

TITLE : ANALGESIA FOR FRACTURED TIBIA USING SCIATIC NERVE BLOCK.
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Sciatic nerve block has been used to repair fractured shaft of tibia (1). However it has not received wide consideration as a perioperative analgesic. Because patients with leg fractures experience considerable pain prior to operation, we evaluated the safety and the efficacy of sciatic nerve block in this circumstance.

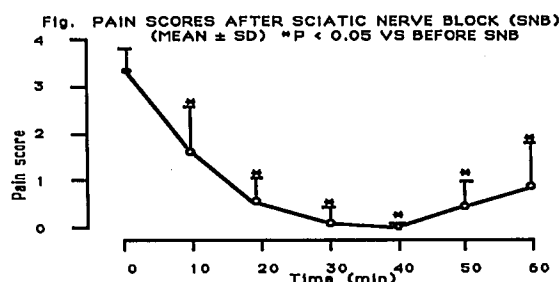
Sciatic nerve block was performed in 14 patients aged 46 \pm 16 years (mean \pm SD). All the patients had a serious fractured tibia (8 open, 6 close). Criteria for inclusion were: 1) fractured shaft of tibia; 2) Absence of coma (Glasgow coma score = 15); 3) Absence of known allergy to local anesthetics; and 4) Absence of neurologic or vascular deficit in the affected limb. After careful disinfection of the skin, sciatic nerve block was carried out by an anesthesiologist in a mobile emergency care unit. The anterior approach (2) and a nerve stimulator (3) were used. Twenty ml of 1% lidocaine (200 mg) was injected. Pain intensity was assessed every 10 min for 60 min after sciatic nerve block using the following score: 0 = no pain; 1 = minimal pain; 2 = tolerable pain; 3 = intense pain; 4 = major, intractable pain. Failure of sciatic nerve block was defined as a pain score \geq 2 at 30 min; a good result as a pain score of 0 at 30 min. Statistical analyses was performed using Student's t Test for paired data ($p < 0.05$ was considered significant).

No complications resulted from the block. Onset of analgesia occurred in less than 10 min in all patients. Pain scores decreased significantly from 10 to 60 min (fig). However 2 patients with open fractures had pain at 60 min as evidenced by an increase in pain score to 70 % of the initial value.

Our results demonstrate that excellent analgesia can be obtained by sciatic nerve block in patients with fractured shaft of tibia. The technique is safe and easy to perform a prehospital situation. Saphenous nerve block may be needed to produce complete analgesia in open fractured shaft of tibia when the wound encroaches on the medial aspect of the leg.

References :

- 1) Br. J. Anaesth., 46 : 121-123, 1974.
- 2) ANESTHESIOLOGY, 24 : 222-224, 1963.
- 3) Anaesthesia, 42 : 296-298, 1987



A826

Title : DOES INTRAPLEURAL LIDOCAINE INFUSION DECREASE PATIENT CONTROLLED ANALGESIA (PCA) MORPHINE CONSUMPTION AFTER THORACOTOMY ?

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Many authors^{1,2} have reported ineffectiveness of intrapleural (IP) bupivacaine in thoracotomy pain. However Lidocaine (L) has been successfully used in chest trauma patients³. We studied 1) the effect of IP L on 24 hours postoperative (PO) morphine (M) requirement in patients who underwent thoracotomy, by using a PCA system 2) L pharmacokinetics.

After informed consent and institutional approval, 28 consecutive ASA class I-III patients undergoing pneumonectomy or lobectomy were assigned to group IP+ or IP-. In group IP+ (n=14), pain control was achieved by the association of IP 2% L with epinephrine 1:200,000 (bolus of 3 mg/kg followed by a 48 hours continuous infusion of 1 mg/kg/h) and M PCA. In group IP- (n=14), pain control was achieved by M PCA alone. Blood pressure, EKG, pulse oxymetry were monitored and blood gases were obtained. PCA cumulative M consumption, number of boluses delivered and attempts were hourly noted during the first PO day. In 11 patients (7 lobectomy with chest tubes and 4 pneumonectomy without chest tubes), serial venous blood samples were drawn at 0, 10, 20, 30, 60 min., 2, 3, 6, 12, 24, 36, 48 hours from the bolus time and 0, 10, 20, 30, 60 min., 2, 4, 6, 12, 24 hours after the end of the infusion and were assayed for L. Steady state concentration (C_{ss}) was determined 48 hrs after bolusing, terminal rate constant (k) was calculated by using loglinear regression of observed terminal curve. Data are expressed as mean \pm SEM and were evaluated by one way ANOVA, Mann-Whitney and Fischer's exact tests when appropriate.

There was no significant difference between the groups in age, weight, sex distribution, chest tubes. All IP+ patients but one needed M PCA immediately after the L bolus because of an inadequate analgesia. Despite smaller cumulated consumption of M in the IP+ group, no statistical

difference could be found because of high interindividual variability (Fig 1). L plasma concentration profile is shown on Fig 2. C_{ss} ranged from 1.4 to 10.5 μ g/ml (4.3 \pm 0.8). Terminal half life was increased (528 \pm 97 min) despite a normal total body clearance⁴ (CL/f = 5.5 \pm 1.1 ml/min/kg). The presence of chest tubes did not modify pharmacokinetics.

Although the infusion rate used in this study was far less important than the one needed to sustain a multidermatomal IP analgesia in a canine model⁵, it may provide high plasma L concentrations. L resorption is unpredictable after several hours of infusion because of drug accumulation into the interpleural space. Finally IP L did not decrease significantly M requirement during the first day after thoracotomy.

- 1) Anesthesiology 67: 811-813, 1987.
- 2) Anesthesiology 71: A665, 1989.
- 3) Anesthesiology 67: A241, 1987.
- 4) Br J Clin Pharmacol 10: 353-361, 1980.
- 5) Anesthesiology 71: A751, 1989.

Fig 1 : EVOLUTION OF CHRONIC PAIN INDEX OF PATIENTS WITH THORACOTOMY (PCA MORPHINE CONSUMPTION) AT 24 HOURS AFTER THORACOTOMY

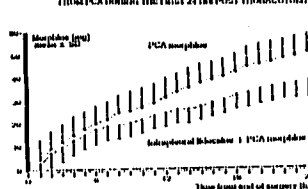


Fig 2 : LIDOCAINE CONCENTRATION IN PLASMA DURING THE 24 HOURS

