



ВПЛИВ ПЕКТОРАЛЬНОЇ БЛОКАДИ (PECS BLOCK) НА РОЗВИТОК ПОСТМАСТЕКТОМІЧНОГО БОЛЬОВОГО СИНДРОМУ

Марцінів В.В.

Британо-український симпозіум м.Київ, 2019



В.В. Марцінів. 11-й Британо-Український Симпозіум. Київ, 2019



Постмастектомічний больовий синдром – біль по медіальній поверхні руки, передній поверхні грудної клітки, в післяопераційному рубці, аксілярній ямці, що виник іпсилатерально після хірургічного втручання на молочній залозі і триває більше трьох місяців. (*International Association of the Study of Pain*)

Постмастектомічний больовий синдром – біль в зоні операції або іпсилатеральній руці, що виникає як мінімум 4 рази на тиждень і за інтенсивністю не менше 3 бали в середньому за ЦРШ від 0 до 10. (*OJ Vilholm, S Cold, L Rasmussen, SH Sindrup 2008*)



Prevalence of and factors associated with persistent pain following breast cancer surgery.

Gärtner R¹, Jensen MB, Nielsen J, Ewertz M, Kroman N, Kehlet H.

Author information

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Частота винекнення ПМБС- 47%
із них біль середній та сильний - 52%

respect to age, surgical technique, chemotherapy, and radiotherapy.

RESULTS: By June 2008, 3253 of 3754 eligible women (87%) returned the questionnaire. A total of 1543 patients (47%) reported pain, of whom 201 (13%) had severe pain, 595 (39%) had moderate pain, and 733 (48%) had light pain. Factors associated with chronic pain included young age (18-39 years: OR, 3.62; 95% confidence interval [CI], 2.25-5.82; $P < .001$) and adjuvant radiotherapy (OR, 1.50; 95% CI, 1.08-2.07; $P = .03$), but not chemotherapy (OR, 1.01; 95% CI, 0.85-1.21; $P = .91$). Axillary lymph node dissection (ALND) was associated with increased likelihood of pain (OR, 1.77; 95% CI, 1.43-2.19; $P < .001$) compared with sentinel lymph node dissection. Risk of sensory disturbances was associated with young age (18-39 years: OR, 5.00; 95% CI, 2.87-8.69; $P < .001$) and ALND (OR, 4.97; 95% CI, 3.92-6.30; $P < .001$). Pain complaints from other parts of the body were associated with increased risk of pain in the surgical area ($P < .001$). A total of 306 patients (20%) with pain had contacted a physician within the prior 3 months for pain complaints in the surgical area.

Review Staging of women with breast cancer after introduction of sentinel nc [Dan Med J. 2012]

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Cited by 92 PubMed Central articles

Ultrasound-Guided Dry Needling As a Treatment For Postmastectomy [Indian J Palliat Care. 2019]



Prevalence of and factors associated with persistent pain following breast cancer surgery.

Gärtner R¹, Jensen MB, Nielsen J, Ewertz M, Kroman N, Kehlet H.

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Частота винекнення ПМБС - 47%
із них біль середній та сильний - 52%

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Pain Med. 2019 Mar 19. pii: pnz049. doi: 10.1093/pm/pnz049. [Epub ahead of print]

The Prevalence, Impact, and Risk Factors for Persistent Pain After Breast Cancer Surgery in a New Zealand Population.

Chiang DLC^{1,2}, Rice DA^{2,3}, Helsby NA⁴, Somogyi AA⁵, Kluger MT^{1,2}.

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Частота винекнення ПМБС - 55%
із них біль середній та сильний - 46%

patients with moderate to severe pain ($P < 0.001$). Non-European ethnicity (odds ratio [OR] = 5.02, 95% confidence interval [CI] = 2.05-12.25, $P < 0.001$), reconstruction surgery (OR = 4.10, 95% CI = 1.30-13.00, $P = 0.02$), and axillary node dissection (OR = 4.33, 95% CI = 1.19-15.73, $P < 0.03$) were identified as risk factors for moderate to severe pain by multivariate logistic regression analysis.

CONCLUSIONS: Moderate to severe persistent pain after breast cancer surgery affects many New Zealand patients, and is associated with impaired daily life activities, physical disability, and psychological distress. Large numbers of patients undergo breast cancer surgery annually. This study emphasizes the importance of identification and management of these patients perioperatively.

