Original Article

Comparative evaluation of self-pressurized Air-Q® and Proseal™ LMA® in patients undergoing elective surgery under general anaesthesia: A randomized clinical trial

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Abstract

Background and Aims: Intra-cuff pressure of Air-Q self-pressurized laryngeal airways (Air-Q SP) balances airway pressure and adapts to patient's pharyngeal and periglottic structures, thus improves oropharyngeal leak pressure (OLP).This study was performed to compare efficacy of Air-Q SP with Proseal laryngeal mask airway (PLMA) in patients undergoing elective surgery.

Material and Methods: The study design was prospective, randomized and controlled. Ninety patients were randomly assigned to Air-Q SP or PLMA group. All patients were premedicated and shifted to operation theatre. Monitoring was instituted. After securing IV-line, induction with inj. Morphine + Propofol, relaxation with inj. Vecuronium was done. Supraglottic was inserted according to group allocation. Outcome measures were OLP, fibreoptic view of larynx, success rate, device insertion parameters, haemodynamic and respiratory parameters and post-operative laryngopharyngeal complications. Neostigmine + glycopyrrolate were given, device was extubated.

Results: All supraglottic airway devices (SADs) were successfully placed in two attempts. The mean initial OLP, OLP at 10 minutes, and device insertion time were significantly lower in Air-Q SP group. Fiber-optic laryngeal view grading was significantly better with Air-Q SP. No significant difference was observed with respect to rate of successful insertion in first attempt, ease of insertion, and manipulations required. The hemodynamic/respiratory parameters and post-operative sore throat in the two both groups were similar.

Conclusions: Proseal LMA has a higher OLP than Air-Q SP but average insertion time was better, and fiber-optic grading of laryngeal view was shorter with Air-Q SP. However, Air-Q SP and Proseal LMA were both effective for lung ventilation.

Keywords: Air-Q SP, oropharyngeal leak pressure, Proseal LMA

Introduction

Novel supraglottic airway (SAD) devices are available with new features. The self-pressurized Air-Q laryngeal airway (Air-Q SP) (Mercury Medical, Clearwater, FL, USA) is next-generation Air-Q and can be used as an effective primary airway device for maintenance of anaesthesia and as a conduit for endotracheal intubation.[1,2]

The Air-Q SP is different from the Air-Q as it does not require cuff inflation. An internal opening at the junction of the airway tube and the mask cuff allows self-regulating cuff inflation. The cuff pressure in Air Q SP is determined by

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the airway pressure. Air-Q SP allows the optimal airway sealing at lower pressure levels and reduces the risk of laryngo-pharyngeal morbidity as seen with traditional SAD with an inflation system.[2-4] Previous studies have documented the efficacy of Air-Q SP as an airway maintenance device[5] and as a tracheal conduit for paediatric and adult patients.[4,6-8] No comparative studies with Air Q SP in adult patients were observed in detailed literature search.

The Proseal laryngeal mask airway (Proseal LMA) (LMA North America, Inc., San Diego, CA, USA) is second-generation SAD with its superior ability for airway sealing even under high peak airway pressures. Although Air Q SP is a novel device, it has similar features like Proseal LMA.[9-11]

The objective of this study was to evaluate the clinical performance of Air-Q SP in comparison to Proseal LMA in adult patients. The primary outcome was oropharyngeal leakage pressure (OLP), and the secondary outcome variables were device insertion time, fibreoptic grading of laryngeal view, hemodynamic and respiratory parameters, and complications.

Material and Methods

Before conducting the study, we received approval from the Institutional Ethics Committee and registered the trial at the Clinical Trial Registry India (CTRI), vide number CTRI/2018/02/011737/1.12.17. Written informed consent was obtained from 90 patients with ASA I or II; adult patients (18–60 years) planned elective surgery under general anaesthesia.

