

LECTURE 1

Functional Anatomy of the Airway

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Functional anatomy is very important to the doctors who are involved in the airway management. Attention to the details and subtleties of anatomy will often mean the difference between the success and failure of airway management. A clear understanding of the relevant anatomy will guide the choice of intubation, anaesthesia technique, airway instrumentation, and will enhance understanding of the best approach in each patient. It also provides the basis for understanding on how the complications can be avoided and managed should it occurs.

The aim of this presentation is to:

- Review the anatomy of the airway, specifically the upper airway from nose, nasopharynx, oral cavity and oropharynx, hypopharynx, larynx, trachea and bronchus. The description is more on the applied clinical anatomy, specifically pertaining to how the airway is handled during airway management manoeuvres (intubation and bronchoscopy).
- Very briefly discuss the mechanism of airway protection and review the normal processes of swallow, cough, and speech, highlighting the functional relevance of each airway structure.
- Describe briefly the difference in adult and paediatric upper airway, specifically pertaining to clinical management and functionality.

Key points:

- The upper airway provides a natural conduit for respiration, it humidifies and protects the lower airway and participates in the functions of deglutition and phonation.
- The larynx is the organ of respiration and phonation. Disruption of its highly innervated structure immediately interferes with upper airway patency and, thus, impedes respiration.
- Pediatric airway anatomy varies from that of adult anatomy in the size of the head, the position of the larynx, the shape of the epiglottis, the angle of the mainstem bronchi, and, most importantly, the diameter of the upper airway.