



# CT GUIDED LUMBAR SYMPATHECTOMY

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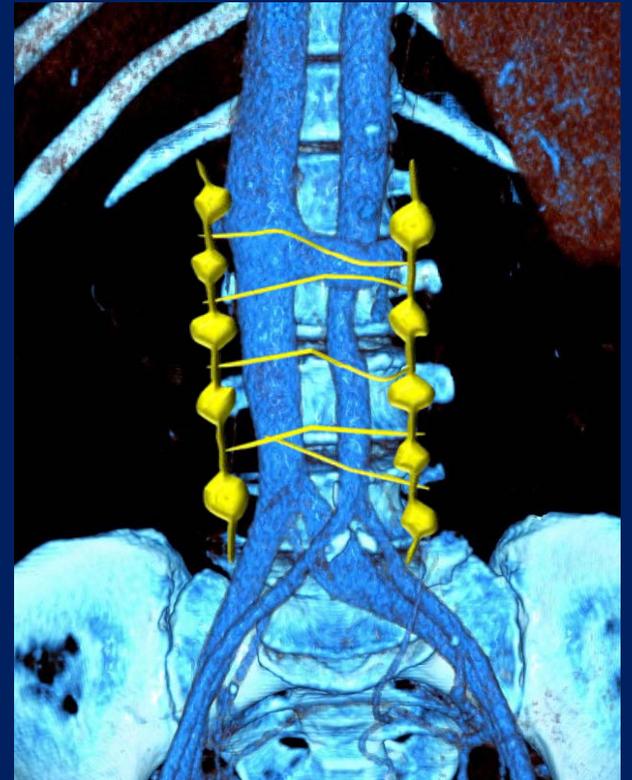
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## LUMBAR SYMPATHECTOMY (LS)

- Disruption of lumbar sympathetic chain
- Sympathectomy
  - Increase collateral perfusion (release of vascular tone)
  - Removes sympathetic pain component
- Surgical
  - Invasive; morbidity / mortality (4-7%)
  - Risks due to cardiovascular morbidities
- Image guidance – CT / fluoroscopic
  - Minimally invasive, less complications



## INDICATIONS

- Peripheral vascular disease
  - Not amenable to reconstruction
  - Symptoms – rest pain, arterial ulcer, gangrene
- Complex regional pain syndromes
- Plantar hyperhidrosis

### Contraindications (relative)

- Coagulation abnormalities
- Difficulty in pt positioning, aortic aneurysm, scoliosis



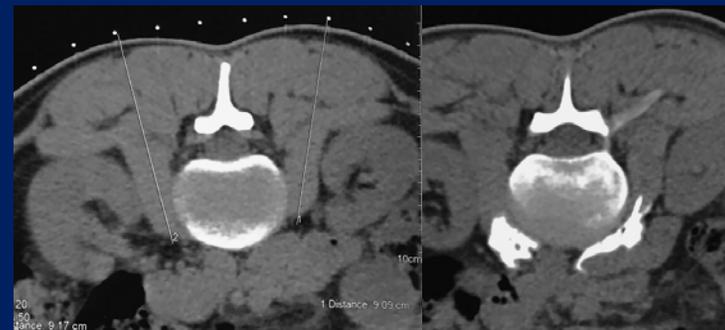
## CRITICAL LIMB ISCHEMIA

- CLI - chronic ischemic rest pain for >2 weeks, ulcers or gangrene
- 25% mortality – 1 year; 25% - major amputation
- Diagnosis of CLI - poor prognosis for life and limb
- Management
  - Revascularization
  - Aggressive lifestyle modification
  - Medications
  - Lumbar sympathectomy

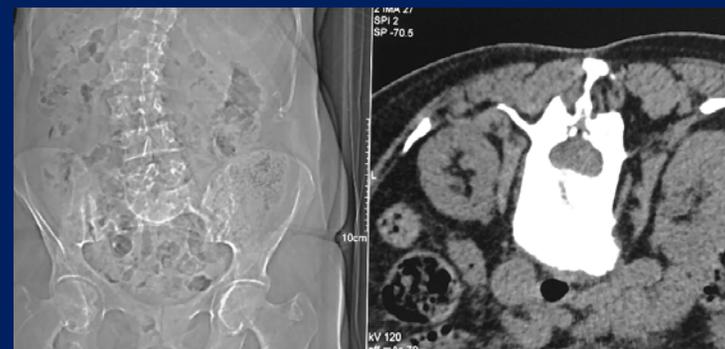


# GUIDANCE

- Fluoroscopy
  - 20 – 30% psoas injections; subarachnoid injection
  - Injury to genitofemoral N, bowel, IVC, aorta, lumbar plexus
  - Spine abnormalities – increases complications
- CT
  - minimally invasive, safe and effective
  - success rates 30 – 87%; complications < 1%.



