One in 3 women could potentially be spared chronic pain after breast cancer surgery

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One in every three women undergoing a mastectomy could potentially be spared chronic post-operative pain if anesthesiologists used a regional anesthetic technique in combination with standard care, according to a new study.

Standard care for mastectomies is a general anesthetic, whereby anesthesiologists use gas to keep the patient asleep and narcotics to control pain. Up to 60 per cent of women may experience chronic pain three months after they've had the surgery and at least half of those will still suffer from this pain one year later

"Sadly, the pain these women experience can be so severely debilitating that it may require treatment by a pain specialist and pain killers," said Dr. Faraj Abdallah, lead author of the study and an anesthesiologist at St. Michael's Hospital.

The regional anesthetic technique Dr. Abdallah examined when added to standard care -called ultrasound-guided paravertebral blocks- is similar to a dental freeze. Trained anesthesiologists use a local anesthetic to freeze nerves in the breast area. Paravertebral blocks allow excellent pain control immediately after surgery and help with long-term pain reduction.

"Six months after breast cancer surgery, we found that women who received paravertebral blocks immediately before their mastectomies had more than 50 per cent lower risk of developing chronic pain

compared to those who received standard care," said Dr. Abdallah, who is also an assistant professor in the Department of Anesthesia at the University of Toronto.

The study, published today in the journal *PAIN*, showed that these nerve blocks most significantly reduced neuropathic pain, which is the most common form of chronic pain affecting women after mastectomies. Unlike the soreness and aching associated with conventional pain -which may also affect these patients- neuropathic pain also affects sensation.

"One patient will lose sensation and not be able to feel a pin prick, another will experience severe pain if the skin is even lightly touched and the next patient may feel constant tingling or pins and needles" said Dr. Abdallah. "Grading pain on a scale of one to 10 fails to capture neuropathic pain symptoms and frequently leads to under-diagnosis."

Because each patient may experience different neuropathic symptoms pain, Dr. Abdallah said clinicians needed a reliable tool to assess this pain in women after breast cancer surgery and to measure how effective their interventions are at preventing this pain.

In this same study, the researchers also showed that a pain assessment test, called the DN-4, can be used by clinicians to reliably identify chronic neuropathic pain in women after breast cancer surgery.

The DN-4 combines interview questions with a physical assessment performed by a clinician. It tests the patient's sensation in the four areas where post-mastectomy pain is likely to occur - the breast, the chest, the shoulder and the arm.

"Breast cancer survival rates have improved significantly with advances in diagnosis and management, but chronic pain management after breast cancer surgery has not kept pace," said Dr. Abdallah. "Proving that the

DN-4 is a reliable test for this patient group is important because it gives clinicians a diagnostic tool to identify this pain, monitor its progress and measure the success of treatment."

Provided by St. Michael's Hospital