

Title: EFFECT OF FEMORAL NERVE BLOCKADE ON BLOOD LOSS DURING HIP ARTHROPLASTY.

Authors: E.T. Ang, M.D., S. Khon, M.D., G. Goldfarb, M.D., B. Lassale, M.D., P. Jolis, M.D.

Affiliation: Département d'anesthésie-réanimation chirurgicale et service de chirurgie orthopédique, hôpital Beaujon, UER Xavier Bichat, université Paris 7, 92118 Clichy Cedex.

Femoral nerve block has been proposed as a complement of general anesthesia in poor risk patients undergoing hip arthroplasty¹. Although it has been shown that spinal and epidural anesthesia allow reduced the blood loss during such interventions, the effect of femoral block is unknown. The purpose of the present study was to compare the effect of general anesthesia alone and general anesthesia plus femoral and lateral cutaneous (F+LC) nerves blockade on blood loss during hip arthroplasty.

Methods:

Sixty patients (M/F: 27/33), aged 65 ± 14 yrs (Mean \pm SD), weighing 65 ± 12 kg, were included in this study after obtaining informed consent and approval of the local committee on human research. All were scheduled for hip arthroplasty by a postero-lateral approach and received hydroxyzine, 100 mg IM one hour prior to the procedure. They were randomly allocated to one of the 2 following groups: in the first group (A), blockade of both femoral and lateral cutaneous was performed with 40 ml of 0.25% bupivacaine with adrenaline (1:200000); 20 min later, induction of anesthesia was done with thiopental (7 mg.kg^{-1}) and pancuronium (0.1 mg.kg^{-1}). After tracheal intubation, anesthesia was maintained with N_2O , 65% in oxygen and enflurane, 0.4-1%, delivered by controlled ventilation. In the other group (B), the patients had no regional anesthesia and the induction was performed using the same doses of thiopental and pancuronium as quoted previously, plus fentanyl ($6 \mu\text{g.kg}^{-1}$); after tracheal intubation, anesthesia was maintained as in group A plus increments of fentanyl. The following parameters were studied at several stages (before regional anesthesia and/or before induction, after induction, after incision, during the surgical procedure, during closure): mean arterial blood pressure (MAP), heart rate (HR) and blood loss. The latter was measured gravimetrically and added to the blood loss measured in the suction bottles. Results were analysed using ANOVA and student's t test.

Results

Results are summarized in table 1. A significant decrease in both MAP and HR occurred in the 2 groups during the surgical procedure, but there were no significant differences in these parameters between the 2 groups (figure 1). The blood loss was significantly lower in group A. No adverse effect imputable to bupivacaine was observed.

Discussion

This study demonstrates that in anesthetized patient, analgesia obtained with F+LC nerve blockade using bupivacaine plus adrenaline, instead of fentanyl, allows reduced blood loss during hip arthroplasty. It has been shown that this technique does not induce toxic plasma levels of bupivacaine². This effect is probably not related to systemic hemodynamic variations, since no significant difference was observed between the 2 groups.

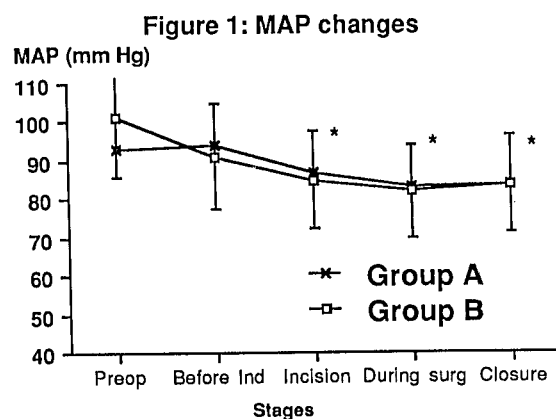
References

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Table 1: Hemodynamic variations and blood loss in the 2 groups

	Group A	Group B
Preoperative MAP (mm Hg)	93 \pm 15	101 \pm 21
Lowest MAP (mm Hg)	83 \pm 21*	82 \pm 20*
Preoperative HR (b/min)	86 \pm 16	82 \pm 17
Lowest HR (b/min)	73 \pm 13	70 \pm 14
Total blood loss (g)	410 \pm 240¶	623 \pm 278
Rate of blood loss (mg/min/kg-Bw)	51 \pm 30¶	78 \pm 24

*significantly different from preoperative value ($p < 0.05$)
¶significantly different from group B ($p < 0.01$)



*significantly different from preoperative value ($p < 0.05$)