Patients were excluded if they had a history of neck radiotherapy with hypopharynx, a history of upper respiratory tract infection, or a contraindication to the use of LMA, such as a known or predicted difficult airway (airway difficulty score >8),[12] body mass index (BMI) >35 $kg.m^{-2}$, or increased risk of regurgitation and aspiration of gastric content and pregnant patients.

The study design was prospective, randomized, and controlled. Using a computer-generated random number table, 90 patients were randomly assigned to the Air-Q SP or Proseal LMA group. Randomization was performed by an anaesthesiologist who was not involved in the insertion of SAD, anaesthesia, or the evaluation of results. An Air-Q SP or Proseal LMA of an appropriate size was chosen in accordance with the manufacturers' recommendations, with sizes of 2.5, 3.5, and 4.5 for Air-Q SP and sizes of 3, 4, and 5 for Proseal LMA corresponding to the patient's weight of 30–50 kg, 50–70 kg, and 70–100 kg, respectively.

All patients received oral pre-medication of alprazolam 0.25 mg and ranitidine 150 mg the night before surgery and 60 minutes before the scheduled time of surgery. Standard monitors, including continuous EKG, heart rate (HR), non-invasive blood pressure (NIBP), oxygen saturation (SpO_2), end-tidal carbon dioxide ($EtCO_2$), and respiratory parameters (compliance, resistance, minute ventilation peak airway pressures) using spirometry (Aespire View; GE Healthcare, Madison, WI, USA), were placed before induction of anaesthesia. An intravenous line was started, and the patients were pre-medicated with glycopyrrolate 0.2 mg and midazolam 0.04 $mg.kg^{-1}$ intravenously, 5 minutes before induction of anaesthesia.

All patients received the standard anaesthesia technique. After a 3 min pre-oxygenation, anaesthesia was induced with morphine (0.1 $mg.kg^{-1}$), propofol (2.0–2.5 $mg.kg^{-1}$), and vecuronium (0.1 $mg.kg^{-1}$) administered to facilitate muscle relaxation. After loss of consciousness, the lungs were manually ventilated with a conventional mask and an adequate depth of anaesthesia, and muscle relaxation was achieved. Immediately, according to the group allocated, the SAD was inserted.

The assigned Air-Q SP or Proseal LMA was lubricated with water-based gel before placement. Both devices were inserted in accordance with the manufacturer's recommendations using the standard non-rotating mid-line approach for Air-Q SP and the introducer method for Proseal LMA by the anaesthesiologist. These anaesthesiologists had an experience of more than 25 SAD insertions with both Proseal LMA and original Air-Q. Before insertion of Proseal LMA, the cuff was completely deflated and shaped with a metal introducer. After insertion, Proseal LMA was inflated to the optimal intra-cuff pressure of 60 cmH_2O using a manual pressure gauge (VBM Medizintechnik GmbH, Germany).

A maximum of two attempts to insert the device was allowed. Successful placement was identified by the presence of a normal thoracoabdominal movement and a square wave EtCO2 capnography trace. If ventilation was insufficient, the following manipulations were carried out: gently pushing or pulling on the SAD, head neck flexion or extension, and jaw thrust.[13] In case of failure to insert the SAD, the endotracheal tube was inserted by the attending anaesthesiologist after doing laryngoscopy. The ease of insertion of the two devices was recorded based on the following grading: Grade 1, "very easy"; Grade 2, "easy"; Grade 3, "difficult"; and Grade 4, "very difficult".[14] The number of insertion attempts was recorded. The time required for insertion was defined as the time between the removal of the facial mask and the appearance of the first trace of square wave capnography.

The OLP was determined by temporarily stopping ventilation and adjusting the pressure limiting valve to 40 cm H_2O with a fresh gas flow of 3 L min^{-1} and the ventilator (Aespire View; GE Healthcare, Madison, WI, USA) in the "manual" mode until airway pressure reaches steady state. The OLP was defined as the point at which a stable state of the airway pressure was reached[15] and measured with the spirometer and ventilator's pressure gauge. Simultaneously, an auscultation was performed on the epigastrium with a stethoscope to detect the appearance of gastric insufflation. The OLP was measured immediately after insertion and at 10 minutes.

