

The Baska Mask trial in patients undergoing laparoscopic cholecystectomies

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Abstract- The Baska Mask(Logical health products pty ltd.) is a second generation supraglottic airway device. The debate still exists whether a third generation should be introduced or not. It may be suggested that the Baska classifies itself as a 3rd generation airway device. Our study aims to see the ease of insertion of the device along with other haemodynamic pattern variability and the overall success of the device.(1,2)

Index Terms- Baska Mask, Second generation device, Supraglottic airway

I. INTRODUCTION

Kanag and Meenakshi Baska are the inventors of this mask which was first used in Australia. The innovations in the Baska mask include the following. It has a non inflatable anatomically shaped cuff which prevents tissue damage due to overinflated cuff and also nerve damage. However it is different from other non inflatable cuffs as the central channel continues to run through it. This leads to improvement in the seal reducing leak and making ventilation more efficient, as the air during positive pressure ventilation inflates the cuff and seals the airway.(3,4)

There is an inlet which rests atop the upper oesophagus where the dorsal surface is moulded in such a way that any oropharyngeal contents are directed away from the inlet into the side channels to which suction can be attached and the contents sucked out. An integral bite block is present which makes the airway patent at all times. An extended hand tab is attached to the cuff of the device, which on pulling post insertion gives the airway a better fit and the mask a better seal. It is made of hypoallergenic silicone latex polymer with adequate shore hardness. The mask can be easily inserted in the head neutral position. It comes in four sizes.(2)

II. AIM

My study intends to evaluate the mask in terms of its ease of insertion, success rate and haemodynamic changes in 40 patients undergoing laparoscopic cholecystectomies.

III. MATERIALS AND METHODS

The study is single blinded. 40 patients belonging to ASA grade 1, posted for laparoscopic cholecystectomies were randomised and selected. The inclusion criterion consisted of a BMI ranging between 25 to 35, non urgent surgery, ASA 1 and duration of surgery less than 2 hrs. Exclusion criterion consisted of full stomach patients, non laparoscopic cholecystectomies, refusing to give informed consent, pregnant patient and patients having difficult intubation and surgeries lasting for more than 2 hrs.(2,5)

Preanaesthetic check and patient selection was done at the PAC clinic when the patient was posted for surgery and a review was done the night prior to the surgery. Premedication with diazepam 5mg was given night prior to surgery.

On the day of surgery, the patient was premedicated with IV Ranitidine and IV Metocloperamide. Inj. Fentanyl 2 microgms /kg, Inj Midazolam 2ml, Ing Ondansetron 2 mg and Inj. Glycopyrrolate 0.02mg/kg were given IV. Monitoring included NIBP, SpO₂, eTCO₂, ECG and Heart Rate. Induction of anaesthesia was done by IV propofol 2mg/kg following which bag and mask ventilation with Oxygen and nitrous oxide in 50:50 ratio was done for 3 mins. After inducing, the Baska was inserted and fixed maxilla to maxilla, by a single investigator in all the patients. After failure of first attempt, 2 more attempts were taken failing which, the ET tube was inserted and the case abandoned from the study. The time taken to insert the device was noted and the haemodynamics were monitored every 30 seconds till 5 mins after insertion. The mask was attached to the closed circuit and anaesthesia was delivered using isoflurane with titrated MAC. Oxygen and Nitrous oxide were continued for maintenance. A Ryles tube was inserted from the suction port and fixed. After completion of surgery the device was removed after suctioning from the suction port.(6,7,8)

The mask size chosen was based on the patients weight as per manufacturer’s instructions. If upon inserting, the device did not function properly, the depth of insertion was increased, the cuff tab was pulled and the device rotated and then the device was slightly pulled out. All the observations were recorded by an unblinded observer.

IV. RESULTS

The following results were obtained for the study conducted over 60 days. Data was collected and formatted in a tabular form. The statistical analysis was done using SPSS software and a p value of <0.05 was considered significant

Demographics

Age	38.64	P – value : 0.26
BMI	28.78	0.53
Sex M	18	0.55
F	22	0.67

Duration of insertion : Median

Median duration of insertion	6 seconds (p – value : 0.043)
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Number of attempts

Number of attempts		P – value
1	37	0.027
2	3	
3	0	

Heart Rate : Mean (S.D +/-20)

insertion	83.55
1/2 min	82.45
1 min	82.67
2 min	82.30
3 min	81.03
4 min	81.01
5 min	80.6

Systolic Blood Pressure : Mean(S.D +/-20)

insertion	122
1/2min	122
1 min	121
2 min	122
3 min	121
4 min	120
5 min	120

Diastolic Blood Pressure : Mean(S.D +/-20)

insertion	78
½ min	79
1 min	79
2 min	78
3 min	77
4 min	77
5 min	77

MAP : Mean(S.D +/-20)

insertion	90
½ min	90
1 min	91
2 min	91
3 min	91
4 min	92
5 min	92

SpO2 : Median(S.D +/-20)

insertion	100
½ min	100
1 min	100
2 min	100
3 min	100
4 min	100
5 min	100

EtCO2 : Mean(S.D +/-20)

insertion	28
½ min	29
1 min	29
2 min	30
3 min	30
4 min	30
5 min	30

V. DISCUSSION AND ANALYSIS

After completion of the study it was found that the Baska mask functions reasonably well for patients undergoing laparoscopic cholecystectomies in general anaesthesia. The ease of insertion was assessed by the duration of insertion which was 5 seconds. The duration was measured from insertion of the mask to beginning of ventilator. The p value for the same was found to be significant (0.043)

The number of attempts were increasingly singular with only three patients requiring double attempt and none having had the need for a 3rd attempt. The p – value of the same is found to be 0.027.

The haemodynamics remained stable throughout the insertion and the sPO₂ as well as EtCO₂ showed values within the normal range. A mean for all the intervals was taken. The p values for the same were within 1 but not highly significant.

In a nutshell, the Baska is befitting of being a successful supraglottic airway device and if at all a third generation classification may be introduced, it would certainly be inclusive of the same.

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