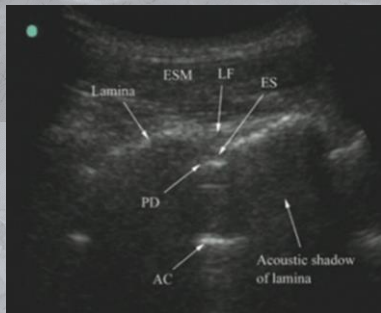


# Does Regional Anaesthesia *benefit Truncal Procedures...*



*... for Surgeries  
of the Breast*

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AOSRA 2019,  
Kochi, Japan

# Content

- Background
- What options have we and what works?
- Evidence of benefits?

*Paravertebral Blocks (TPVB)*

*Immediate perioperative*

*Long term*

*Inter-fascial Plane Blocks*

*.... what's current*

# Background

- Surgeries of the breast- most common procedures
  - Major procedures related to malignancies
    - most common invasive malignancy*
    - 2<sup>nd</sup> main cause of cancer death*
  - emerging myriad of regional anaesthetic options
  - introduction of US has accelerated practice of new and safer approaches
- ...various techniques have their own niche and documented reported successes...*



## REVIEW ARTICLE

(*Reg Anesth Pain Med* 2017;42: 609–631)

# Perioperative Breast Analgesia *A Qualitative Review of Anatomy and Regional Techniques*

*Glenn E. Woodworth, MD,\* Ryan M.J. Ivie, MD,\* Sylvia M. Nelson, PhD,\*  
Cameron M. Walker, PhD,\* and Robert B. Maniker, MD†*

### Paravertebral Block

In summary, the literature supports PVB as an effective perioperative analgesic technique for breast surgery. Paravertebral block can also provide surgical anesthesia and may decrease nausea and vomiting, hospital stay, and chronic postsurgical pain. The use of paravertebral catheters has not reliably been demonstrated to be superior to a single-injection technique at 1 or multiple levels. Similar to epidurals, the safety of PVBs for outpatient surgery is a concern, given the trend toward outpatient performance of breast surgeries. Outpatient breast surgery with ambulatory paravertebral catheters has been described, but its analgesic benefit has not been demonstrated.<sup>97,100</sup> Finally, further studies comparing PVB to local anesthetic infiltration are needed.

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provide **surgical anaesthesia** and may **decrease nausea and vomiting, hospital stay, and chronic postsurgical pain.**

the **safety** of PVBs for outpatient surgery **is a concern**

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### *Interfascial Plane Blocks*

The biggest impact of interfascial peripheral nerve blocks could be their relative ease to perform and potentially low risk profile. Because of the peripheral nature of these blocks, sympathetic blockade is not expected, risk of serious bleeding is likely low, and, as with other ultrasound-guided interfascial blocks, performance of the block in both awake and anesthetized patients may be safe. Although the novel interfascial blocks hold promise, there is a clear paucity of high-quality evidence supporting the analgesic efficacy and addressing the safety of these approaches. Randomized controlled trials comparing the various technical approaches to one another and comparing the interfascial blocks to alternative techniques (especially local anesthetic infiltration and PVB) are needed.

Although the novel interfascial blocks hold promise, there is a clear **paucity of high-quality evidence** supporting the analgesic efficacy and addressing the safety of these approaches.

No RCTs of SPB, PIFB, or TTP block were identified

# Paravertebral Block (PVB)...

- Described by Sellheim *1906*, modified by Lawen *1911*
- Eason & Wyatt *1979*
- US aided feasibility assessment in breast surgery *Pusch 2000*
- US guided PV space puncture and catheter insertion in cadaver model. *Luyet 2009*
- US guided PVB performed breast cancer surgery.  
*Hara 2009, Shiibata 2009, Marhofer 2010*



...2010 BJA

15 RCTs (877 patients)  
Language not-restricted  
All types of surgery  
PVB v any other  
analgesic modality

## REGIONAL ANAESTHESIA

### Efficacy and safety of paravertebral blocks in breast surgery: a meta-analysis of randomized controlled trials

A. Schnabel<sup>1\*</sup>, S. U. Reichl<sup>1</sup>, P. Kranke<sup>2</sup>, E. M. Pogatzki-Zahn<sup>1</sup> and P. K. Zahn<sup>1</sup>

Journal of Plastic, Reconstructive & Aesthetic Surgery (2011) 64, 1261–1269



ELSEVIER

...2011



REVIEW

### General anaesthesia versus thoracic paravertebral block for breast surgery: A meta-analysis

Youssef Tahiri<sup>a,\*</sup>, De Q.H. Tran<sup>b</sup>, Jeanne Bouteaud<sup>c</sup>, Liqin Xu<sup>c</sup>,  
Don Lalonde<sup>d</sup>, Mario Luc<sup>a</sup>, Andreas Nikolis<sup>e</sup>

