

GENERAL ANAESTHESIA CONTROL MODE VERSUS LOCAL ANAESTHESIA WITH INTRAVENOUS SEDATION FOR DAY CARE LAPAROSCOPIC TUBAL LIGATION

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ABSTRACT

Comparative study has been undertaken to evaluate the anaesthetic techniques either by General anaesthesia with control mode (GA) or Local anaesthesia with intravenous sedation (LA) in laparoscopic tubal ligation in 60 female patients in the age group of 20 to 30 years. All were American Society of Anaesthesiology grade 1 & divided equally into two Groups of 30 each. Group with GA has longer induction to skin incision time ($p < 0.001$) and higher incidence of post operative nausea and vomiting than Group with LA ($p < 0.001$).

KEY WORDS: Anaesthesia, intravenous sedation, Laparoscopic tubal ligation

INTRODUCTION

At present, tubal ligation by laparoscopic method is most common procedure and has advantages in high success rate and early return to normal activity, so appropriate anaesthetic technique should be chosen. The General Anaesthesia (GA) with control is associated with side effects like nausea and vomiting. Although the quality provides by Local Anaesthesia (LA) with sedation is unsatisfactory due to discomfort and contraction abdominal muscles, it offers the advantage of patient being awake, oriented, breathe spontaneously and avoiding the need of keeping patient in post anaesthesia recovery room for more time.

The objective of study was to determine either GA with control or LA with IV sedation anaesthetic technique is better for laparoscopic tubal ligation.

MATERIALS AND METHODS

Sixty female patients of American Society of Anaesthesiology grade I, aged between 20 and

30 years were randomly taken for laparoscopic tubal ligation. They were further divided into two groups of 30 each. The study was undertaken between January 2009 and December 2010 at Kesar SAL Medical College, Ahmedabad, India. Anaesthetic technique was GA with control mode in group I, and LA with IV sedations was in group II. All patients were fasting overnight and pre-medicated with Fentanyl 1 $\mu\text{g}/\text{kg}$ and Metoclopramide 10 mg, 30 minute before induction of Anaesthesia.

During operation, ECG special lead-II, oxygen saturation, Non Invasive Blood Pressure monitoring was observed. In group I, GA was given with IV propofol-3mg/kg, Scoline 1mg/kg and intubated with appropriate size of endotracheal cuff tube (Portex) and maintained on Halothane (0.5% to 1%), oxygen and Nitrous Oxide & put on control mode. In group II, patients received IV Midazolam 0.07mg/kg, Ketamine 0.5 mg/kg. The incision site was infiltrated with LA 10 ml of 1.5% Lignocaine with Adrenaline (1:20, 1000). Induction to incision time, volume of CO₂ insufflates, intra abdominal pressure apart from vital signs were

noted. The duration of surgery, recovery time, intra-operative and postoperative complications were also recorded. Appropriate statistical test applied and "p" value <0.05 was considered as significant.

OBSERVATIONS

The incidence of intra-operative bradycardia was 16.7% in group I and 10% in Group II and

statistically insignificant. The changes in SpO₂ during procedure and recovery were comparable in both the groups. The incidence of postoperative nausea and vomiting were more in Group with GA than Group with LA (Table 2). Postoperative analgesia required in group with GA only. The induction to skin incision time was more in Group with GA than Group with LA (Table3).

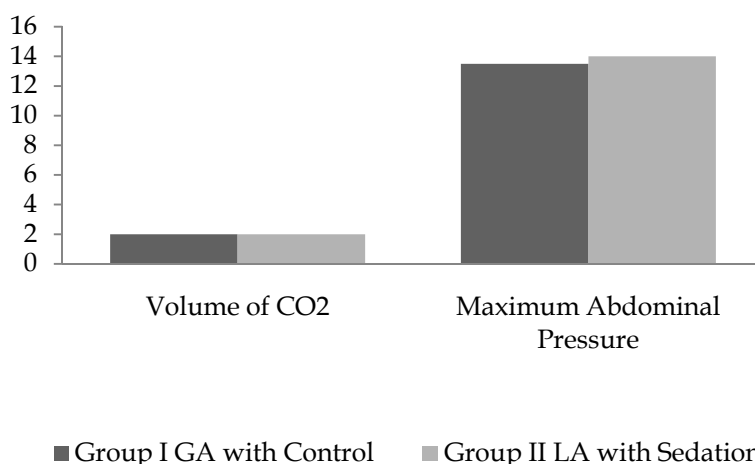


Figure 1: Comparison of Volume of CO₂ & Maximum Abdominal Pressure

Table 1: Comparison of Pulse Rate between Two Groups at Different Time Intervals Intra-operatively