Review Conservative interventions for preventing ϵ [Cochrane Database Syst Rev. 2015]

[See reviews...](#)

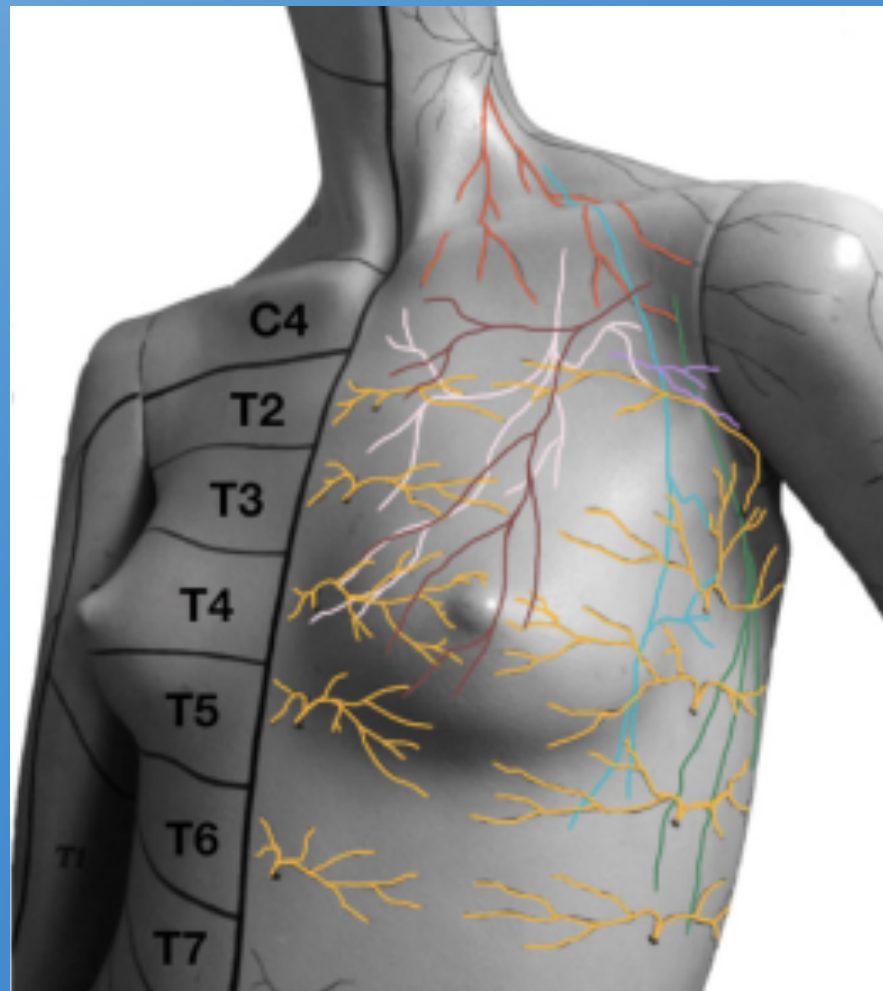
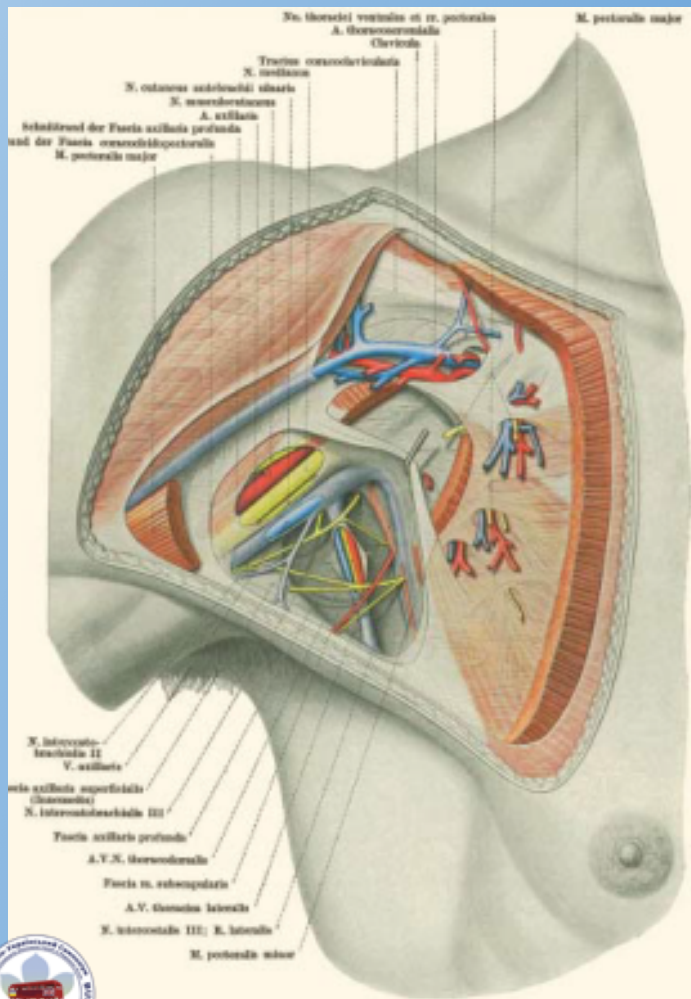
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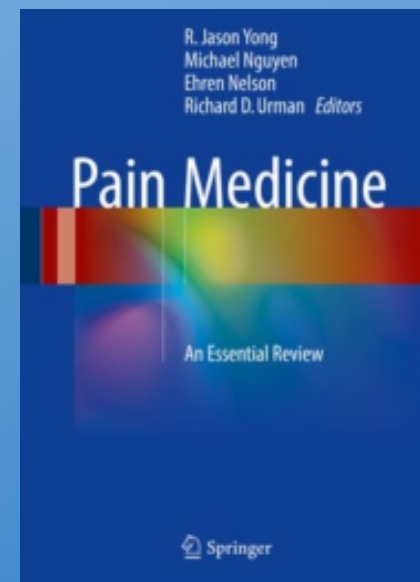
Причини розвитку – чітко невідомі