A flexible fibreoptic bronchoscope (Pentex Corporation, medical division, Singapore) was used to visualize the anatomical alignment of the device with the larynx, 1 cm near the opening of the airway orifice. The fiber-optic laryngeal view was noted as 4 = only the vocal cords are visible, 3 = vocal cords plus posterior epiglottis visible, 2 = vocal cords plus anterior epiglottis visible, and 1 = vocal cords not visible. Adjusting manoeuvres to obtain optimum fibre-optic view (4 or 3) of larynx was undertaken and recorded.[13,16]

The patients' lungs were ventilated for effective oxygenation and ventilation using the pressure-controlled mode. The appropriate ventilation was when SpO_2 was ≥95% and $EtCO_2$ was 35–40 mmHg using a flow of fresh gas of 2 L. min^{-1} with a respiratory rate of 10–16 min^{-1}. The tidal volume was set at 8 to 10 $ml.kg^{-1}$. Anaesthesia was maintained with a final tidal concentration of isoflurane (1–1.5%) and 60% nitrous oxide in oxygen. Approximately 15 min before the end of anaesthesia, patients received diclofenac sodium 1.5 $mg.kg^{-1}$ by slow intravenous infusion and ondansetron 0.1 $mg.kg^{-1}$ intravenously to reduce pain and vomiting, respectively. After the surgery was completed, isoflurane was discontinued and the residual neuromuscular blockade was reversed with neostigmine and glycopyrrolate at the doses of 0.05 $mg.kg^{-1}$ and 0.01 $mg.kg^{-1}$, respectively, in combination. The SAD was removed when the patient was awake and resumed spontaneous breathing in case the Proseal LMA cuff deflated before removal.

Complications were recorded at different moments of time, that is, during device insertion and during maintenance of anaesthesia. The desaturation (SpO_2 < 90%), airway obstruction, coughing, airway manipulation, and blood staining on the device after removal were noted and considered as complications.

After the operation, an independent observer, blinded to the group allocation, assessed the patient for sore throat, hoarseness, dysphagia, or any other undesirable effect at zero hour (when the patient is conscious, responds to verbal commands and has stable hemodynamic parameters) before discharge from the post-operative care unit and after 2 hours and after 24 hours, post-operatively. Sore throat was graded to mild, moderate, and severe by asking patients after the operation.

The patient's ventilatory parameters (peak airway pressure, minute ventilation, resistance, and compliance) and hemodynamic parameters (HR, NIBP) were recorded 1, 2, 3, 4, 5, and 10 min after insertion, at removal of the device, and after 10 min. All observations were recorded on the proforma attached and were analysed statistically using the appropriate statistical test.

Our sample size was based on the results of previous studies[2,17] where the OLP of Air-Q SP was 23 ± 7.5 and that of Proseal LMA was 29 (23–38) cmH_2O. With a difference of 6 cmH_2O in the OLP and a standard deviation of 8 cmH_2O, the sample size was 38 patients per group with a power of 90% and a confidence interval of 95%. Forty-five patients in each group were recruited to compensate for a dropout rate of 20%.

The data were analysed using IBM SPSS STATISTICS (version 22.0). Discrete categorical data were represented by number or percentage (%); continuous data, assumed to be normally distributed, have been written either as the mean and standard deviation or as the median and inter-quartile range, as necessary. The normality of quantitative data was verified by measurements from the Kolmogorov–Smirnov normality tests. Student *t*-test or Mann–Whitney U test was applied to compare two groups depending upon normality of the data. Proportions were compared using Chi square or Fisher's exact test, depending on their applicability for two groups. For comparison (time-related variables) of hemodynamic variables, repeated measure ANOVA was applied. Wilcoxon signed rank test was used for skewed data (time-related variables). All the statistical tests were two-sided and were performed at a significance level of $\alpha = 0.05$.

