

# A Modified Preoperative Spermatic Cord Block Predicts Success Following Microscopic Spermatic Cord Denervation Surgery for Chronic Scrotal Pain

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## Objective

To examine the effectiveness of a modified spermatic cord block technique at predicting success following a microscopic spermatic cord denervation procedure

## Background

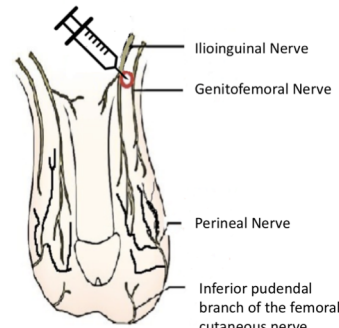
- Chronic Scrotal Pain: Permanent or intermittent pain in scrotal organs that interferes with daily activities for more than 3 months<sup>1</sup>
- Prevalence: up to 100,000 men per year<sup>2</sup>
- Risk Factors: post-vasectomy, previous inguinal hernia repair, scrotal/abdominal surgery<sup>2</sup>
- Conservative treatment is preferred but Microscopic Spermatic Cord Denervation (MSCD) is effective in refractory cases<sup>3,4</sup>
- Traditional spermatic cord block is predictive of success following MSCD<sup>5</sup>
- Traditional spermatic cord block may miss candidates for surgery:
  - Only effective in 70% of patients<sup>4</sup>
  - Genitofemoral nerve is missing in 1/3 of patients<sup>6</sup>
  - Sensory branch of the ilioinguinal nerve absent in 40% of patients<sup>6</sup>
  - Classical pattern of nerve distribution seen in only 20% of patients<sup>6</sup>
- Wallerian Degeneration/scrotal nerve fibers found in cremasteric muscle fibers, peri-vasal tissues/vasal sheath, and posterior cord lipomatous/perivessel tissues<sup>2,7</sup>
- These nerves are targets of the modified spermatic cord block and MSCD

## Methods

- Candidates for Modified Spermatic Cord Block: no anatomical explanation for pain, failed previous medical management
- Pain assessed w/ Numeric Pain Rating Scale (NPRS).
- Patients with  $\geq 50\%$  reduction in pain were offered MSCD.
- All patients undergoing MSCD (3/2018 to 8/2019) included
- Preoperative, post-block, and post-surgical pain assessed
- Laterality, age, prior groin surgery, and post-block pain free period recorded
- Multivariate linear regression used to determine predictors of success.

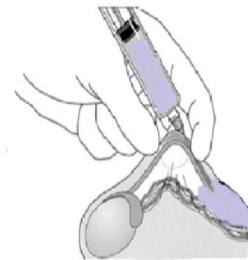
## Technique

### Traditional Spermatic Cord Block



Injection 1cm inferior and 1cm medial to the pubic tubercle<sup>8</sup>

### Modified Spermatic Cord Block



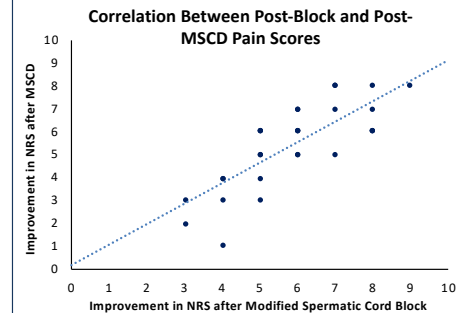
Injection of 10mL 0.25% Marcaine circumferentially around the vas deferens and an additional 10mL anterior/medial to the external ring

## Results

		Multivariate Regression	
		Standardized Coefficient	p Value
Total Patients	30		
Age	47 (20-74)	0.118	0.337
Laterality			
Left	19		
Right	11		
Previous Surgery			
Vasectomy	7	0.066	0.624
Hernioplasty	9	-0.067	0.598
Baseline NPRS	7 (5-9)	-0.220	0.240
Post-Block NPRS Improvement	6 (3-9)	0.914	<0.001*
Block Effect Time (hrs)	5.6 (1.5-24)	0.132	0.344
Post-MSCD NPRS Improvement	5 (1-8)		
Post-MSCD % Improvement			
< 50%	3		
50%-69%	6		
70%-99%	11		
100%	10		

- 30 consecutive patients were included over the study time period
- 16 patients had a previous vasectomy or hernioplasty
- All patients saw some improvement following the surgery; 70% saw a  $\geq 70\%$  pain reduction
- On multivariate regression analysis only degree of pain improvement following the block was predictive for degree of pain improvement post-op
- Duration of improvement after block, previous surgery, age and presenting pain severity were not predictors of success

## Results



## Conclusions

- A preoperative modified spermatic cord block is an independent predictor of post-MSCD pain improvement
- No other factors including etiology or duration of block effect time were predictors of success
- A trial comparing the modified spermatic cord block to traditional block as a method of selecting surgical candidates for MSCD is warranted

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