Пошкодження нервів: **міжреберно-плечових** та ***n. pectoralis lateralis*** та ***medialis***, ***n. thoracicus longus*** та ***n. thoracodorsalis***, бокових гілок **міжреберних нервів**



Фактори ризику

- аксілярна лімфодисекція
- молодий вік
- ад'ювантна променева терапія
- ад'ювантна хіміотерапія
- тривога, депресія перед операцією
- незаміжний статус



REVIEW

Current issues in postoperative pain management

Narinder Rawal

allowed to adjust PCA in 38% of hospitals, epidurals in 57% of hospitals and perineural catheters in 79% of hospitals.⁷

Certain categories of patients are at a greater risk of being undertreated including the pregnant, the paediatric, the elderly, the opioid tolerant and the patient undergoing ambulatory surgery.

Persistent postoperative pain

Persistent postoperative pain (PPP) is common, causes disability, lowers quality of life and has economic implications; it is a major cause of chronic pain and therefore an important public health problem.⁸ Severe PPP affects 2 to 10% of adults undergoing surgery.⁹

Surgeons can play an important role in reducing PPP by using minimally invasive and nerve-sparing techniques such as sentinel node biopsy for mastectomy, thereby avoiding axillary dissection and intercostal nerve damage. Thoracoscopic techniques spare intercostal nerves and avoid the use of rib retractors. Intracostal sutures (versus pericostal sutures) have been shown to be associated with lower pain scores up to 3 months after thoracotomy.¹⁶

At present, one of the most promising strategies to reduce PPP seems to be the use of regional techniques. A recent Cochrane review of 23 RCTs showed that epidural anaesthesia and paravertebral block, may prevent PPP after thoracotomy and breast cancer surgery in about one out of every four to five patients treated. The data

На даний час одна з найбільш обіцяючих стратегій по зниженню персистуючого післяопераційного болю - це використання регіонарних технік анестезії.





Original contribution

Does the perioperative analgesic/anesthetic regimen influence the prevalence of long-term chronic pain after mastectomy? ☆



Arnaud Steyaert MD*, Patrice Forget MD, PhD, Virginie Dubois MD, Patricia Lavand'homme MD, PhD, Marc De Kock MD, PhD

Department of Anesthesiology, Cliniques universitaires Saint-Luc, Institute of Neuroscience, Université catholique de Louvain, Avenue Hippocrate 10, 1200 Brussels, Belgium

Received 12 August 2014; revised 11 November 2014; accepted 14 July 2015

Interventions: All patients were contacted between October and December 2012, with a questionnaire asking for persistent pain after surgery and its characteristics.

Measurements: Besides demographical data, tumor characteristics, and adjuvant treatment, we recorded type and doses of intraoperative anesthetics/analgesics (sufentanil, ketamine, clonidine, nonsteroidal anti-inflammatory drugs, MgSO₄, propofol, or halogenated agents).

Results: Of the 128 patients returning analyzable questionnaires, 43.8% reported chronic pain (48.2% with neuropathic characteristics). Multivariate logistic/linear regression model showed 4 factors independently associated with persistent pain: recall of preoperative pain (odds ratio [OR], 1.27; 95% confidence interval [CI], 1.09-1.48), chemotherapy (OR, 1.32; 95% CI, 1.13-1.55), need for strong opioids in postanesthesia care unit (OR, 1.30; 95% CI, 1.11-1.53), and halogenated agent anesthesia (OR, 0.81; 95% CI, 0.70-0.95).

