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## In response to a comment on lung isolation for lobectomy in elderly post radiation fibrosis of a difficult airway-pediatric double-lumen tube and pediatric ureteroscope as rescue devices

Sir,

Lung isolation for one lung ventilation (OLV) in thoracic surgeries is achieved through several methods which include Double Lumen Tube (DLT) and Bronchial blocker (BB). In our elderly patient with an anticipated difficult airway,<sup>[1]</sup> both DLT and BB were viable options as pointed out.<sup>[2]</sup> In current practice, DLTs are considered to be the standard of reference for achieving lung isolation. The reasons for this are manifold and most of them are pertinent in our case.

DLTs are quicker to place with a lower incidence of mal-positioning.<sup>[3]</sup> Placement requires fewer laryngoscopy attempts than when a Single Lumen Tube (SLT) is used with a BB<sup>[3]</sup> DLTs can be placed without fibre optic bronchoscope (FOB) assistance<sup>[3]</sup>, which becomes important in the context of a narrowed airway where the passage of an appropriately sized Endotracheal tube with a FOB might be challenging. Absolute isolation of the lungs from each other, ease of suctioning from each lung, rapidity of lung collapse, rapid switching from OLV to two-lung ventilation<sup>[3]</sup> are all advantages of DLTs.

BBs are emerging as another method of lung isolation in recent times especially for the pediatric population where appropriately sized DLTs are unavailable, whereas DLTs remain the gold standard in the adult population. The use of BBs, however, is riddled with complications. BBs require frequent

FOB examinations, produce unsatisfactory deflation of the operative lung,<sup>[3]</sup> might migrate into the trachea.<sup>[3]</sup> Accidental breaking of the BB and distal migration may also cause airway obstruction.

In the context of a difficult airway requiring OLV, both DLTs and BBs have a place. BBs can be used once the airway has been secured using an SLT.<sup>[4]</sup> Another proposition is the use of Airway Exchange Catheter (AEC) to change from an SLT to a DLT or to directly use a DLT over the AEC.<sup>[4]</sup>

In this anticipated difficult airway, arrangements for both methods were made. Upon direct laryngoscopy, Cormack- Lehane Grade 4 was noted and AEC was used before attempting intubation to ensure that airway patency was not lost.

We preferred a DLT for several reasons. In our elderly patient with multiple comorbidities and reduced cardiovascular reserve, the stress of laryngoscopy would be poorly tolerated. We intended to limit the duration and number of attempts at airway manipulation using a DLT. Since an AEC was already placed, the recommended method of OLV, that is, DLT was attempted first.

Owing to neck irradiation, glottic chink was reduced allowing snug passage of 7.0 mm ID SLT. This is smaller than

recommended for adult males. The use of an intraluminal BB with small ID SLT in this patient with already raised airway resistance due to smoking and age-related reduction in lung compliance would have increased susceptibility to further rise in airway pressures<sup>[5]</sup> and barotrauma. The use of an extraluminal BB would have necessitated the use of an even smaller SLT, causing raised airway pressures and was therefore avoided.

In this case, complications of BBs were weighed against the benefits of DLTs. With appropriate backup measures available, standard procedures for OLV using DLT was followed with necessary situational modifications – resulting in a successful outcome.

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### Conflicts of interest

There are no conflicts of interest.

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