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TITLE: THE EFFECT OF LOWER LIMB TOURNIQUET ON BODY TEMPERATURE IN PEDIATRIC PATIENTS.

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INTRODUCTION: The use of tourniquets for limb surgery is associated with a progressive increase in body temperature in pediatric patients¹. Since malignant hyperthermia is always a concern, we embarked on a controlled prospective investigation to determine the extent of the body temperature (BT) changes with time following the application of a single or double tourniquet.

METHODS: After institutional approval three groups of patients were compared, group 1 (n=15) had unilateral lower limb tourniquets while group 2 (n=15) had bilateral lower limb tourniquets. Group 3, the control group (n=30) had superficial body procedures. Anesthesia was induced by intravenous thiopental or inhalation of a mixture of nitrous oxide, oxygen and halothane, which was also used for maintenance of anesthesia combined with atracurium or vecuronium. A Mapleson F breathing system (Isothermal) with an in-line heated humidifier set to 36°C (Fisher and Paykell) was used for all patients, as was a warming blanket (Blanketrol) set to 38°C. Ambient temperature was set at 21°C and was monitored with a Mallinkrodt Model 8200 electronic thermometer. Intravenous fluids were infused at maintenance rates and were not warmed. No fluid boluses or blood was administered. Intraoperative BT was measured by nasopharyngeal probe. Data were analyzed using analysis of variance and unpaired t-tests. A p<0.05 were considered to be statistically different.

Results: There were no statistical differences between the groups with respect to age, height, body surface area (BSA), the average temperatures of the operating room, heated blanket, humidifier and initial patient BT. Tourniquets time in group 1 was 102.9±35 minutes and 77.5±40 minutes in group 2. The duration of anesthesia in group 3 was 137.3±60 minutes. Both groups 1 and 2 showed a statistically significant increase in temperature with time compared to group 3 (fig 1). Tourniquet induced changes in BT were more pronounced in infants less than 2 years old than older children. An inverse relationship was found between the increase in BT and patient height and weight. The mean decrease 15 minutes after tourniquet deflation was 0.31±0.23°C and 0.56±0.47°C in groups 1 and 2 respectively with no statistical difference between groups.

Conclusion: A progressive rise in intraoperative BT may be anticipated following the inflation of either a single or double tourniquet.

Reference

1. Annals of the Royal College of Surgeons of England, 1986;193-4.

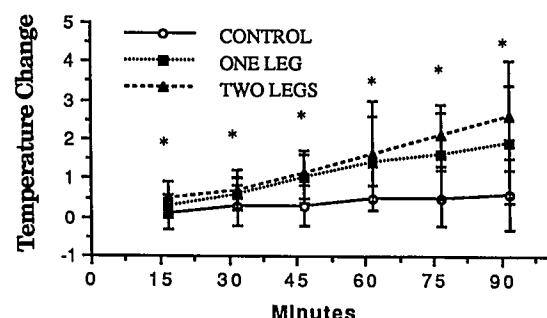


Fig 1 * p<0.05 when group 1 and 2 are compared to group 3

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TITLE: COMPARISON OF LORAZEPAM TO DROPERIDOL AS AN ANTIEMETIC IN CHILDREN UNDERGOING STRABISMUS OPERATIONS ON OUTPATIENT BASIS

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The incidence of post-operative vomiting (P.O.V.) is high after strabismus operations. P.O.V. can lead to patient discomfort and prolongation of recovery. Droperidol (D) 75 ug/kg has been recommended to be used prophylactically as an antiemetic in children undergoing strabismus operations¹. But, D may lead to dysphoria, agitation, extrapyramidal symptoms and may prolong recovery. Lorazepam (L) has been used as an antiemetic in patients receiving chemotherapy². The objective of the study was to evaluate the prophylactic use of L as an antiemetic and compare it to D, in children undergoing strabismus operations on outpatient basis.

Institutional approval and written parental informed consents of 104 children Class I & II ASA physical status, age 1-12 yrs. were obtained. The study was double blinded and the children were randomized into one of three groups. The children received: (I) D 75 ug/kg, (II) L 10 ug/kg or (III) placebo (P). In the O.R. after applying the standard monitors, anesthesia was induced by inhalation of halothane and 60% nitrous oxide in oxygen. Atropine 20 ug/kg, 2cc study drug and atracurium 0.5 mg/kg were administered I.V. No other narcotics, sedatives or antiemetics were given. Ventilation was mechanically controlled. At the end of the operation the stomach was decompressed, residual muscle weakness was reversed using atropine and neostigmine and the children were extubated when they regained their protective upper airway reflexes. Acetaminophen 15 mg/kg was administered rectally for pain relief. P.O.V. was evaluated at the hospital and at home. The occurrence of post-operative agitation was also noted.

The groups were similar in number, age, sex, weight, duration of anesthesia and duration of surgery (one way analysis of variance).

	% POST-OPERATIVE VOMITING				% AGITATION
	No.	Hosp.	Home	Both	
D =	32	9.7	26.7	33.3	31.2 *
L =	34	23.5	16.1	32.3	5.9
P =	38	22.2	30.3	40.0	10.5

*(P< 0.010) (contingency table analysis)

There is no significant statistical difference in the incidence of P.O.V. between the groups. The incidence of post-operative agitation was significantly higher in the D group.

References

1. ANESTHESIOLOGY, 65:322-325, 1986.
2. JOURNAL CLINICAL ONCOLOGY, 3:864-869, 1985