Conclusion: In conclusion, our study confirms the high prevalence of CPMP, 4 to 9 years after surgery. Recall of preoperative pain, chemotherapy, and need for strong opioids in the postanesthesia care unit were all associated with the presence of chronic pain. Of the intraoperative analgesics/anesthetics studied, only use of halogenated agents was associated with a lower prevalence of CPMP.

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Original contribution

Does the perioperative analgesic/anesthetic regimen influence the prevalence of long-term chronic pain after mastectomy? ☆



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Received 12 August 2014; revised 11 November 2014; accepted 14 July 2015

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Фактори ризику розвитку ПМБС - потреба в сильних опіоїдах в післяопераційному періоді

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Види регіонарних технік для операцій на молочній залозі

Грудна епідуральна блокада

Грудна паравертебральна блокада

Інтерплевральна блокада

Міжреберна блокада

Блокада плечового сплетення

Новітні міофасціальні блоки

Інфузія анестетика в рану

Інфільтрація шкіри в місці розрізу



Що ефективно для профілактики ПМБС?





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The Possible Preventive Role of Pregabalin in Postmastectomy Pain Syndrome: a Double-Blinded Randomized Controlled Trial

PubMed | Embase

Journal of pain and symptom management, 2019, 57(1), 1-9 | added to CENTRAL: 31 March 2019 | 2019 Issue 3

DOI: <https://doi.org/10.1016/j.jpainsymman.2018.10.496> [Copy DOI](#)

Reyad RM, Omran AF, Abbas DN, Kamel MA, Shaker EH, Tharwat J, Reyad EM, Hashem T

Links: [PubMed](#)

Abstract

Context: Chronic postmastectomy pain syndrome (PMPS) has a considerable negative impact on the quality of life of breast

75 мг двічі на день прегабаліна в день операції і тиждень після неї може зменшити частоту ПМБС (200 пацієнтів)

compared to the control group at four weeks ($P = 0.005$), 12 weeks ($P = 0.002$), and 24 weeks ($P < 0.001$) postoperatively. PMPS was diagnosed in 11 patients (11%) of the pregabalin group and 29 patients (29%) of the control group ($P < 0.001$, relative risk: 0.26, 95% CI: 0.12–0.56). At the three follow-up time points, Visual Analogue Scale scores during the first three postoperative weeks were comparable in both groups while they were significantly lower in the pregabalin group at 4, 12, and 24 weeks. These two groups were comparable in the frequency of adverse events ($P = 0.552$). Conclusion: Perioperative oral pregabalin 75 mg twice daily, starting at the morning of surgery and continued for one week, could reduce the frequency of postmastectomy pain syndrome.



Randomized Trial



Perioperative Lidocaine Infusion Reduces the Incidence of Post-Mastectomy Chronic Pain: A Double-Blind, Placebo-Controlled Randomized Trial

Abdullah S. Terkawi, MD¹, Sonal Sharma, MD², Marcel E. Durieux, MD, PhD¹, Swapna Thammishetti, MD¹, David Brenin, MD³, and Mohamed Tiourine, MD¹

From: ¹Department of Anesthesiology, University of Virginia, Charlottesville, VA
²Department of Anesthesiology, Women and Children's Hospital of Buffalo; ³Department of Surgery, University of Virginia, Charlottesville, VA

Address Correspondence: Mohamed Tiourine, MD
Dept. of Anesthesiology
University of Virginia
PO BOX 800710

Background: Chronic post-surgical pain (CPSP) is a not uncommon complication after mastectomy, with a reported incidence between 20% and 68%. Careful dissection, the use of minimally invasive surgical techniques, and attempts to reduce the associated inflammatory and hyperalgesic responses are suggested methods to prevent CPSP.

Objective: To determine if the use of perioperative lidocaine infusion is associated with decreased incidence of CPSP after mastectomy.

Study Design: Double-blind, placebo-controlled randomized trial.

Methods: This is a secondary analysis of data from 61 out of 71 patients who underwent mastectomy for breast cancer. Patients were randomized to either placebo (Group B; n = 27) or

Зменшення частоти виникнення хронічного болю через 6 місяців при застосуванні внутрішньовенної інфузії лідокаїну (61 пацієнт)

Accepted for publication:
11-21-2014

Free full manuscript:
www.painphysicianjournal.com

with a 29-fold increase in CPSP, $P = 0.008$).

Limitations: Small sample size.

