

# Pudendal nerve block as a countermeasure to postoperative chronic pain after removal of Bartholin's cyst

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## Abstract

*Chronic pain syndrome is a serious postoperative complication. In our practice, we have discovered a certain percent of neuralgia of the pudendal nerve in vaginal surgery – more precisely in Bartholin's cyst removal. As a highly efficient countermeasure, we propose a nerve block of the pudendal nerve.*

*We have performed a retrospective study of patients who underwent a Bartholin's cyst removal in the span of 1 year from January 1, 2019 to December 31, 2019. All of the patients included were diagnosed with chronic pain in the area innervated from the pudendal nerve. In all of the patients, a pudendal nerve block with local anesthetic was performed under the guidance of ultrasound.*

*A total of 11 patients were included in the study. There was a time interval between the Bartholin's cyst removal surgery and the performance of the nerve block. All patients expressed moderate pain before the procedure. In only 1 case a repeat of the nerve block was imposed. There were no short- or long-term complications of any kind. The patients have been followed up for the duration of 1 year and 100% have been reported.*

*Accurate and precise pain assessment is vital for the diagnosing and subsequent treatment of the chronic pain syndrome. There are many ways of treating the syndrome, both conventional (non-steroidal anti-inflammatory drugs, opioids, topical analgesics, and adjuvant analgesics) and unconventional.*

*Chronic pain syndrome is an important multilayered problem that requires individual approach. The nerve block of the pudendal nerve is a highly efficient method of coping with that disease.*

**Key words:** pudendal nerve block, chronic pain, Bartholin's cyst, surgery

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## Introduction

The nerve block is a highly efficient and often underrated technique that has both operative and post-operative advantages in certain cases. It is heavily used in thoracic and breast surgery and has a great perspective in urology. It is a very potent method in vaginal surgery [1] and specifically in Bartholin's cyst removal [2–4].

In cases of the latter phantom pain is often observed. Phantom pain is the phenomenon of feeling pain in a part of the body that has been removed. In some cases, phantom pain is exhibited for a week, in

others for months, and chronic pain syndrome is developed. In our study, we will introduce the pudendal nerve block as an effective solution for chronic pain syndrome after Bartholin's cyst removal.

## Material and methods

A retrospective study of all cases of pudendal nerve block after Bartholin's cyst removal in Saint Marina Hospital, Plevan, Bulgaria between January 1, 2019, and December 31, 2019 was performed. Clinical data were collected from the patients' medical records. Eleven patients were identified as suitable for the study. None of the patients included displayed symptoms of chronic disease of any kind that could somehow correlate with the chronic pain syndrome, nor had disclosed other sources of chronic pain except the postoperative vulvar pain.

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The pudendal block itself is performed via visualizing the sacrospinous ligament (SSL) and the sacrotuberous ligament (STL) and then inserting a needle in a medial-to-lateral direction. After the needle penetrates the STL, 10 ml solution of 1 ampule long term corticosteroid and 50 mg ropivacaine is injected.

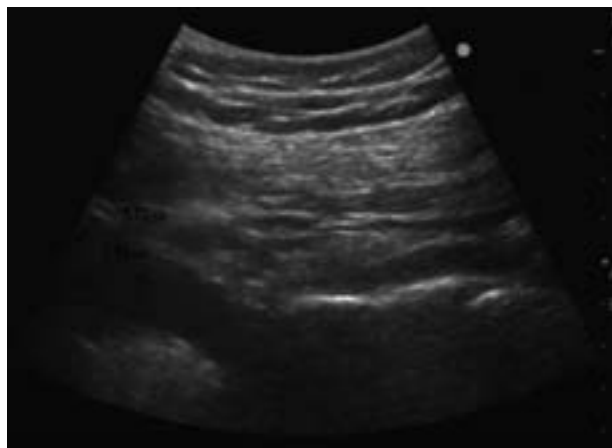


Figure 1. Ultrasound image

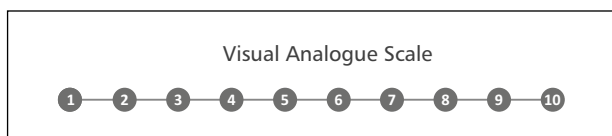


Figure 2. Visual analogue scale for vulvar pain

Ultrasound image is presented on Figure 1.

The 1-year follow-up reported the results obtained from verbal visual analogue scale (VAS) assessment for vulvar pain as Bartholin’s cyst removal is considered a vulvar surgical intervention (Fig. 2). Follow-up visits were performed at the beginning and 3–5 months after treatment.

