

TITLE: INDUCTION OF ANESTHESIA WITH DESFLURANE: A COMPARISON OF CONVENTIONAL (C) AND VITAL CAPACITY RAPID INHALATION INDUCTION (VCRII) TECHNIQUES

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VCRII was popularized with cyclopropane and has recently reemerged as an alternative technique with halothane and isoflurane¹. However, the airway irritation of these anesthetics has prevented widespread use of VCRII. We report our experience with this technique using desflurane(D).

After receiving IRB approval and written consent, 22 ambulatory patients were randomized to receive anesthetic induction with either C technique (0.5 MAC desflurane in incremental doses every 3 - 5 breaths) or a VCRII with 2-4 MAC desflurane, (all in a mixture of 60% N₂O / 40% O₂). Time(TL) was measured from the first desflurane breath until loss of response to command (LOC). Inspired(D_I-LOC) and end-tidal concentrations of desflurane at LOC(D_E-LOC) were recorded. Patients were interviewed by a blinded observer the first postoperative day and a patient acceptability score of 1 (unpleasant) to 10 (pleasant) was elicited.

19 of 22 patients experienced mild to moderate coughing and one patient (VCRII group) experienced brief laryngospasm not requiring treatment. The data are summarized in Table 1.

Table 1	C (N=10)	VCRII (N=12)	P
Age (years)	49.1 (31-72)	54.8 (26-75)	
Weight (kg)	81.5 (66-93)	82.9 (61-115)	
TL (sec)	113.5 (81-148)	46.4 (30-75)	0.01
Anes time (min)	24.7 (16-33)	32.9 (18-61)	
Acceptability	7.3 (3.5 - 10)	5.3 (1-10)	
%D _I -LOC	14.9 (9.0-22)	18.8 (14-28)	0.05
%D _E -LOC	10.9 (16.5-18)	12.8 (8.2-18)	

All values are mean (range). D = desflurane

Anesthetic induction was significantly faster with VCRII when compared to C. There was no difference in the frequency of coughing although the incidence is high due to the pungency of desflurane. Significantly higher concentrations of desflurane at LOC were attained with the VCRII technique, however, further investigation of optimal concentration for the VCRII technique is necessary. A rapid smooth induction with desflurane may obviate the need for intravenous adjuncts with their residual side effects. Thus this technique may prove useful in the ambulatory population to hasten recovery and discharge; further investigation is ongoing.

1. Anesth. Analg. 1987; 66:776-8.

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TITLE: GENERAL VERSUS REGIONAL ANESTHESIA FOR INGUINAL HERNIORRHAPHY

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Hernia repair can be performed under general or regional anesthesia. This study investigates the hemodynamic changes, economic impact, and recovery events during herniorrhaphy under general anesthesia (GA) and regional field block (RB).

METHODS: Twenty informed, consenting ASA I patients were entered in this institutionally-approved study. Patients were divided into 2 groups, GA and RB. In the GA group, anesthesia was induced with thiopental 4-6 mg/kg, the trachea was intubated with vecuronium 0.08 mg/kg intravenously, and ventilation was controlled to maintain P_ECO₂ at 36±2 mmHg. GA was maintained with enflurane, 1.2±0.25% in 50% nitrous oxide and oxygen. Anesthesia in the RB group was accomplished by 3.5±0.5 mg/kg 0.5% bupivacaine. ECG and BP were recorded. In each patient a suprasternal ultrasonic doppler probe (Accucom, Datascope Corp) was used to measure cardiac output (CO). Total peripheral resistance (TPR) was calculated from mean arterial pressure (MAP) and CO.

The reported mean ± SD are calculated from triplicate measurements: 1) before anesthesia (control); 2) after induction of anesthesia;

3) immediately after incision; 4) 5, 10, 15, 30 and 45 min after incision; 5) 10 min after termination of surgery and recovery from GA. A repeated measure ANOVA was used to compare changes between groups and across time.

RESULTS: Study groups were comparable with respect to age, weight, height, body surface area, aortic root diameter, body temperature, and intravenous fluid therapy. There was no statistically significant difference between CO, MAP, TPR, and heart rate in 2 groups at any time period (Summary Table).

DISCUSSION: Our study indicates that hemodynamic effects of GA and RB in ASA I patients are not different. Patients in the GA group received 8-10 mg morphine intravenously for postoperative pain relief and 3 had severe nausea. Patients in the RB group were transferred to the ambulatory service and did not receive any postoperative treatment and did not require anesthesiologist or recovery room fees, thus the total cost to these patients was less.

TABLE

	Group	Control	Incision	45' Post Incision	10' Post Surgery
CO	GA	6.6±0.3	6.4±0.3	5.9±0.3	7.0±0.3
L/min	RB	5.5±0.3	5.3±0.3	5.1±0.3	5.5±0.3
MAP	GA	100±3	98±3	87±3	100±3
(mmHg)	RB	90±4	88±4	85±4	81±4
TPR	GA	1239±66	1326±66	1231±66	1234±66
(dyne.sec)	RB	1274±79	1347±79	1237±79	1222±79
					cm ⁻⁵
Heart rate	GA	74±2	76±2	72±2	79±2
	RB	64±3	64±3	64±3	67±3