

# Restoration of Sensation to the Penis in Cismen and Clitoris in Ciswomen Who Sustain Injury to the Dorsal Branch of the Pudendal Nerve

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## Introduction

- Loss of penile sensation, related to cycling or direct injury to the perineum or pelvis in cismen, and heightened clitoral sensation, related to persistent genital arousal disorder (PGAD) in ciswomen, remain clinical problems for which a surgical approach to the pudendal nerve may offer a solution of relief.

## Objectives

- The purpose of this report is to review our experience with recovery of sensation in cismen and ciswomen after decompression of the dorsal branch of the pudendal nerve.

## Materials and Methods

### Study design

- A retrospective chart review was carried out from 2014 through 2018, of cismen and ciswomen who have had decompression of the dorsal branch of the pudendal nerve.

### Study population

#### Inclusion criteria

- Age  $\geq 18$  years
- Had loss of penile sensation or development of a painful penis, or PGAD.

All patients were assessed for demographic and clinical differences. Comparisons between pre-operative and post-operative groups were performed.

### Outcomes

- Primary outcome measures for cismen were patient reported changes in penile symptoms (erection, ejaculation, ejaculatory pain, erogenous sensation, numbness, pain) and ciswomen were resolution of PGAD symptoms (arousal and pain).
- Complete relief (CR) was defined as a resolution of penile or PGAD symptoms.

## Demographics of cismen and ciswomen

	Value (%)
Sample size (n)	16
Mean age $\pm$ SD, yr	45 $\pm$ 15
Mean BMI $\pm$ SD, kg/m <sup>2</sup>	26.5 $\pm$ 6
Sex	
Female	8 (50)
Male	8 (50)
Race (Caucasian)	15 (94)
Ethnicity (Non-Hispanic/non-Latino)	14 (88)
Smoking status	
Current smoker	1 (6)
Former smoker	2 (13)
Alcohol use	8 (50)
Recreational drug use	1 (6)
Marital status	
Single	4 (25)
Married	7 (44)
Divorced	3 (19)
Mean number of pelvic surgeries $\pm$ SD	2 $\pm$ 1
Comorbidities	
Depression	5 (31)
Anxiety	5 (31)
Migraine	4 (25)
Hypertension	3 (19)
Diabetes	2 (13)
Interstitial cystitis	2 (13)
Mean number of medications to treat symptoms $\pm$ SD	3 $\pm$ 2
Mechanism of injury	
Fall	5 (31)
Bicycle riding	4 (25)
Prostatectomy	2 (13)
Birth injury	2 (13)
Mean follow-up, weeks	63 $\pm$ 38