Conclusion: Perioperative lidocaine administration was associated with a decreased incidence of CPSP, while breast implant placement and radiotherapy were associated with an increased incidence. These findings suggest a protective effect of lidocaine on CPSP development in mastectomy patients.



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National Institutes of Health

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Reg Anesth Pain Med, 2000 Jul-Aug;25(4):350-5.

EMLA reduces acute and chronic pain after breast surgery for cancer.

Fassoulaki A¹, Sarantopoulos C, Melemani A, Hogan Q.

Author information

Erratum in
Reg Anesth Pain Med 2002 Jan-Feb;27(1):116.

Abstract

BACKGROUND AND OBJECTIVES: A significant percentage of women undergoing breast surgery for cancer may develop neuropathic pain in the chest, and/or ipsilateral axilla and/or upper medial arm, with impairment in performing daily occupational activities. We designed this study to determine if the perioperative application of EMLA (eutectic mixture of local anesthetics; AstraZeneca) cream in the breast and axilla area reduces analgesic requirements, as well as the acute and chronic pain after breast surgery.

METHODS: Forty-six female patients scheduled for breast surgery received randomly 5 g of EMLA or placebo on the sternal area 5 minutes before surgery, and 15 g on the supraclavicular area and axilla at the end of the operation. Treatment with EMLA cream (20 g) or placebo was also applied daily on the 4 days after surgery. In the postanesthesia care unit (PACU), 3, 6, 9, and 24 hours after surgery, and on the second to sixth day postoperatively, pain was assessed by visual analogue scale (VAS) at rest and after movement, and postoperative analgesic requirements were recorded. Three months later, patients were asked if they had pain in the chest wall, axilla and/or medial upper arm, decreased sensation, if they required analgesics at home, and for the intensity of pain.

RESULTS: Acute pain at rest and with movement did not differ between the EMLA and control groups, and the analgesics consumed during the first 24 hours were the same for the EMLA and control groups. However, time to the first analgesia requirement was longer ($P = .04$), and codeine and paracetamol consumption during the second to fifth days was less ($P = .001$, and $P = .004$, respectively) in the EMLA versus the control group. Three months postoperatively, pain in the chest wall, axilla, and the total incidence and the intensity of chronic pain were significantly less in the EMLA versus the control group ($P = .004$, $P = .025$, $P = .002$ and $P = .003$, respectively). The use of analgesics at



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Cited by 18 PubMed Central articles

Local anesthetics and regional anesthesia versus conventional analgesia for p [J Clin Anesth. 2019]

Review Local anaesthetics and regional

Через три місяці після операції частота та інтенсивність хронічного болю була меншою в групі, де використовували крем EMLA (46 пацієнтів)



Format Abstract ▾

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Ann Fr Anesth Reanim. 2008 Dec;27(12):979-86. doi: 10.1016/j.annfar.2008.10.006. Epub 2008 Nov 14.

[Ropivacaine infiltration during breast cancer surgery: postoperative acute and chronic pain effect].

[Article in French]

Baudry G¹, Stehens A, Laplaza D, Koeberle P, Bachour K, Bettinger G, Combier F, Samain E.

⊕ Author information

Abstract

OBJECTIVES: Decrease acute pain after breast cancer surgery by an infiltration of ropivacaine. Analyse effect on chronic pain.

STUDY DESIGN: Prospective randomised double blind versus placebo study.

PATIENTS AND METHODS: Eighty-one patients randomised between two groups received wound infiltration with 40 ml of ropivacaine 4.75 mg/ml or placebo. Acute pain was assessed during 24h with analogical visual scale and antalgic consumption. One year later, telephonic interviews looked for chronic pain and evaluate it with McGill Pain Questionnaire.

RESULTS: Analogical visual scale pain score, antalgic consumption and chronic pain incidence were similar between groups.

CONCLUSION: Ropivacaine scar infiltration provided no acute or chronic pain relief after breast cancer surgery.

PMID: 19013751 DOI: 10.1016/j.annfar.2008.10.006

[Indexed for MEDLINE]



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A double-blind randomized trial of wound and intercostal space infiltration [Anesthesiology. 2013]

Continuous wound infiltration with ropivacaine reduces pain and analgesic [Anesth Analg. 2003]

Bupivacaine 0.5% versus ropivacaine 0.75% wound infiltration to decrease [Minerva Chir. 2012]

Review Effect of wound infiltration with ropivacaine or bupivacaine anal [Int J Surg. 2015]

Review Intra-operative paravertebral block for postoperative anal [Eur J Cardiothorac Surg. 2011]

See reviews...