11 studies included (5 RCTs)  
English or French  
GA v PVB only

Pain Physician 2015; 18:E757-E780 • ISSN 2150-1149

Systematic Review

...2015

### Improving Analgesic Efficacy and Safety of Thoracic Paravertebral Block for Breast Surgery: A Mixed-Effects Meta-Analysis

Abdullah S. Terkawi, MD<sup>1,3</sup>, Siny Tsang, PhD<sup>4</sup>, Daniel I. Sessler, MD, PhD<sup>3,5</sup>,  
Rayan S. Terkawi, MD<sup>2</sup>, Megan S. Nunemaker, MSLS<sup>6</sup>, Marcel E. Durieux, MD, PhD<sup>1</sup>,  
and Ashley Shilling, MD<sup>1</sup>

Mixed-Effect Analysis  
24 RCTs (1822 patients)  
Language not-restricted  
PVB v control

# An Evidence-Based Review of the Efficacy of Perioperative Analgesic Techniques for Breast Cancer-Related Surgery

*Pain Medicine* 2016; 0: 1–22

... statistically significant *reductions in pain scores at rest and with movement* not only at *2 hours* following surgery but at *24 hours, 48 hours* and even *72 hours* postoperatively ...

... decrease in the *percentage of subjects avoiding any rescue opioids, dosage* required, *incidence of nausea and vomiting*

... *Shortened* length of *hospital stay*...

... Improved analgesic *satisfaction* ...



- **Technically** more challenging

Landmark v US guided

Level of experience

Performance times (min):