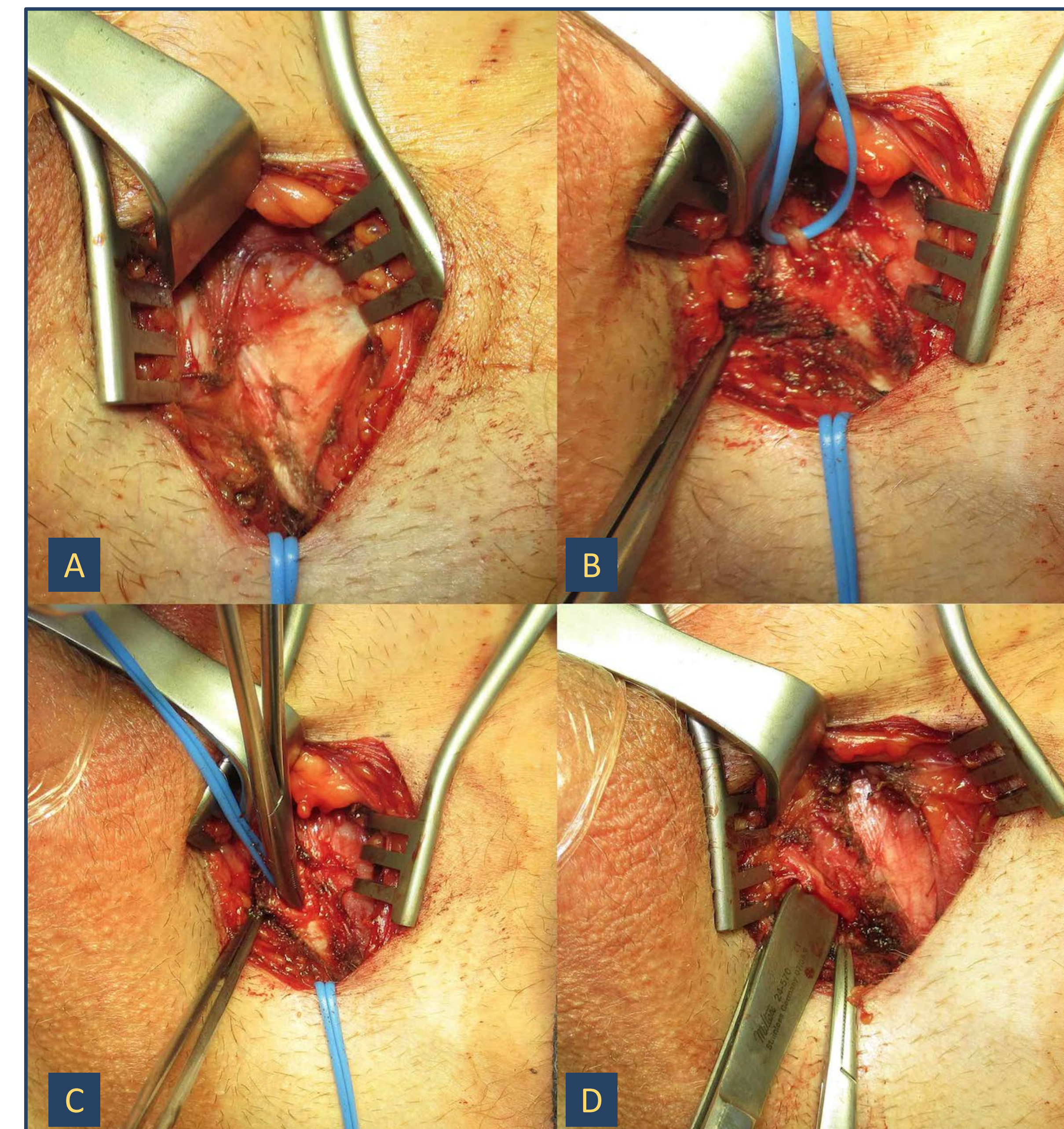
- Eight cismen and 8 ciswomen were included in the study (n=16), with a mean age of 45 $\pm$ 15 years and follow-up of 63 $\pm$ 38 weeks.

## Results

### Ciswomen outcomes

	Mean $\pm$ SD	Patients (%)
<b>Pre-surgical</b>		8 (100)
Symptoms		
Arousal	---	8 (100)
Numbness	---	0 (0)
Pain	---	7 (88)
Ability to have intercourse	---	1 (12)
<b>Post-surgical</b>		
Symptom improvement		
Arousal		
PR	---	1 (12)
CR	---	7 (88)
Numbness	---	0 (0)
Pain		
PR	---	1 (14)
CR	---	6 (86)
Complications	---	0 (0)
Ability to have intercourse	---	6 (75)
Time to improvement in symptoms (weeks)	11 $\pm$ 11	8 (100)
Symptom recurrence	---	1 (12)

### Figure. Cisman intra-operative sequence



### Cismen outcomes

	Mean (SD)	Patients (%)
<b>Pre-surgical</b>		8 (100)
Symptoms		
Erectile dysfunction	---	3 (42)
Ejaculatory dysfunction	---	2 (29)
Ejaculatory pain	---	5 (63)
Erogenous sensation	---	1 (14)
Pain	---	6 (86)
Numbness	---	4 (50)
<b>Post-surgical</b>		
Symptom improvement		
Erectile dysfunction	---	2 (67)
Ejaculatory dysfunction	---	1 (50)
Ejaculatory pain		
PR		2 (40)
CR		3 (60)
Erogenous sensation		
PR		1 (14)
CR		6 (86)
Pain		
PR		3 (50)
CR		3 (50)
Numbness		
PR		3(75)
CR		1(25)
Complications	---	0 (0)
Mean time to improvement in symptoms $\pm$ SD, weeks	6 (4)	7 (88)
Symptom recurrence	---	0 (0)

- Figure.** A) Incision site located next to the scrotum. The blue vessel loop identifies the perineal branches of the pudendal nerve which were located as the first step in the surgery in the ischio-rectal fossa. The ischio-cavernosus muscle has been dissected from the inferior pubic ramus, and is retracted with the corpora cavernosa. The small yellow appearance of the dorsal nerve to the penis is at the top of the dissection, and is encircled with a blue loop in B). The roof of the inferior pubic ramus canal is dissected and opened in C). The completed neurolysis is in D) with the handle of the scalpel beneath the nerve. Note fascicles distally and inflammation about the nerve proximally.

## Conclusions

- Bilateral neurolysis of the dorsal nerve to the penis/clitoris can successfully relieve pain and restore sensation, in both cismen and ciswomen sustaining an injury along the inferior pubic ramus.