Інфільтрація рани розчином ропівакаїну не впливає на хронічний постмастектомічний біль (81 пацієнт)





Thoracic paravertebral block reduced the incidence of chronic postoperative pain for more than 1 year after breast cancer surgery

Hiroki Shimizu^{1,2*}, Yoshinori Kamiya^{1,3}, Hironobu Nishimaki², Sadahei Denda² and Hiroshi Baba¹

Через рік після операції частота виникнення хронічного болю була меншою в групі, де використовували паравертебральну блокаду (46 пацієнтів)

Journal of Pain Research

Open Access Full Text Article

Preoperative ultrasound-guided multilevel paravertebral blocks reduce the incidence of postmastectomy chronic pain: a double-blind, placebo-controlled randomized trial

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ORIGINAL RESEARCH

TPVB has the potential to reduce chronic pain for more than 1 year

Через 3 і 6 місяців частота виникнення хронічного болю була меншою в групі, де використовували мультирівневу ПВБ (172 пацієнти)



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Minerva Anesthesiol. 2018 Jun;84(6):769-771. doi: 10.23736/S0375-9393.18.12544-2. Epub 2018 Feb 15.

Pectoral nerve block and persistent pain following breast cancer surgery: an observational cohort study.

Besch G^{1,2}, Lagrave-Safran C³, Ecarnot F^{4,5}, De Larminat V³, Gay C³, Berthier F⁶, Samain E^{6,4}, Pili-Floury S^{6,4}.

⊕ Author information

PMID: 29469548 DOI: [10.23736/S0375-9393.18.12544-2](#)

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c [Rev Esp Anesthesiol Reanim. 2012]

[Interest of ultrasound-guided lateral
pectoral [Ann Fr Anesth Reanim. 2014]

Через 6 місяців **не було знайдено різниці** в частоті виникнення і в силі ПМБС в групі **пекторальної блокади** і контрольній (181 пацієнт)



Pre-emptive analgesia of ultrasound-guided pectoral nerve block II with dexmedetomidine–bupivacaine for controlling chronic pain after modified radical mastectomy

Ali M. Ali Hassn^a, Hala E. Zanfaly^a, Taha A. Biomy^b

Departments of ^aAnesthesia and Intensive Care, ^bGeneral Surgery, Faculty of Medicine, Zagazig University, Zagazig, Egypt

Correspondence to Ali M. Ali Hassn, Lecturer of Anesthesia and Intensive Care, Department of Anesthesia and Intensive Care, Faculty of Medicine, Zagazig University, Zagazig, Egypt
Tel : +20 112 722 2733; fax: 0552360804;
e-mail: dr.barakat71@yahoo.com

Received 01 June 2014

Accepted 09 September 2015

Research and Opinion in Anesthesia & Intensive Care 2016, 3:6–13

Background

The term chronic pain refers to pain in and around the area of surgery lasting beyond 3 months after surgery when all other causes of pain, such as recurrence, have been ruled out. Persistent pain after treatment has a considerable negative influence on quality of life in breast cancer survivors.

Patients and methods

Sixty female patients were enrolled for ultrasound-guided modified pectoral block. They were randomly assigned into two groups of 30 patients each: group C was administered 30 ml saline, and group BD was administered 30 ml 0.5% bupivacaine with dexmedetomidine 1 µg/kg. Pectoral block II was performed with ultrasound preoperatively and general anesthesia was induced after 15 min of assessment of the block in both groups. Patients were assessed for acute pain, chronic pain, and patient satisfaction.