## Results

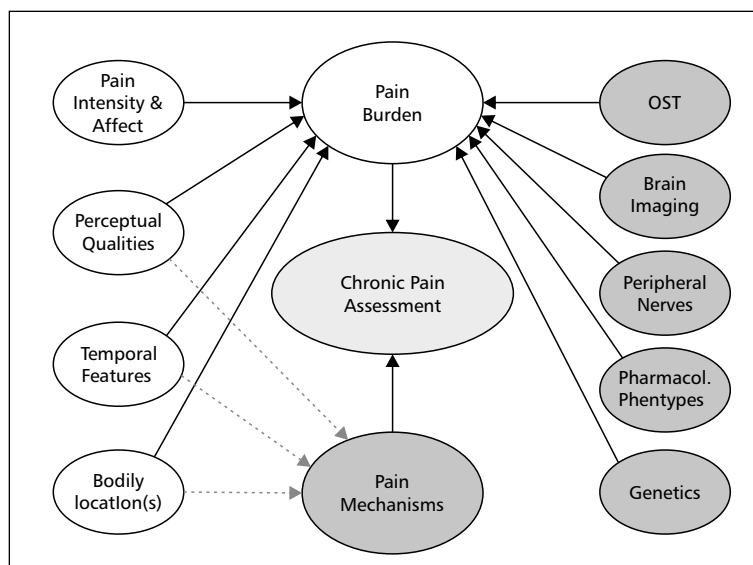
We retrospectively collected the data of 11 patients that exhibited chronic pain after Bartholin’s cyst removal. Nine patients had developed unilateral (6 left and 3 right) and 2 patients had developed bilateral Bartholin’s cyst (Table 1). All 11 patients experienced pain levels 5–7 according to VAS before the nerve block and after the cyst removal. There was roughly a 4-month interval between the surgical intervention and the nerve block.

The median age of the patients enrolled was 31.7 (18–50).

The patients previously diagnosed with bilateral Bartholin’s cyst underwent a bilateral pudendal block. In all 9 patients with unilateral Bartholin’s cyst unilateral pudendal block was performed. None of them experienced complications of any kind. In 2 the block was ineffective and the procedure was repeated 5 days after. The pain was assessed 0 according to VAS. No symptoms are exhibited up to a year after the procedure (Table 1).

Table 1. Patients’ characteristics

No	Age	Diagnosis	Period after surgery (months)	VAS assessment – starting levels	VAS assessment – 1st day after treatment	VAS assessment – 3–6 months
1	18	Right unilateral Bartholin’s cyst	3	5	5	0
2	20	Left unilateral Bartholin’s cyst	4	6	0	0
3	21	Right unilateral Bartholin’s cyst	5	5	0	0
4	28	Left unilateral Bartholin’s cyst	5	7	0	0
5	42	Left unilateral Bartholin’s cyst	6	7	0	0
6	43	Bilateral Bartholin’s cyst	6	6	0	0
7	50	Bilateral Bartholin’s cyst	3	5	0	0
8	19	Left unilateral Bartholin’s cyst	4	7	0	0
9	33	Right unilateral Bartholin’s cyst	5	7	0	0
12	44	Left unilateral Bartholin’s cyst	6	5	0	0
11	36	Left unilateral Bartholin’s cyst	5	6	0	0



**Figure 3.** Chronic pain assessment [neural injury and local anaesthetic toxicity are common to all regional anaesthesia techniques, and individual techniques are associated with specific complications. All potential candidates for regional anaesthesia should be thoroughly evaluated and informed of potential complications. If there is significant risk of injury, then these techniques should be avoided. Central neural blockade (CNB)]

## Discussion

Accurate pain assessment is critical to pain classification. It includes symptoms and signs of pain disorder. The assessment of pain allows the medical personnel to monitor and treat the pain in the most adequate way. For precise evaluation of the pain levels and the impact pain itself has on patients, it is vital to figure the pain mechanisms and the pain burden. Both are estimated by a number of factors that are in some cases overlapped (Fig. 3).

In order to assess the pain level, different scales are used such as VAS (visual analog scale), NRS (numerical rating scale), and other often used verbal expressions [5].

As pain is highly subjective, self-assessment of the patients is considered the gold standard.

Persisting pain after healing or absence of tissue is termed chronic pain. According to the International Association for the Study of Pain (IASP), the term chronic pain can refer to any pain lasting at least 3 months.

There are different approaches to treating chronic pain. The first is via analgesic medications. The first step of the "analgesic ladder" is non-steroidal anti-inflammatory drugs. It includes drugs such as paracetamol that reduce inflammation and provide pain relief by inhibiting COX-1 and COX-2 cyclooxygenase enzymes. COX-1 acts on a general level being constituent to most tissues of the body and producing prostaglandins and thromboxanes, while COX-2 is mainly induced in inflammatory cells in response to damage and is mainly responsible for the local inflammation.