Results

A total of 115 patients were assessed for study eligibility. Twenty-five patients did not meet the inclusion criteria. The remaining 90 patients were randomized to Air-Q SP or Proseal LMA group (45 patients each). All gave their consent, and none was excluded due to violation of protocol [Figure 1: CONSORT flow diagram].

The demographics were comparable in the two groups. The mean duration of surgical procedures and types of procedures

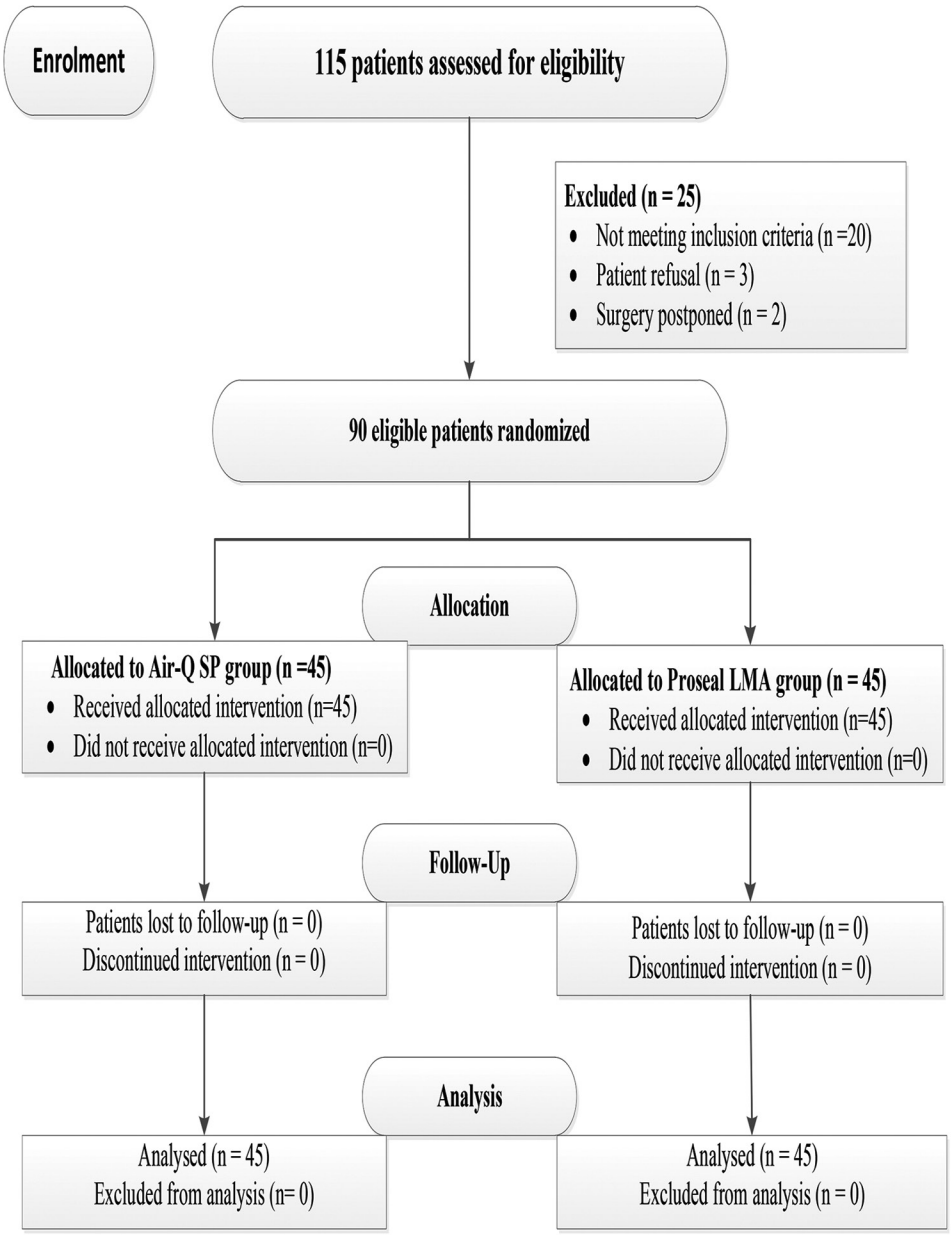

Figure 1: Consort flow diagram

were similar [Table 1]. All SAD devices were successfully placed in two attempts. Overall, there was successful insertion of the device on the first attempt. The insertion time of Air-Q SP was significantly shorter compared to Proseal LMA (12.29 ± 1.52 versus 18.82 ± 1.43 s) ($P < 0.001$). There was no significant difference regarding the ease of insertion grading or the number of manipulations necessary to adjust the position of the device between the two groups [Table 1].

Immediately after device insertion and 10 min later, the mean OLP was significantly lower in Air-Q SP group. The OLP initially, just after the successful insertion of the device (24.09 ± 1.66 versus 29.62 ± 2.15 cmH_2O; $P < 0.001$), and 10 min after the insertion of the device was 28.53 ± 1.66 versus 36.73 ± 2.64 cm H_2O, $P < 0.01$, in Air-Q SP and Proseal LMA, respectively [Table 2].

The fiber-optic laryngeal view gradings 3 and 4 were significantly better in Air-Q SP than in Proseal LMA as shown in Table 2.

