



Optimising I-Gel Size to Patient

Sir,

I-gel (Intersurgical Ltd, Wokingham, England) is a second generation supraglottic airway device launched in 2007. It has a noninflatable cuff that creates an anatomical seal by making a mirrored impression of the pharyngeal, laryngeal, and perilaryngeal structures. The size of I-gel is selected based on patient's body weight in accordance with the manufacturer's recommendations, i.e., size 1.0 for 2–5 kg, size 1.5 for 5–12 kg, size 2.0 for 10–25 kg, size 2.5 for 25–35 kg, size 3 for 30–60 kg, size 4 for 50–90 kg, and size 5 for 90+ kg.^[1] However, there is a considerable anatomical variation between individuals. As such despite being the proper size of I-gel for an individual's body weight, sometimes adequate airway seal is not obtained. The higher or next size laryngeal mask airway insertion is generally not possible unlike done in case of leaks in endotracheal (ET) tubes. Such cases are usually managed with either insertion of other supraglottic airway device or definite airway in the form of ET tubes.

A 35-year-old male patient weighing 60 kg was posted for laparoscopic varicocele surgery after obtaining informed written

consent. After premedication with intravenous (IV) fentanyl and midazolam, the patient was induced with IV propofol. Insertion of size 4 I-gel was attempted after administering atracurium as a muscle relaxant, but it was not successful. The airway was secured with I-gel of size 3. An appreciable leak was observed during volume control ventilation. On anesthesia workstation monitor, there was a difference of 175 ml between set and expired tidal volume. External laryngeal compression reduced the leak indicating the lack of proper contact between I-gel and laryngeal inlet. Neck flexion achieved leak reduction equivalent to that with external compression and the discrepancy between set and expired tidal volume resolved. The flexion maneuver was found to be successful in several patients who had leak with allowable size of I-gel. The degree of flexion was variable in all patients and full range of flexion (up to 45°) had to be tested to define the appropriate position.

Studies have shown that flexion allows for higher oropharyngeal leak pressure.^[2] We had also observed that flexion also reduces the amount of leak as evident by higher expired tidal volume. It may be due to an approximation of

adjoining soft-tissue structures to the I-gel surface. There is a reduction in the longitudinal pressure over the muscles of the anterior pharyngeal wall during flexion which settles over the surface of the supraglottic airway devices making a better seal, and the reverse is observed during extension.^[3] Thus, simple maneuver in the form of neck flexion helps to achieve proper seal in cases where larger size I-gel cannot be inserted to overcome leak due to misfit even after following manufacturer's recommended size. This also avoids unnecessary airway manipulation and instrumentation. However, the optimal degree of flexion to minimize leak needs to be individualized for each patient.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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