Results

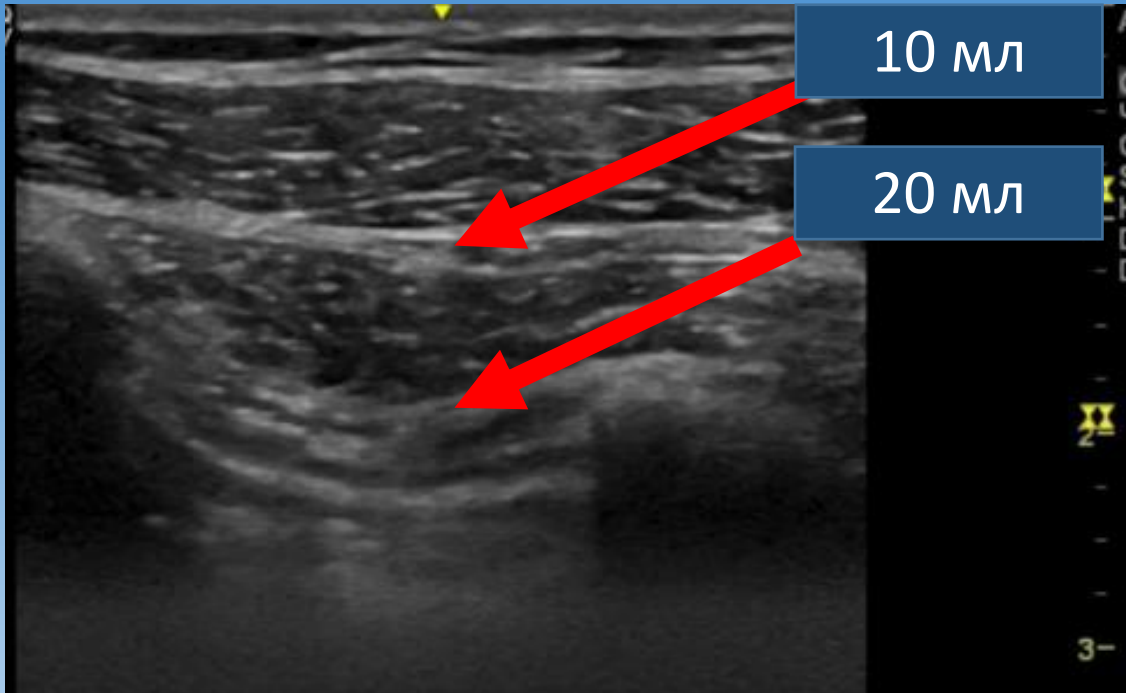
A total of 60 female patients were randomized into two groups: group C (the control group)

Через 6 місяців статистично менша часта ПМБС в групі пекторальної блокади р-м бупівакаїну та дексмедитомедину ніж в групі контролю (60 пацієнт)

reduction in total postoperative analgesia and delayed rescue analgesia in the bupivacaine dexmedetomidine group (the BD group) in relation to the control group. This marked reduction in the severity of postoperative pain correlates with reduced chronic pain on follow-up of our patients with patient satisfaction, good sleep, and reduced analgesic need, which improves quality of life.



Пекторальна блокада (Pecs block)