Time Interval	Group with GA Mean±SD	Group with LA Mean±SD	P Value
5 Minutes	85.63±9.63	96.43±9.61	0.001*
15 Minutes	79.03±10.94	95.53±14.37	0.001*
25 Minutes	80.05±14.70	92.57±12.90	0.015*
35 Minutes	95.60±24.57	96.00±10.44	0.980

P Significant < 0.05 *Significant Value

Table 2: Comparison of complications between the two studied groups

Complication	Group I GA with Control	Group II LA with Sedation	P value
Nausea	6(20%)	1(3.3%)	0.001
Vomiting	10(33.3%)	2(6.6%)	0.001

P Significant < 0.05

DISCUSSION & CONCLUSION:

Tubal ligation can be performed under LA with sedation¹ and its effectiveness has been debated.² Though, GA has been recommended for tubal ligation to reduce the complication³ but

it may not be safe technique due to its complications.^{4,5} High induction to skin incision time in Group I with GA than Group II with LA was attributed to time required for induction of GA and insertion of endo-tracheal cuff tube and it was similar to Swann *et al.*⁶

The decrease in heart rate in Group I with GA can be attributed to Propofol which blunts the pressure response to surgical stimulus and causes reduction in blood pressure without compensatory increase in heart rate.^{7,8} The higher incidence of postoperative nausea and vomiting in GA is more in gynaecological procedures as earlier studies.⁹ Bordahl *et al.*¹⁰ have reported a higher incidence of abdominal

pain in GA than LA with I.V. sedation. Comparative study undertaken suggests that longer induction to skin incision time and higher incidences of post operative nausea and

vomiting in group I with GA makes LA with I.V. sedation is choice of anaesthesia technique for laparoscopic tubal ligation.

Table 3: Comparison of induction time & duration of surgery in studied groups

Group	Group I GA with Control±SD (Minute)	Group II LA with Sedation±SD (Minute)	P Value
Induction Time	5.13±0.93)	3.01± 1.86	0.001
Duration of Surgery	21.53±5.56	21.56±6.63	0.983

P Significant < 0.05

Induction time: from giving I.V. drug to skin incision

REFERENCES:

1. Cruikshank DP, Laube DW, DeBacker LJ. Intraoperative ligation anaesthesia for postpartum tubal ligation. *Obstet Gynecol* 1973; 42: 127-30
2. Practice Guidelines for obstetrical Anaesthesia: a report by the American Society of Anaesthesiologists' Task Force on Obstetrical Anaesthesia. *Anaesthesiology* 1999; 90: 600-11
3. Peterson HB, Hulka JF, Spicemen FJ et al. Local Vs General Anaesthesia for laparoscopic sterilization: A randomized study. *Obstet Gynecol* 1987; 70: 903-8
4. Case fatality: Peterson HB, destefano F, Greenspan JP, Ory HW. Mortality risk associated with tubal sterilization in United States hospitals *Am J Obstet Gynecol* 1982; 143: 125-9
5. Peterson HB, DeStefano F, Gubin GL, et al, Deaths attributable to tubal sterilization in the United States, 1977 to 1981. *Am J Obstet Gynecol* 1983; 146: 131-6
6. Swan DG, Spens H, Edward SA, Chestnut RJ. Anaesthesia for Gynaecological laparoscopy - A comparison between the LMA and Endotracheal tube. *Anaesthesia* 1993; 48: 431-34
7. Short CE, Bufalari A. Propofol Anaesthesia. *Vet Clin North Am Small Anim Prct* 1999; 29: 474-78
8. Reves JG, Glass PSA, Lubrasky DA, McEvoy MD, Martinez-Ruiz R. Intravenous anaesthesia. In Miller RD, editor. *Miller's Anaesthesia*. Philadelphia: Churchill Livingstone 2010: 725
9. Chui PT, Gin T, Oh TE. Anaesthesia for Laproscopic general surgery. *Anaesth Intensive Care* 1993; 21: 163-171
10. Bordahl PE, Reader JC, Nordentoft J et al. Laproscopic sterilization under local or general anaesthesia? A randomized study. *Obstet Gyne col* 1993; 81: 137-141.