There was no difference in haemodynamic [Figures 2 and 3] and ventilation parameters (i.e., peak airway pressure, resistance and compliance, minute ventilation) observed at different times in Table 3.

Table 1: Patient demographic data and operative characteristics for the Air-Q SP and Proseal LMA. Values are mean±SD, number, and percentage

Variables	Air-Q SP (*n*=45)	Proseal LMA (*n*=45)	*P*
Age (years)	37.16±13.62	41.73±11.82	0.089
Sex (M/F)	16/29 (35.6%/64.4%)	12/33 (26.7%/73.3%)	0.362
ASA (1/2) No./%	37/8 (82.2%/17.8%)	32/13 (71.1%/28.9%)	0.213
Height (Cm)	162.44±6.043	162.82±6.191	0.770
Weight (kg)	62.20±13.041	61.33±10.33	0.728
BMI (kg.m^{-2})	23.42±3.88	23.09±3.421	0.670
Operation time (min)	53±11.4	54.6±14.5	0.306
Anesthesia time (min)	67.6±11.57	70.6±15.8	0.562
Type of surgery			
General surgery	38 (84%)	37 (82.2%)	
Orthopedics surgery	2 (4.4%)	3 (6.6%)	
Urology Surgery	3 (6.6%)	2 (4.4%)	
Gynecology surgery	2 (4.4%)	3 (6.6%)	

Data are presented as the mean±standard deviation unless otherwise denoted; ASA=American Society of Anesthesiologists; BMI=body mass index

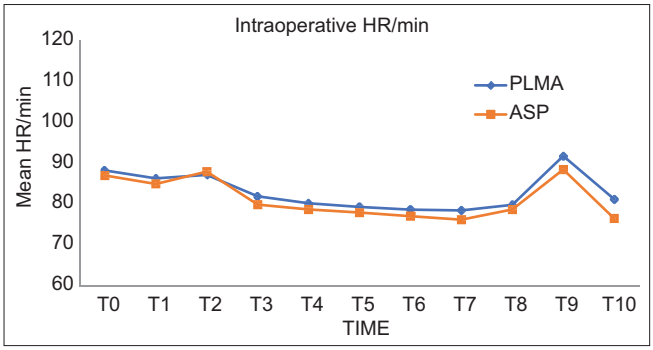

Figure 2: T0 = Baseline values; T1 = After induction; T2 = Immediately after SAD insertion; T3 = at 1 min after supraglottic airway device (SAD) insertion; T4 = At 2 min after SAD insertion; T5 = At 3 min after SAD insertion; T6 = At 4 min after SAD insertion; T7 = At 5 min after insertion; T8 = At 10 min after insertion; T9 = at removal of SAD; T10 = after 10 min of removal of SAD

