

TITLE : ANALGESIA AFTER BREAST SURGERY : A COMPARISON OF INTRAPLEURAL BUPIVACAINE AND INTRAMUSCULAR OPIATE³
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 Mastectomy results in immediate postop. functional disability of the ipsilateral shoulder. Early exercises have been advocated to reverse this dysfunction. Reiestad et al. (1) stated that intrapleural (IPL) analgesia provides good pain relief after mastectomy. This randomized controlled study compared the efficacy of opiate and IPL analgesia on postop. pain and shoulder disability after breast surgery combined to axillary lymph nodes excision.

After approval of our institution ethical committee, 16 fully informed women scheduled for breast surgery (9 tumorect., 7 mastect.) were included in this study. IPL catheter was introduced through the 6th intercostal space using Reiestad's technique (n = 9). A continuous perfusion of bupivacaine (BUP) 0.25 % + Epi 1/400,000 10 ml/h was started after a bolus dose of 20 ml BUP 0.5 % + Epi 1/200,000. The control treatment (n = 7) consists of 15 mg piritramide (Dipidolor^(R)) = DIPI IM PRN (2 mg DIPI = 1 mg morphine). Pain score (VAS), BP and HR were collected before and 30 min after DIPI or BUP as well as 4 h after the end of surgery. All analgesic treatments were interrupted at 6.00 a.m. to allow return of pain. VAS, BP, HR and shoulder disability were measured around 9.00 a.m., before and 30 min after 15 mg DIPI or 20 ml BUP 0.5 % + Epi 1/200,000. Shoulder function was assessed by measuring arm angulation (normal = 180°) during passive and active abduction (PAB-AAB) and antepulsion (PAP-AAP). Data expressed as

mean \pm SEM were analyzed by ANOVA followed by Newman-Keul's test.

DIPI and BUP resulted in a significant decrease of pain score (p<0.01). IPL BUP analgesia produced a significantly (p<0.05) more pronounced pain relief at 4 h after surgery as compared to DIPI :

TABLE 1	0	30 min	4 h	day 1 pre	day 1 post
DIPI	6.0 \pm 0.5	2.0 \pm 0.9	3.5 \pm 2.0	3.9 \pm 0.4	2.0 \pm 0.3
BUP	5.2 \pm 0.9	2.3 \pm 0.8	0.9 \pm 0.3	3.5 \pm 0.4	2.3 \pm 0.3

No significant hemodynamic changes over time were observed in the groups during the observation period. Shoulder motion was significantly decreased (p<0.01) in both groups on day 1 (Table 2a) :

TABLE 2a		PAB	AAB	PAP	AAP
Before An.	DIPI	96° \pm 6°	80° \pm 8°	112° \pm 7°	93° \pm 6°
	BUP	98° \pm 10°	87° \pm 9°	106° \pm 7°	95° \pm 9°

TABLE 2b		DIPI	BUP
After An.	DIPI	114° \pm 7°	97° \pm 6°
	BUP	111° \pm 9°	105° \pm 2°

No significant differences were observed between the 2 groups neither between tumorectomy and mastectomy. Shoulder range motions were significantly (p<0.05) greater during passive as compared to active movements. Only small improvements in movements magnitude were allowed by both analgesic regimens. Table 2b; no significant difference between groups was observed except for PAP.

To conclude IPL BUP appeared to produce a more profound pain relief than DIPI after breast surgery. However IPL analg. does not allow more ample motion of the shoulder as compared to DIPI. The lack of difference between tumorect. and mastect. suggests that pain in the axillary fossa could be the major factor limiting shoulder motion. Finally, adjunction of Epi to BUP does not produce any significant hemodynamic changes in this study.

Reference : 1. Reg. Anesth. 11 : 89-91, 1986

A766

TITLE: INTRA-ARTICULAR MORPHINE PRODUCES ANALGESIA FOLLOWING ARTHROSCOPIC KNEE SURGERY
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Recent evidence indicates that opioids can produce pronounced antinociceptive effects by interacting with local opioid receptors in peripheral inflamed tissue (1,2). This study examined the analgesic efficacy of morphine applied intra-articularly (i.a.) at the completion of arthroscopic knee surgery.

With approval by our human investigation committee and written informed consent 25 ASA I-II patients participated in this randomized double-blind study. All patients underwent arthroscopy under general anesthesia with 0.1 mg fentanyl and isoflurane in N₂O/O₂. Upon completion of surgery, group² 1 (n=14) received simultaneous injections of 1 mg morphine in 40 ml NaCl i.a. and 1 ml NaCl i.v. whereas group II (n=11) received 1 mg morphine in 1 ml NaCl i.v. and 40 ml NaCl i.a.. Post-operative pain was assessed using a visual

analogue scale (VAS), a numerical rating scale (NRS) and an adaptation of the McGill pain questionnaire (MPQ) (3) at 1,2,3,4,6 and 24 h. Supplemental analgesic medication was available as needed. Vital signs, somnolence score and the occurrence of nausea, pruritus or urinary retention were recorded. Comparisons between groups were made using the Mann Whitney U-test.

There were no significant differences in patient demographics between groups. Mean VAS and NRS scores were significantly (p<0.05) higher in group II at 3,4 and 6 h. Total and sensory scale values on MPQ were significantly (p<0.05) higher in group II at 4 and 6 h. Analgesic requirements per 24 h were significantly higher in group II (72.7 \pm 13 mg diclofenac; 15.4 \pm 4.8 mg meperidine) than in group I (21.4 \pm 11 mg diclofenac; 1.57 \pm 1 mg meperidine) (p<0.05). Vital signs and somnolence scores were not different between groups and neither group reported significant side effects.

These data indicate that a low dose of intra-articular morphine can produce significant analgesia (devoid of side effects) reaching an apparent maximum effect between 3 and 6 h post injection.

(1) Anesthesiology 71:A762,1989. (2) J Pharm Exp Ther 248:1269-1275,1989. (3) Pain 32: 251-255,1988.

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