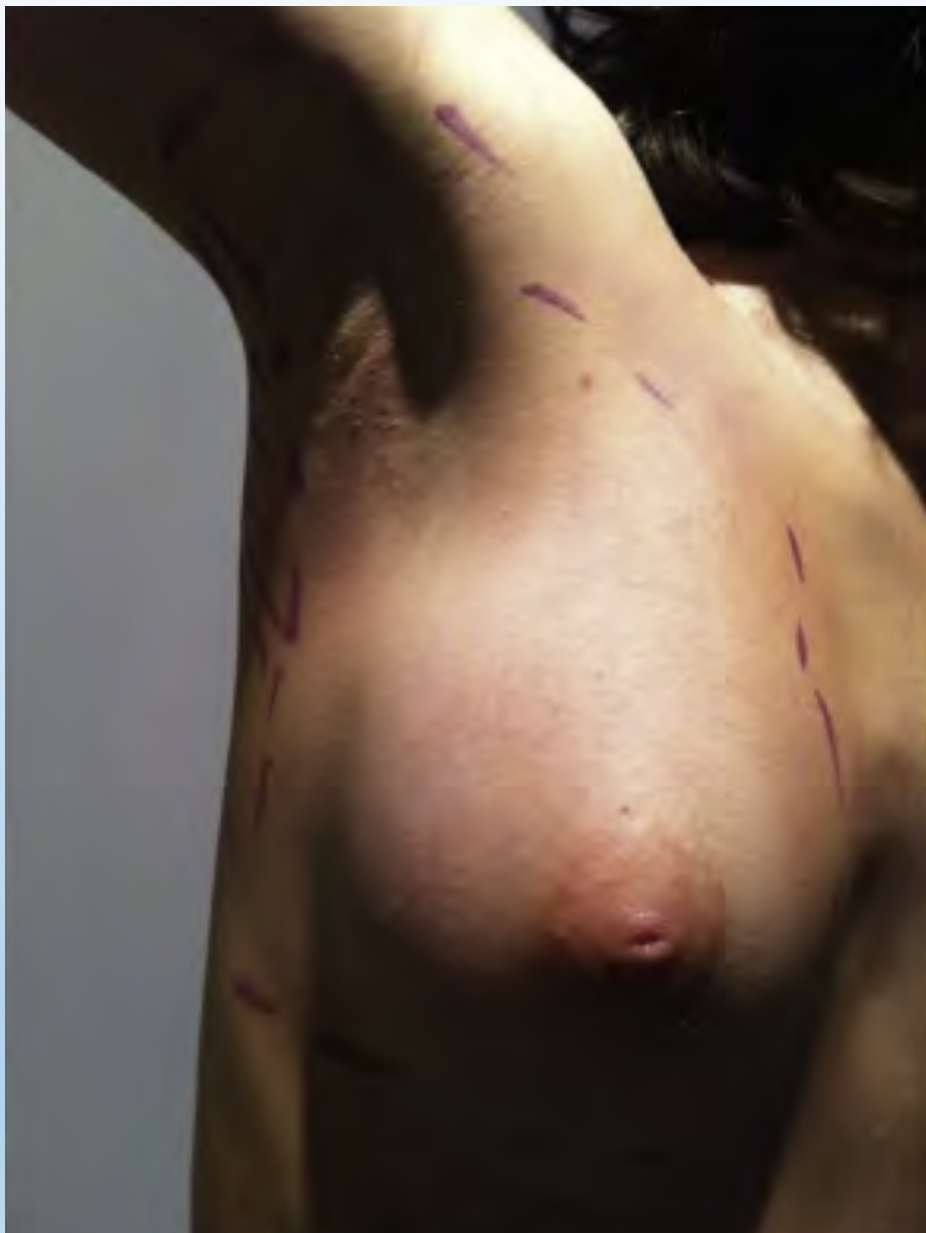


Блок охоплює три групи нервів:

- бокові гілки **міжреберних нервів Th2-Th6**
- ***n. pectoralis lateralis*** та ***n. pectoralis medialis***
- ***n. thoracicus longus*** та ***n. thoracodorsalis***

Пекторальна блокада





Одноцентрове проспективне дослідження

Критерії включення:

- жінки
- вік 18-80 років
- ASA I-II
- планова унілатеральна лампектомія або мастектомія із аксілярною лімфодисекцією
- інформована згода

Анестезія:

- TIVA + Пекторальна блокада

Через 3 і 6 місяців опитування по телефону

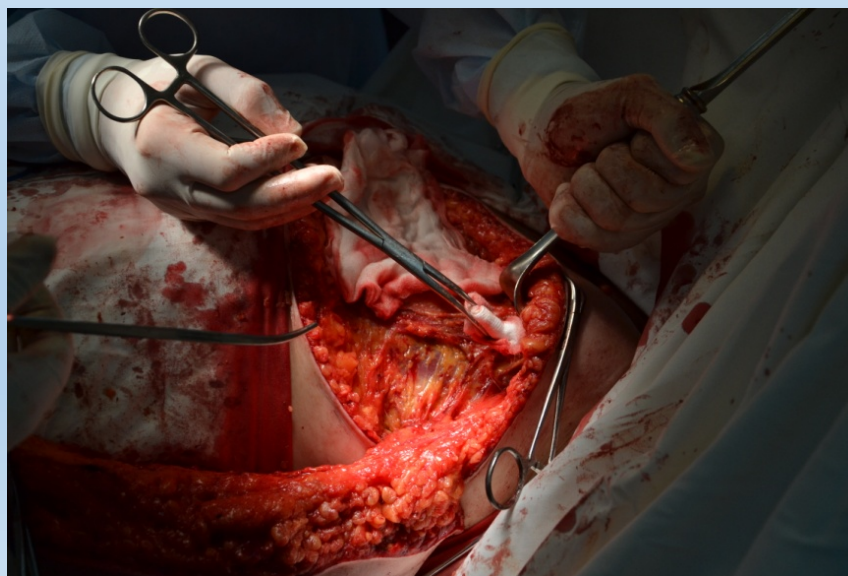


| | |
|-----------------------------|--------------------------|
| Кількість пацієнтів | 16 |
| ASA 1/2 | 5/11 |
| Середній вік, роки | 61,0 (51,0-69,0) |
| Середня вага, кг | 70,0 (65,0-85,0) |
| лампектомії/мастектомії | 9/7 |
| Тривалість операції, хв | 90,0 (80,0-100,0) |
| Проходило променеву терапію | 8 |

Дані подані в вигляді медіани та інтервалу між квартилями. ASA- American Society of Anesthesiologists



| | 3 місяці | 6 місяців |
|-----------------------|-----------------|------------------|
| частота ПМБС | 62% | 37% |
| із них | | |
| легкий (1-3) | 60% | 66% |
| середній (4-7) | 40% | 34% |
| сильний (8-10) | - | - |



Висновки

- **Хронічний постмастектомічний більовий синдром є значною проблемою в онкохірургії молочної залози**
- **На даний час немає ефективних методів з високим ступенем доказовості для профілактики ПМБС**
- **Пекторальна блокада може зменшувати інтенсивність ПМБС не впливаючи на його частоту виникнення**



ДЯКУЮ ЗА УВАГУ