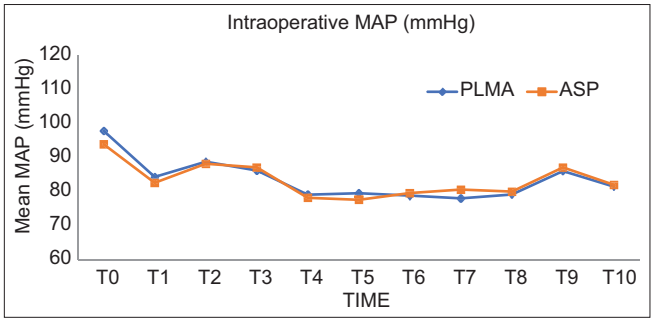

Figure 3: T0 = Baseline values; T1 = After induction; T2 = Immediately after SAD insertion; T3 = at 1 min after SAD insertion; T4 = At 2 min after SAD insertion; T5 = At 3 min after SAD insertion; T6 = At 4 min after SAD insertion; T7 = At 5 min after insertion; T8 = At 10 min after insertion; T9 = at removal of SAD; T10 = after 10 min of removal of SAD

Blood staining on the device was observed in two patients in the Air-Q SP group and five patients in the Proseal LMA group.

There was no difference in the incidence of post-operative sore throat. At 2 and 24 h, no patient reported any sore throat. One patient had a hoarseness in the Proseal LMA group. There were no cases of laryngospasm, bronchospasm, aspiration, hypoxia, or $SpO_2 < 90\%$ with any of the SAD devices.

Discussion

The present study demonstrated that the main outcome of the study, the OLP, was lower in the Air-Q SP group than in the Proseal LMA group. However, the Air-Q SP had a faster insertion time and an improved fiber-optic view score compared to the Proseal LMA. There was no significant difference between the two groups regarding hemodynamic and ventilation parameters and incidence of post-operative sore throat.

The OLP or airway sealing pressure is a parameter of the sealing fraction and is commonly used to quantify the seal of the SAD and denotes successful placement of the device with subsequent protection of the airway.[15] In addition, OLP is a cornerstone for determining the safety and efficacy of SAD. Higher OLP indicates the success of positive pressure ventilation and provides airway protection.[15,18] When the device is used, it provides a good seal. It is observed that an adequate inflation of cuff and intra-cuff pressure has to be controlled when SADs with inflatable cuffs are used.

The wider mask bowl of Air-Q SP and its anatomically shaped airway tube can improve its approach to the oropharynx, providing greater lateral stability and better sealing provided by the device.[1] The raised mask heel and space above the keyhole-shaped ventilating orifice of the Air-Q SP are designed to achieve better airway OLP and epiglottis isolation.[5] It is important to mention that the non-inflatable cuff of the Air-Q SP does not cause deterioration of the sealing function due to incorrect inflation of the cuff. The OLPs of Air-Q SP were in an acceptable range for ventilation and higher compared

Table 2: Comparative data for Air-Q SP and Proseal LMA. Values are mean±SD; number, and percentage

