

Title: AWAKE NASOTRACHEAL INTUBATION:
A COMPARISON OF THREE DIFFERENT
TECHNIQUES.

Authors: M.Abou-Madi, m.d. D. Trop, m.d.
R. Falkenstein, m.d.

Affiliation: Department of Anesthesia, Montreal
Neurological Hospital & Institute
McGill University, Montreal, Quebec
Canada H3A 2B4

INTRODUCTION: The three most common methods of securing awake nasotracheal intubation are fiberoptic assisted (FO), retrograde guided (RG) and blind nasal (BN). This study seeks to compare these techniques for their duration; effect on heart rate, arterial pressure and oxygen saturation; and incidence of complications (including failure).

METHODS: After institutional approval, thirty six cervical stenosis or unstable cervical spines requiring operation were randomly assigned to receive one of the three techniques. Patients received standardized premedication and topical anesthesia. Mean arterial pressure, heart rate and oxygen saturation were recorded prior to and at several points during the procedure. The incidence and nature of any complications were noted.

RESULTS: Mean values for each result were calculated for the different groups. Group demographics (age, sex, weight, cervical pathology and associated medical conditions) were not different. All patients have suffered from mild to moderate hypertension. Results showed no significant differences in duration of attempts at intubation. Hemodynamic responses elicited were comparable among the three groups, except for a higher and sustained heart rate response to FO. Oxygen saturation was well maintained throughout each technique except for a significant drop during attempts at intubation in the BN group. This drop undoubtedly influenced the hemodynamic response during this period and was influenced by the number of failed intubations (four) in the BN group. Each technique was associated with a significant number of nasal bleeds intraoperatively.

DISCUSSION: A higher failure rate of BN in this study may be influenced by the necessity of avoiding changes in head position in these patients but also is consistent with previously reported incidences of failure of this technique.¹ These results suggest tachycardia may be greater in magnitude and duration in response to the FO. RG has been notably free of significant complications or failure.

REFERENCE: 1. Can.J.Anesth 37: 77-93, 1990

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TITLE: CEREBRAL PERFUSION PRESSURE DURING
ORTHOTOPIC LIVER TRANSPLANTATION FOR
LIVER ACUTE FAILURE.

AUTHORS: P. ALBALADEJO M.D., E. JUGAN M.D.
M. DAIBES M.D., C. ORLOFF M.D.
C. ECOFFEY M.D.

AFFILIATION: Anest. Dept., Université Paris-Sud, Hôpital
P.Brousse, 94804-Villejuif, FRANCE.

The management of orthotopic liver transplantation for acute liver failure includes the control of intracranial pressure (ICP). Few data are available on the ICP during liver transplantation for acute liver failure (1,2). We studied variations of ICP and cerebral perfusion pressure (CPP = mean arterial pressure - ICP) during the different stages of OLT.

Eight patients aged 37 ± 13 yrs (mean \pm SD) were studied after approval by our institutional investigation committee. All were anesthetized with thiopental (5 mg.kg⁻¹) and fentanyl (10-12 μ g.kg⁻¹.h⁻¹). Vecuronium was given for muscle relaxation. Anesthesia was maintained with thiopental (2-3 mg.kg⁻¹.h⁻¹). They were mechanically ventilated with a 40% oxygen-air mixture. Tidal volume and respiratory rate were varied to keep end-tidal CO₂ tension between 30 to 35 mmHg. ICP was monitored using a CAMINO system (CAMINO laboratories, San Diego) with an extradural optical probe via a fronto-parietal burr hole. During the anhepatic stage, all patients were connected to a veno-venous bypass. In order to prevent increase in ICP, the flow rate of the bypass was progressively increased within 20 min. ICP was kept as low as possible and overall CPP greater than 50 mmHg, using

injections of mannitol 25% and/or furosemide. ICP, mean arterial pressure (MAP) and CPP were recorded at following times: at incision, during the anhepatic stage, 10 and 60 min after unclamping the vena cava and the portal vein. Statistical analysis was performed using repeated measures ANOVA followed by appropriate post-hoc tests ($p < 0.05$ was considered significant). Results are expressed as mean \pm SD.

Results are summarized in the table. MAP, ICP and CPP decreased significantly 10 min after unclamping, and the last remained decrease at 60 min. No complication due to the ICP transducer probe and no primary non function of the liver were observed.

In conclusion, the decrease in CPP following the postreperfusion phase is due to a decrease in MAP. Therefore, the MAP must be maintained following unclamping to avoid a decrease in CPP below 50 mmHg.

References:

- 1-Transplant. Proc., 21, 3528, 1989
- 2-Anesthesiology, 70, 139-141, 1989

Table: Results (mean \pm SD)

	INCISION	ANHEP.	10 min	60 min
MAP (mmHg)	98 \pm 31	101 \pm 24	68 \pm 11*	75 \pm 14
ICP (mmHg)	10 \pm 8	14 \pm 10	8 \pm 4*	9 \pm 4
CPP (mmHg)	88 \pm 31	87 \pm 26	60 \pm 11*	66 \pm 13*

* $p < 0.05$ vs ANHEP.