10.81 (*USG SPVB*) v 12.04 (*L MPVB*) .... Saran 2017

37.36 (*USG MPVB*) v 25.79 (*L MPVB*).... Patnaik 2018

6.91 (*L SPVB*) v 17.82 (*L MPVB*)... Kalani 2017

- Incidence of **complications** (0.5%-5%)... Cheng 2016

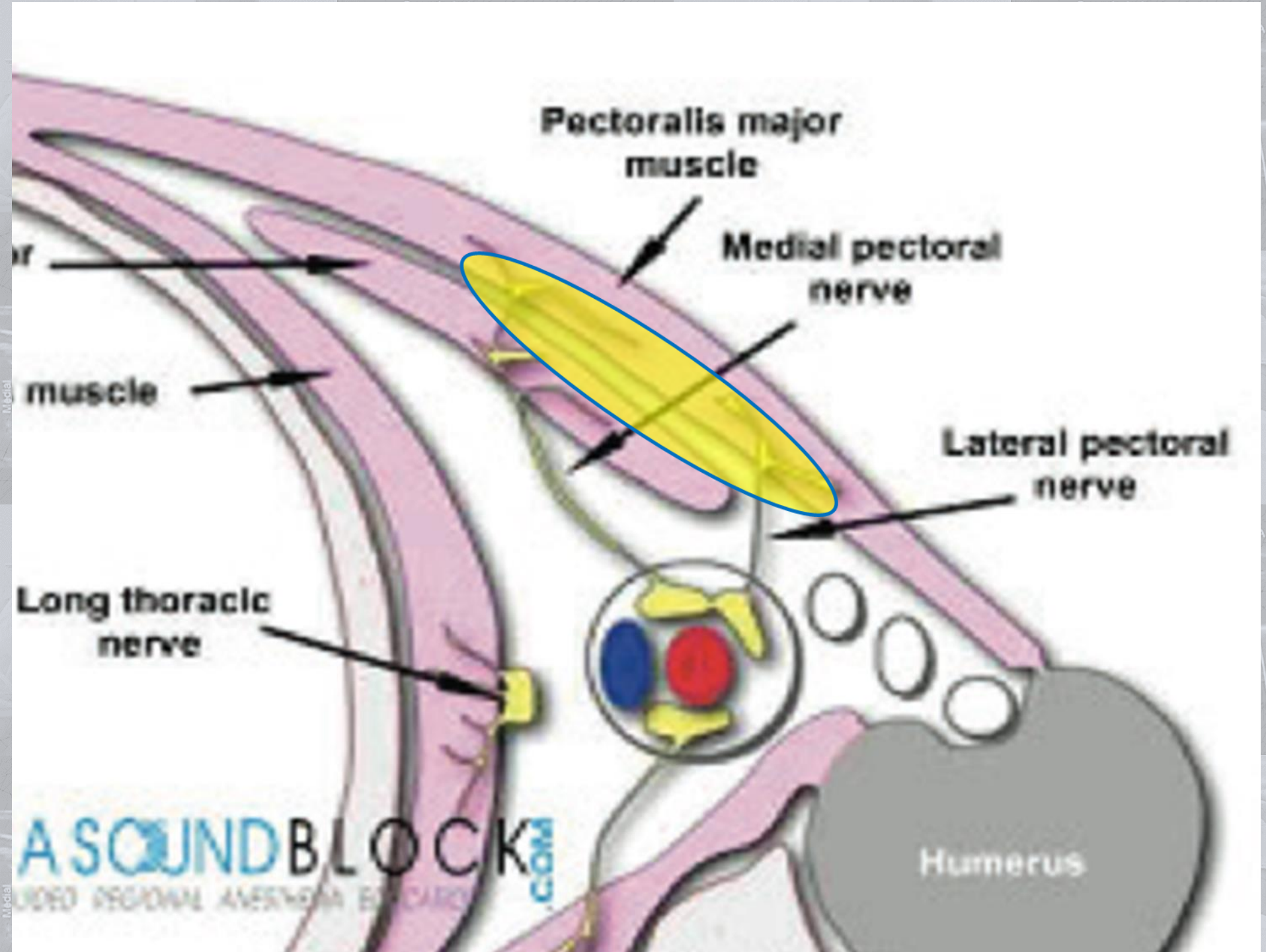
Hypotension

Pneumothorax

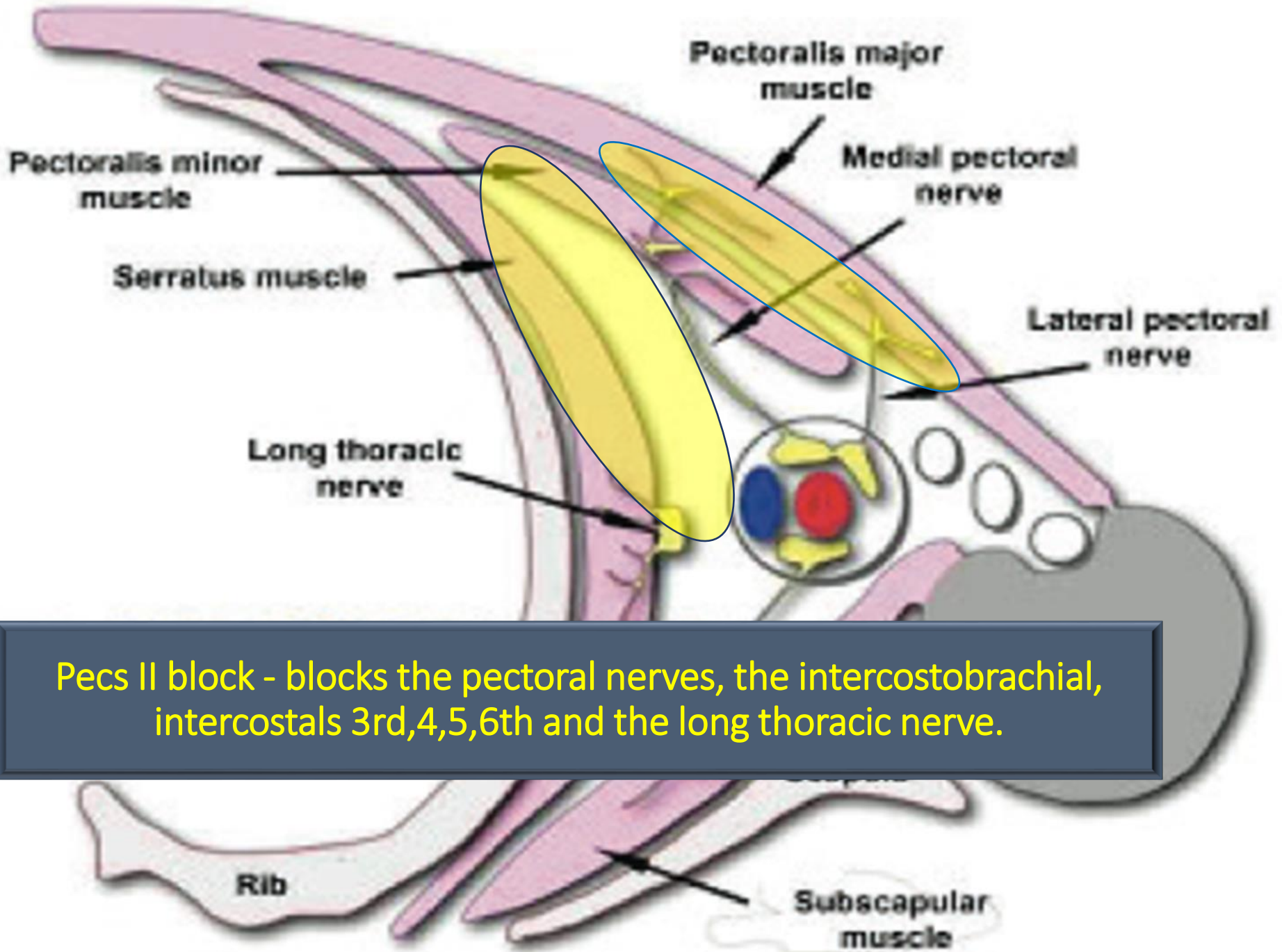
Failure

# For breast surgeries...

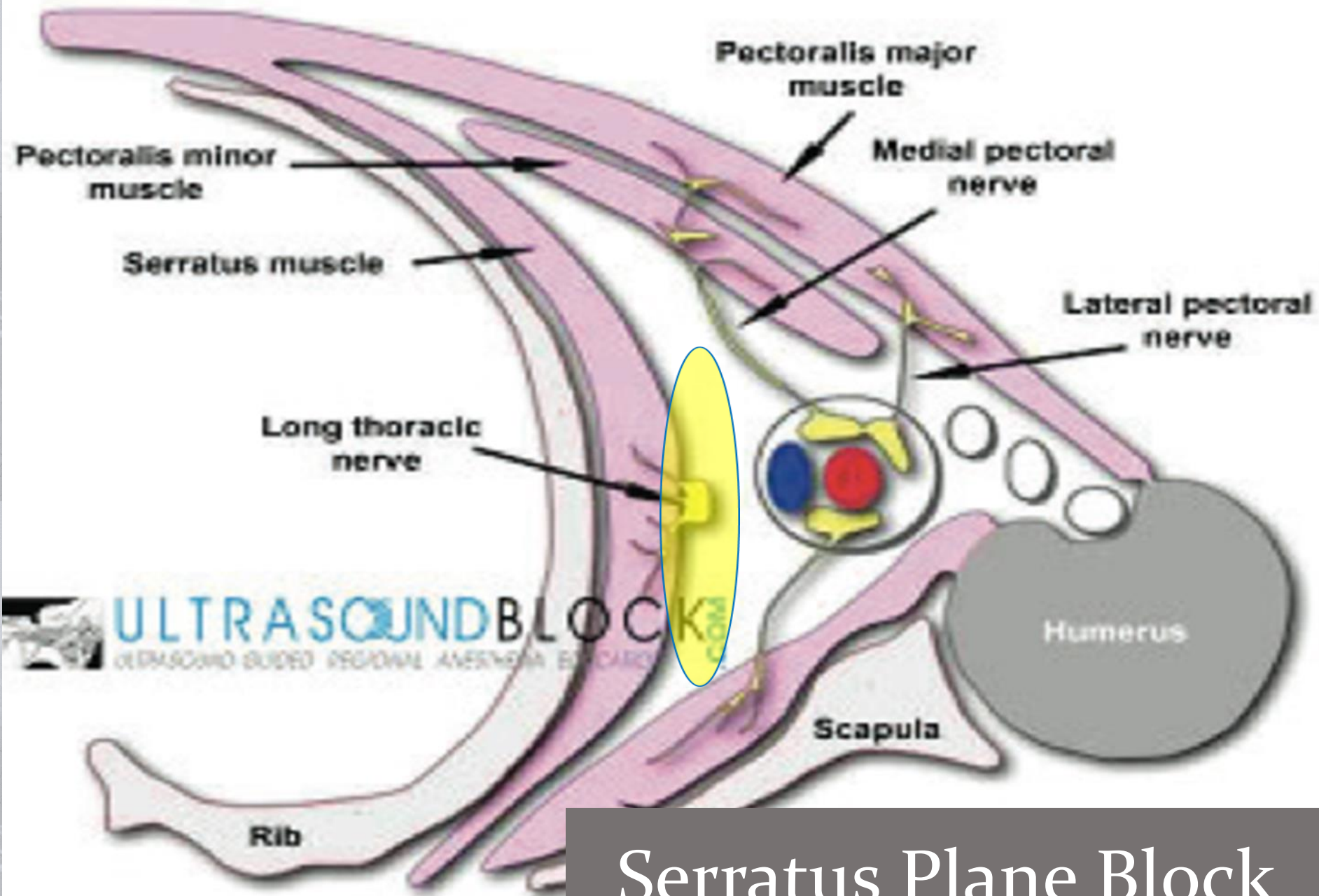
- Blanco (2011) described a novel approach –  
**the ‘pecs block’** *Anaesthesia 2011*
- Single interfascial plane injection  
**between Pectoralis major and minor muscles**
- For reconstructive breast cancer surgery or insertion of subpectoral prostheses







Pecs II block - blocks the pectoral nerves, the intercostobrachial, intercostals 3rd,4,5,6th and the long thoracic nerve.



## Serratus Plane Block