Variables	Air-Q SP (*n*=45)	Proseal LMA (*n*=45)	*P*
SAD insertion attempts (1/2)	43/2 (95.5%/4.4%)	40/5 (88.8%/11.1%)	0.242
SAD insertion time (sec)	12.29±1.52	18.82±1.43	0.001
Ease of device insertion grade*			
1. Very easy	38 (84%)	33 (73%)	
2. Easy	7 (15.5%)	10 (22.2%	
3. Difficult	0 (0%)	2 (4.4%)	
4. Very difficult	0 (0%)	0 (0%)	
SAD manipulation	5 (11.1%)	7 (15.5%)	
OLP (cmH_2O) initial	24.09±1.66	29.62±2.15	0.001
OLP (cmH_2O) at 10 min	28.53±1.66	36.73±2.64	0.001
Fiber-optic laryngeal view score† (4/3/2/1)	32/13/0/0 71.1%/46.4%/0/0	13/15/15/2 28.9%/33.3%/33.3%/4.4%	0.001
Mean ventilatory parameters			
Peak airway pressure (cmH_2O)	14.04±2.38	13.84±2.24	0.682
Resistance (cmH_2O)	8.51±2.40	8.15±1.87	0.429
Compliance (cmH_2O)	47.53±11.41	48.19±6.72	0.738
Minute ventilation $l.min^{-1}$	5.22±0.63	5.31±0.52	0.461
Presence of blood on SAD (yes/no)	(2/43) 4.4%/95.6%	5/40 11.1%/88.9%	0.238

*OLP=oropharyngeal leak pressure; SAD=supraglottic airway device. *Grade 1, "very easy"; Grade 2, "easy"; Grade 3, "difficult"; and Grade 4, "very difficult". †Fiber-optic laryngeal view scored: 4=only vocal cords visible; 3=vocal cords plus posterior epiglottis visible; 2=vocal cords plus anterior epiglottis visible; 1=vocal cords not visible*

Table 3: Mean ventilator parameters (mean ± SD)

Variables	Air-Q SP (*n*=45)	Proseal LMA (*n*=45)	*P*
Peak airway pressure ($cm\ H_2O$)	14.04±2.38	13.84±2.24	0.682
Resistance ($cm\ H_2O$)	8.51±2.40	8.15±1.87	0.429
Compliance ($cm\ H_2O$)	47.53±11.41	48.19±6.72	0.738
Minute ventilation $l.min^{-1}$	5.22±0.63	5.31±0.52	0.461

to previous studies.[1,8] In addition, the PLO is a cornerstone to indicate the success of positive pressure ventilation and the suitability of DAS as a ventilation device.

The higher OLP observed in the Proseal LMA may be due to its double-flexible silicone rubber cuff, which easily adapts to the contours of the hypopharynx.[8,11,18]

Clinical studies have compared Air-Q SP and other SADs for OLP showing variable results.[1,2,5,19-21] The initial study was carried out to assess the feasibility of Air-Q-SP in clinical practice and generate data for future comparison trials in 352 children using sizes of 1.0, 1.5, 2.0, and 2.5.[1] The mean OLP was 17.8 ± 5.4 and 20.4 ± 5.5 cmH_2O at baseline and 10 min, respectively. However, the OLP in Air-Q 2.5 size was greater than 20.1 ± 5.9 and 22.7 ± 5.8 cmH_2O initially and after 10 min, respectively. In addition, in the study by the same author in paediatric patients, the OLP initially documented was 16 (14–18 [10–29]) and at 10 min was 19 (16–220 [12–30]); the values mentioned are median (RIC [range]) [8]. Recently, a study also compared Air-Q SP and Supreme LMA in paediatric patients with an average OLP of 17.4 ± 2.9 cmH2O.[19] Very limited studies were conducted in adults. A study compared Air-Q SP and classic LMA in adult patients; the OLP was 16.8 ± 4.9 and 18.1 ± 4, respectively, at the start and after 10 min.[20] Recently, Lee JS *et al*.[21] compared Air-Q SP and i-Gel older patients; the OLP with Air-Q SP was 17 (14.0–21.0) [9.0–28.0] and 18.0 (15.0–21.0) [10.0–30.0] cmH_2O at the start and after 10 min, respectively.

