

THE BENEFITS OF USING REGIONAL ANESTHESIA VIA NERVE BLOCKS FOR PATIENTS PRIOR TO SURGERY

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RESEARCH QUESTION

- Do patients who receive preoperative regional anesthesia via a nerve block have less post operative pain and decreased opioid use needs than those who do not when getting joint replacement surgery?

PICOT

- P – patients undergoing surgery
- I – use of regional anesthesia in the form of nerve blocks preoperatively
- C – peripheral nerve blocks vs general/spinal anesthesia; limited use of nerve blocks
- O – less post operative pain and decreased use of opioids
- T – after a surgical procedure during recovery in the hospital and at home

PURPOSE

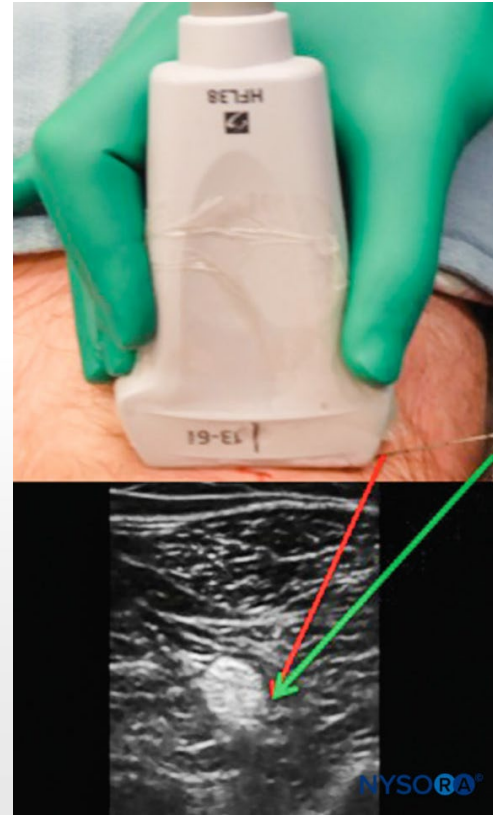
- “Nerve blocks are a way to better control the acute pain at the time of surgery and it can help us ease the transition to controlling pain when you are home.” – Jenlei Li, MD (Yale Medicine Staff, 2020)
- Regional anesthesia
- How do they work?
 - A fine needle is inserted into the surgery site and injects pain medication around the nerves, careful not to touch them. This numbs the nerves so when the surgeon makes his/her incision, the nerves won't be able to alert the brain of the body's pain.
- Main goal?
 - Promote better pain control, shorter stays in the hospital, faster recovery time, and less need for opioids when patient goes home

(Yale Medicine Staff, 2020)

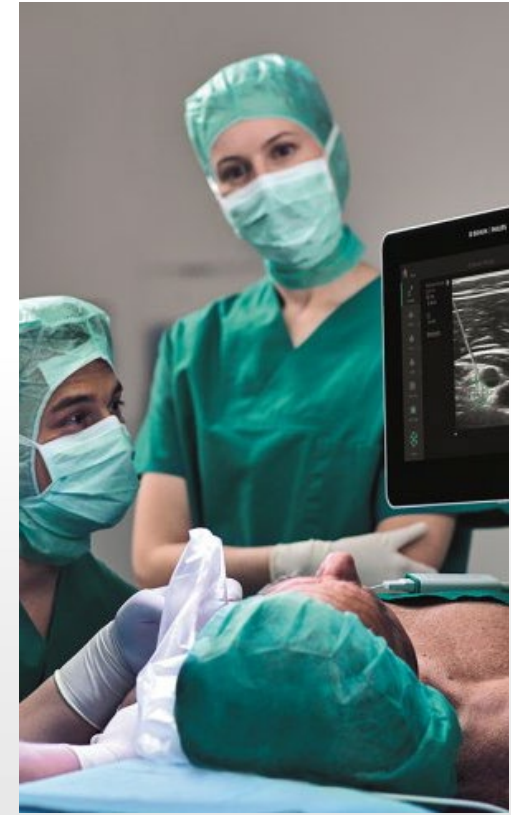
BACKGROUND

- Regional anesthesia via nerve blocks have been around for decades
- Improved ultrasound guidance in the 1990s
 - Enhanced precision of injections
- Used in joint replacement and joint/muscle injury surgeries

(Yale Medicine Staff, 2020)



(A Breakthrough in Real-Time
Ultrasound Guidance for Regional
Anesthesia, 2019)




(Orebaugh & Kirkham, 2020)

SUMMARY OF FINDINGS

- I. Postoperative analgesia improvements with total knee replacements
 - 36 patients were in the study and received either femoral or sciatic-femoral nerve blocks or a fake nerve block
 - Patients were also given a patient-controlled anesthesia pump with morphine or ketorolac after surgery
 - They assessed pain at rest, pain with physical therapy, morphine use, nausea, pruritus, sedation, and patient satisfaction
 - Results?
 - Patients who received peripheral nerve blocks reported better postoperative pain relief at rest for 8 hours after transfer to a hospital ward and decreased morphine use by about 50% until the second postoperative day.
 - Conclusion?
 - Femoral and sciatic-femoral nerve blocks improve postoperative analgesia and decrease use of morphine after total knee replacement surgeries

(Allen et al., 1998)



SUMMARY OF FINDINGS

II. Perianesthesia nurses and peripheral nerve blocks

- A team of perianesthesia nurses from one hospital were surveyed on their perception of peripheral nerve blocks and how they worked in regard to pain control and the risk for falls in comparison to spinal and general anesthesia.
- Despite the perceived risk of falling after getting lower extremity total joint replacements, the nurses believed that peripheral nerve blocks improved pain control and patient recovery.
- In addition, the perianesthesia nurses also said that if they would get total joint replacement surgeries, they would prefer peripheral nerve blocks over general or spinal anesthesia after caring for those who received peripheral nerve blocks and those who did not

(McClain et al., 2019)

SUMMARY OF FINDINGS

III. Peripheral nerve block vs Subarachnoid block in total hip replacement

- Ultrasound guided peripheral nerve blocks are becoming more popular in the lower extremity orthopedic surgeries, including total hip replacements
- This study compared peripheral nerve blocks and spinal anesthesia for total hip replacement surgeries
- They assessed mean arterial pressure, pain, total fluid consumption, fentanyl consumption, and nausea
- Conclusion?
 - Patients who received peripheral nerve blocks had more stable mean arterial pressure, less total fluid consumption, lower pain scores, lower fentanyl consumption, and less incidence of nausea

(Rayamajhi et al., 2019)

RECOMMENDATIONS/SUMMARY

- According to a study over nerve blocks, hip fractures, hip arthroplasties, and knee replacements, the use of peripheral nerve blocks are not well understood despite the evidence of improved pain control and postoperative outcomes. (Neuman et al., 2020)
- The study revealed that fewer than 5 of every 100 patients hospitalized with hip fractures currently receive a peripheral nerve block (Neuman et al., 2020)
- This study suggested an underuse of peripheral nerve blocks. (Neuman et al., 2020)
- To better improve pain control and satisfaction of patients and decrease the use of opioids, peripheral nerve blocks need to be more educated on in hospitals so they can be used more often for patients receiving total joint replacement surgeries.

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THANK YOU FOR WATCHING!

