Robotics as the Next Frontier in Airway Management

Caregivers of COVID-19 patients are at increased risk of contracting the virus by contact or droplet spread, creating an urgent need protect healthcare providers from direct exposure to the patient airways. Additionally, improper insertion of the endotracheal tube results in life threatening airway complications, leaving no room for human error. Hamdy Awad proposes the use of a portable, autonomous robot to safely perform intubations reduce infection spread. The Airway Robot will include connections for power, image acquisition, sensing, and drug and/or oxygen delivery. An endotracheal tube will be inserted over the dynamic stylet with an integrated camera and imaging analysis software to identify key airway features. This technology protects both patients and doctors from health risks, as it eliminates inaccuracies in the intubation process while reducing exposure to infectious disease. This will also further encourage integration of artificial intelligence and machine learning in medical settings, improving the quality of healthcare services.

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