The average OLP range in these studies is 14–22 cmH_2O, which is sufficient for adequate lung ventilation in routine anaesthesia.[5,7,8] The increase in OLP of SADs after 10 min from the initial assessment can be explained by the fact that there is moulding of the device on the posterior pharynx with better alignment of the ventilating orifice with the laryngeal inlet, which improves OLP.[5,7,8]

A higher OLP was observed in our study with Proseal LMA, and this was measured with the spirometry; also, it is also explained by the fact that the measurement through the ventilator's pressure gauge is more objective than the pressure gauge in the circuit or by auscultation/audible leak in the mouth. This was in contrast to that observed by Lee JS *et al*.[21] in some elderly patients where they compared Air Q SP with I-gel. In Proseal LMA, higher OLP was observed due to its double cuff, which is made of soft silicone rubber which easily adapts to the contours of the hypopharynx, compared with the polyvinyl chloride single cuff of the Air-Q SP.[9,11,17,18]

Similar to our study, the study by Kim HJ *et al*.,[13] who studied the influence of various head and neck positions to obtain the best OLP from Air-Q SP, is able to achieve

the best possible OLP from 26 (23-29) [18–35] IQR in a flexed position relative to 22 (20-24) [17-29] IQR vs. 15 (8-19 [4-23] IQR ($P < 0.001$) neutral and extended head and neck positions, respectively. Likewise, we also strive to obtain the best OLP by modifying the position of the head and neck where the maximum OLP has been reached.

The Air-Q SP had a shorter insertion time than the SAD without an inflation system for the cuff, as was noted in a previous study.[7] We believe that this is related to the non-requirement for cuff inflation and the removal of the steal introducer before cuff inflation in the Proseal LMA is an additional step.[7,18] A faster insertion time may be of clinical importance, particularly when the insertion of SGA is preceded by an interval of hypoxia. The success of first-attempt insertion rates was similar with both the groups, as has been shown previously in adults and children.[3,10]

The fiberoptic score was used as a measure of anatomical alignment in SAD studies. Higher scores may be associated with better sealing and ventilation.[20] The fiber-optic view of the larynx through Air-Q SP was better than that of Proseal LMA as previously reported.[5,8,10] This may be due to the structural difference in the Air-Q SP airway tube; it is larger and more preformed than the Proseal LMA, which has a drain tube which is next to the ventilation channel and passes through the much deeper cuff container to terminate distally in the mid-line. The structural differences always define the physiological responses or the aerodynamics of the SGA in terms of ventilation, visualization of larynx, and the ventilatory dynamics. However, we assume that the superior laryngeal view with the Air-Q SP suggests that it can serve as a reliable conduit for tracheal intubation if required.

Hemodynamic parameters (HR and MAP) were recorded at different intervals between groups to assess any variation in the cardiovascular response to surgical stress. In the present study, no significant statistical difference was observed between the groups, also observed previously.[18]

We also recorded respiratory parameters (PAP, compliance, resistance, and MV) at different intervals between groups to assess any variation due to the larger diameter of the Air-Q SP airway tube. No significant difference was observed between the inter- and intra-group comparisons.[18]

When Proseal LMA is over-inflated, it can interfere with the perfusion of the pharyngeal mucosa; this factor can lead to pharyngo-laryngeal complications. A slight sore throat was observed after the operation at 0 and 2 h without any statistical difference between the two groups.

There were certain limitations to our study. First, the anaesthesiologist involved was not blind to the type of SAD used and therefore provided a possible source of bias. To mitigate this factor, the post-operative observer and the patients were blinded to the distribution of the groups. Second, we only studied ASA I and II patients with an expected "easy airway"; therefore, the results of this study will not be applicable to patients with impaired lung functions or difficult airways. Finally, the study almost certainly has underpower to reveal differences in the rates of rare post-operative complications.

Conclusion

The present study showed that Proseal LMA has a higher OLP than Air-Q SP. However, both Air-Q SP and Proseal LMA devices were effective for positive pressure ventilation. The Air-Q SP may be an attractive option because of its faster insertion and superior fiber-optic laryngeal view, which suggests that it offers advantages compared to the Proseal LMA.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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