Little RP fat



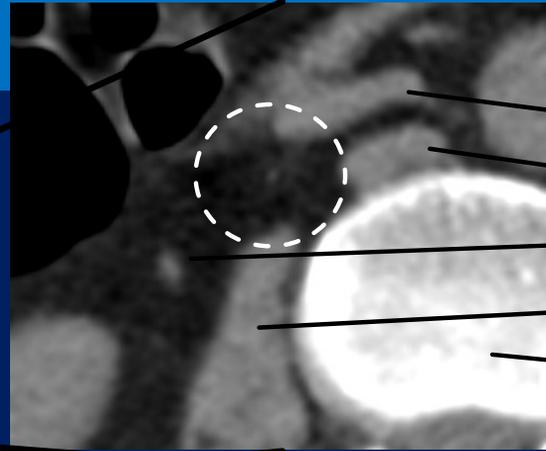
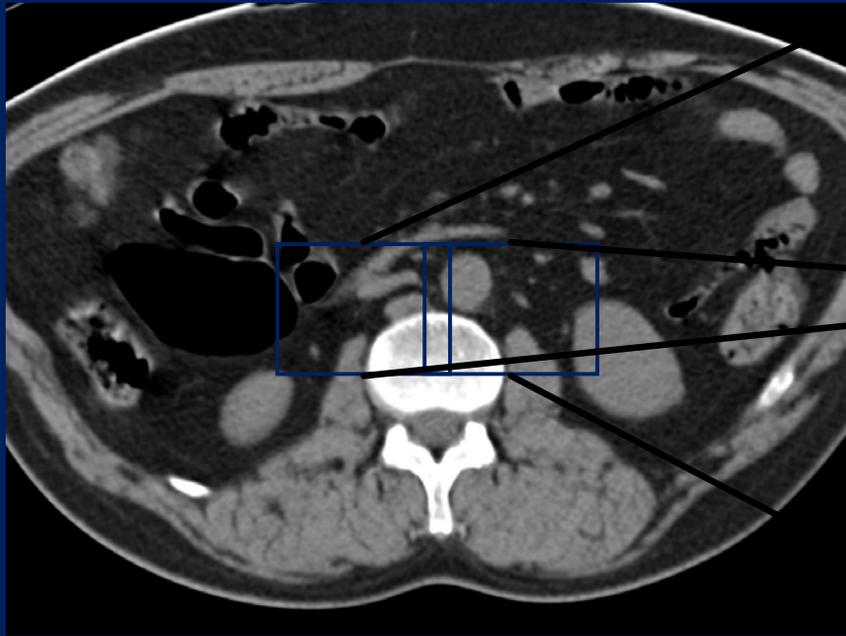
Scoliosis

## PRE-PROCEDURE

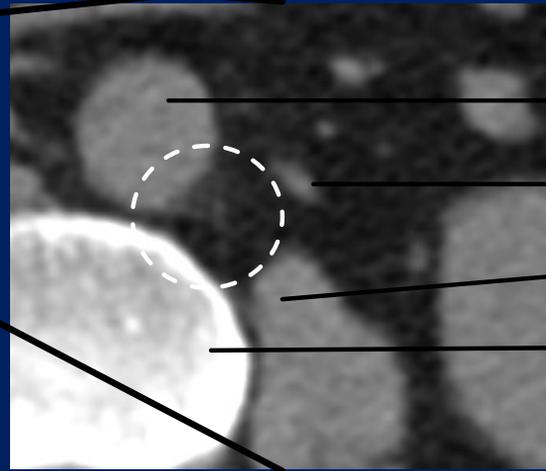
- Clinical evaluation
- CT or MR angiography
- Assess for revascularization
  
- Hardware
  - Chiba needle (22G), 2% lignocaine, absolute alcohol, iodinated contrast
- Patient position – prone / decubitus
- L3 level; unilateral / bilateral



# ANATOMY



- IVC
- Crus
- Ureter
- Psoas
- Vertebral body



- Aorta
- Ureter
- Psoas
- Vertebral body



## TECHNIQUE – BILATERAL



Preliminary scan



Grid marker



LA needles

## TECHNIQUE – BILATERAL



**Final needle position**



**Test injection  
LA + contrast**



**Alcohol injection**

## COMPLICATIONS & FOLLOW UP

### Complications

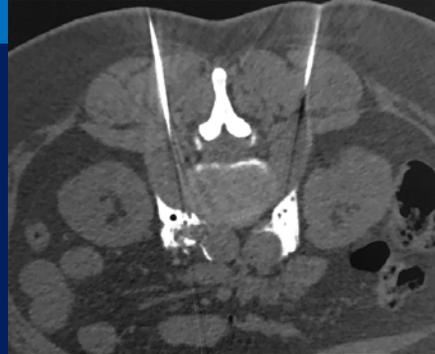
- < 1%
- Pain
- Neuralgia
- Ureteric injury – stricture, necrosis
- Infection – retroperitoneal abscess

### Follow up

Clinical evaluation

- Rest pain
- Claudication distance
- Ulcer healing
- Every 3 – 6 months
- ? Ultrasonography for KUB

# CASE I



<u>NPS</u>	
Pre CTLS	– 8
3 weeks	– 3
3 months	– 2
6 months	– 1
1 year	– 1



6 months

60-year-old male, smoker presenting with rest pain and ulcer for 8 months

## CASE 2



<u>NPS</u>	
Pre CTLS	- 6
3 weeks	- 1
3 months	- 1



33-year-old male, smoker presenting with rest pain and ulcer for 1 year

## CONCLUSION

- CTLS – simple & safe palliative technique
- L2 – L3 level better
- Bilateral procedures provide better results
- Complications - rare



THANK YOU

