

The Anatomical Distribution of the Pudendal Nerve Block Injection: A Cadaveric Study

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BACKGROUND

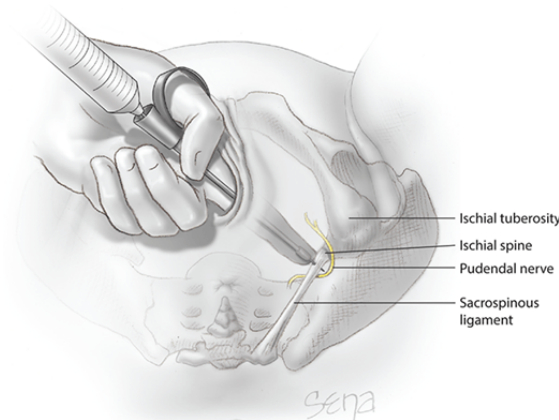
- The pudendal nerve block is widely used for pain relief in various clinical situations, such as, chronic pelvic pain, labor pain, hysteroscopy, etc.
- Procedure consists of palpating the ischial spine through the vaginal wall, inserting a needle against the vaginal mucosa near the ischial spine and injecting local anesthetic into the region
- There is currently no standardized protocol for procedure, therefore the location and number of injections varies significantly between providers

OBJECTIVES

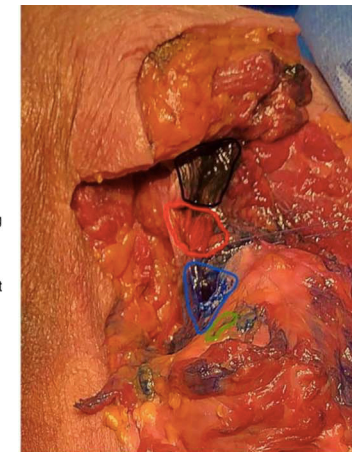
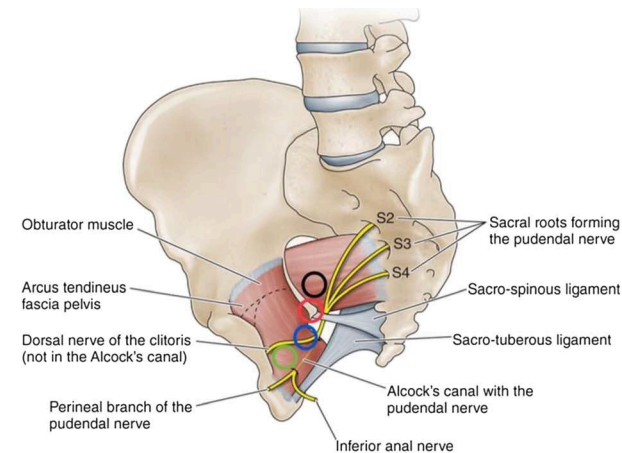
To determine the accuracy of commonly used pudendal nerve block injection sites

METHODS

- Injected 4 distinct sites based on the trajectory of the pudendal nerve in 10 hemipelvises:
- 1 cm proximal to ischial spine (black dye), at the ischial spine (red dye), 1 cm distal to ischial spine (blue dye), and 2 cm lateral and 2 cm distal to ischial spine (green dye)



Source: Jennifer R. Butler, Laura E. Fitzmaurice, Alpesh N. Amin, Christine M. Kim. *OB/GYN Hospital Medicine: Principles and Practice*. Copyright © McGraw-Hill Education. All rights reserved.



RESULTS

- Injection at the ischial spine resulted in a distribution with closest proximity to the pudendal nerve (avg 3.0 ± 0.95 mm)

TABLE 1. Distance (mm) From the Center of the Injections to the Pudendal Nerve

Cadaver	Side	Black Dye	Red Dye	Blue Dye	Green Dye
1	Left	1.5	4	0	2
	Right	0	4	5	5
2	Left	10	1	0	0
	Right	4	2	4	7
3	Left	6	6	0	0
	Right	0	0	4	1.5
4	Left	0	6	9	3
	Right	0	0	0	3
5	Left	0	0	14	14
	Right	10	7	0	5
Mean ± SEM		3.15 ± 1.00 mm	3.0 ± 0.95 mm	3.6 ± 1.14 mm	4.05 ± 1.28 mm

DISCUSSION

- All injected dyes were close in proximity to some point of the pudendal nerve indicating accuracy
- There was a wide variation in the distribution of the injected dyes indicating that the current technique lacks precision
- The most effective injection location is at the ischial spine with 1-2 injections being sufficient
- Further studies are required to evaluate effectiveness of injection sites in live patients

REFERENCES

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 Gupta P, Ehlert M, Sirls LT, et al. Transvaginal pelvic floor muscle injection technique: a cadaver study. *Female Pelvic Med Reconstr Surg* 2017;23(1):61-63.