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Nerve-Sparing Procedure for Lung Surgery Does Not Improve Post-Operative Pain: Presented at WCLC

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By R.M. Hadfield, PhD

SYDNEY, Australia -- October 31, 2013 -- A nerve-sparing thoracotomy procedure demonstrated no improvement in post-operative pain or chronic pain compared with standard posterolateral thoracotomy, according to research presented at the 15th World Conference on Lung Cancer (WCLC).

'The reason is probably that post-thoracotomy pain has a multifactorial aetiology, and merely preserving the intercostal nerve is not sufficient," explained C.S. Pramesh, Tata Memorial Centre, Mumbai, India, speaking here on October 28. "Intercostal nerve compression may not be the sole mechanism for post-thoracotomy pain," he added.

Dr. Pramesh and colleagues had hypothesised that post-thoracotomy pain could be decreased by avoiding injury to the intercostal (IC) nerves. A modified thoracotomy technique was developed in which the 5th IC neurovascular bundle was dissected along with the IC muscle, suspended and not retracted. To avoid entrapment of nerves during closure, holes were drilled in the 6th rib for the passage of sutures.

In total 90 patients were randomised 1:1 into the study between May 2010 and July 2012, and received either standard posterolateral thoracotomy or the nerve-sparing procedure.

The mean worst pain score over the first three post-operative days in the posterolateral thoracotomy group was 3.83 compared with 3.71 in the nerve-sparing group (P = .70). The mean morphine requirement was also similar between the 2 groups, with 1.40 mg/kg required in the posterolateral thoracotomy group and 1.45 mg/kg in the nerve-sparing group (P = .73). Chronic pain was reported by 46.1% and 41.2% of patients, respectively (P = .73).

Six patients died before 6 months, and 5 were lost to follow-up or were not evaluable.

Inclusion criteria were Eastern Cooperative Oncology Group (ECOG) 0 or 1, age 18 to 75 years and American Society of Anesthesiologists grade I or II. Patients were excluded if they had had a prior thoracotomy or additional incisions/chest-wall invasions.

Both patient and assessor were blinded, and perioperative analgaesia was consistent in both arms of the study. Postoperative pain was assessed by numerical rating score, and chronic pain was assessed at 6 months.

Baseline characteristics were well-balanced between both groups for gender, age, weight and type of surgery. The majority of patients were undergoing lobectomy or metastatectomy.

Thoracotomy is one of the most painful incisions, according to the research team, who noted that post-thoracotomy pain may result from direct trauma to the neurovascular bundle during rib spreading or due to entrapment of the nerves in sutures at closing.

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[Presentation title:Phase II Double-blind Randomized trial comparing Posterolateral Thoracotomy versus Nerve Sparing Thoracotomy for lung surgery (PoTNeST) - Impact of preservation of the neurovascular bundle during thoracotomy on post-operative pain. Abstract O09.07]