov; 248(5):880-5.



(Above) Pain VAS reported by patients.

### CASE HIGHLIGHT: Patient 8

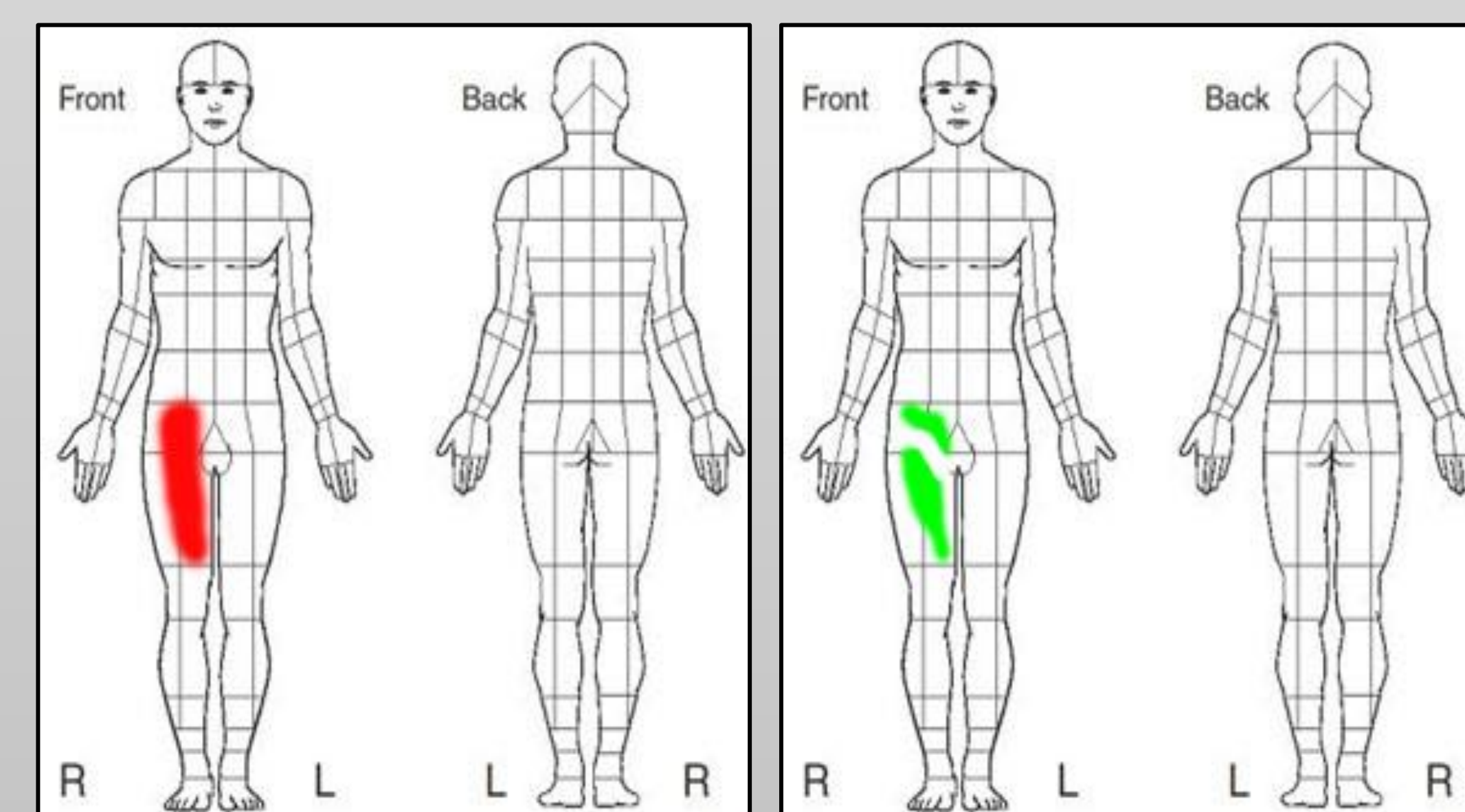


Pain map at baseline

Paresthesia map

- **Etiology:** Neuropathic groin pain for over 2 years after a surgical release of a torsed testicle.
- **Description:** Radiating pain to the abdomen producing persistent vagal symptoms of nausea (left, **VAS=86 mm**).
- **Prior treatment:** Traditional SCS treatment did not provide adequate pain relief (stimulation did not reach the target area).
- **SCS of DRG:** Pain relief with excellent pain-paresthesia overlap using a single L2 lead.
- **Follow-up:** At **24 weeks**, no paresthesia felt by patient with a **VAS of 8 mm**.

### CASE HIGHLIGHT: Patient 15



Pain map at baseline

Paresthesia map



- **Etiology:** Damage of the femoralis, ilioinguinal and genitofemoral nerves due to an aneurysm surgery.
- **Description:** Pain in the groin and the upper front legs (**VAS=82 mm**) (Left).
- **Prior treatment:** Traditional SCS treatment was unable to reach patient's pain area and also produced unacceptable postural effects.
- **SCS of DRG:** Delivered paresthesia to the groin and upper front leg using a T12 and an L2 lead, respectively (Middle). Note the pedicle between the 2<sup>nd</sup> and 3<sup>rd</sup> contact in L2 lead (Right).
- **Follow-up:** At **30 weeks**, the patient reported no pain in the groin (**VAS: 52 mm**).

## DISCUSSION

- SCS of the DRG offers a useful alternative for pain conditions that do not always respond optimally to traditional SCS.
- Stimulation provides excellent cross dermatomal paresthesia coverage despite the discrete pain areas some patients had.

## CONCLUSION

- SCS of the DRG for groin pain offers a technique with high responder rate to trial stimulation (~80%). Early findings suggest that this technique may be an effective treatment for chronic neuropathic pain conditions of the groin.