The second step is to add opioids that mimic the effect of naturally occurring pain and therefore reduce the secretion of endorphins. However, usage of codeine for extended periods of time could lead to cardiovascular events in elderly people and possibly death. Other side effects may include respiratory depression, nausea, constipation sedation, and different hormonal effects.

Another conventional option are topical analgesics. They are absorbed through the skin and studies show that there is a positive effect in all non-cancer patients. Lidocaine for example is the preferred method in local pain relief when applied as a patch. Also, contrary to orally-applied opioids, topical analgesics rarely exhibit side effects.

Adjuvants and adjuvant analgesics are two terms that are often conflated. They are represented by different antidepressants and antiepileptics that are effective pain relievers in certain situations but are more often applied as a counter to the pain syndrome.

Chronic pain cannot always be treated effectively in the conventional biomedical sense as it is a multi-layer syndrome that includes persistent physical pain, emotional disability, and social withdrawal symptoms. Ergo, patients suffering from chronic pain are to undergo personal therapy that targets both the physical and mental symptoms. A simple and effective method is the interventional approach. A highly recommended method is the nerve block. As explained in our study, the nerve block provides full long-term pain relief vaginal surgery. The potential side effects mimic the ones of

loco-regional anesthesia such as contamination and possibly sepsis, peripheral nerve damage, and cardiac arrest due to intravascular injection of the local anesthetic [6]. We have encountered no side effects in our study.

Other interventional methods may include spinal cord stimulation or deep brain stimulation. However, both of those methods have considerably higher risks and do not present the same level of pain management.

Other methods of treating chronic pain syndrome include biopsychological treatment, physiotherapy and clinical psychology [7].

## Conclusion

Pain is a multidimensional problem that requires individual approach in every patient. The pudendal nerve block is a simple and effective low-risk technique that provides high pain management and no side effects. However, individual approach to patients with chronic pain syndrome must always be taken in consideration and applied whenever possible.

The pudendal nerve block as a countermeasure to chronic pain syndrome after Bartholin's cyst removal is an innovative and effective solution.

## Ethical approval

There is no conflict of interest and all patients included in the study gave their consent for publishing information from their medical records.

## References:

1. Khandwala S, Cruff J. A Novel Method of Pudendal Nerve Blockade for Managing Pain Following Vaginal Reconstructive Surgery. *Journal of Gynecologic Surgery*. 2020; 36(5): 257–261, doi: [10.1089/gyn.2019.0136](https://doi.org/10.1089/gyn.2019.0136).
2. Bendtsen TF, Parras T, Moriggl B, et al. Ultrasound-Guided Pudendal Nerve Block at the Entrance of the Pudendal (Alcock) Canal: Description of Anatomy and Clinical Technique. *Reg Anesth Pain Med*. 2016; 41(2): 140–145, doi: [10.1097/AAP.0000000000000355](https://doi.org/10.1097/AAP.0000000000000355), indexed in Pubmed: 26780419.
3. Dickson E, Higgins P, Sehgal R, et al. Role of nerve block as a diagnostic tool in pudendal nerve entrapment. *ANZ J Surg*. 2019; 89(6): 695–699, doi: [10.1111/ans.15275](https://doi.org/10.1111/ans.15275), indexed in Pubmed: 31090184.
4. Anderson GV. The forgotten block. *J Emerg Med*. 1990; 8(4): 505–506, doi: [10.1016/0736-4679\(90\)90191-w](https://doi.org/10.1016/0736-4679(90)90191-w), indexed in Pubmed: 2278571.
5. Fillingim RB, Loeser JD, Baron R, et al. Assessment of Chronic Pain: Domains, Methods, and Mechanisms. *J Pain*. 2016; 17(9 Suppl): T10–T20, doi: [10.1016/j.jpain.2015.08.010](https://doi.org/10.1016/j.jpain.2015.08.010), indexed in Pubmed: 27586827.
6. Faccenda KA, Finucane BT. Complications of regional anaesthesia Incidence and prevention. *Drug Saf*. 2001; 24(6): 413–442, doi: [10.2165/00002018-200124060-00002](https://doi.org/10.2165/00002018-200124060-00002), indexed in Pubmed: 11368250.
7. Hylands-White N, Duarte RV, Raphael JH. An overview of treatment approaches for chronic pain management. *Rheumatol Int*. 2017; 37(1): 29–42, doi: [10.1007/s00296-016-3481-8](https://doi.org/10.1007/s00296-016-3481-8), indexed in Pubmed: 27107994.