

Phone Adapter for Flexible Laryngoscope and Rigid Endoscopes

This technology offers a portable system for use in endoscopy procedures. The system uses a handheld adaptor from an electronic device to illuminate an LED light and camera on the endoscope that associates with the device software.

What is the Problem?

Flexible laryngoscopes and rigid endoscopes are commonly used in Otolaryngology for examination of the throat and nose. The laryngeal stroboscopy procedure has been shown to improve diagnostic accuracy by about 17-34%, as stroboscopy can give a more detailed inspection. In conjunction with a deeper understanding of laryngeal anatomy and physiology, stroboscopy has increased the ability to detect lesions earlier in their presentation. These advances have improved diagnostics, therapeutic, and surgical planning capabilities of otolaryngologists. However, stroboscopy suffers from a high upfront investment cost. Most current systems necessitate a 'tower' consisting of a desktop computer for file storage and analysis, a light source (e.g., halogen or xenon lamps), a voice-recording system, a strobe system, speakers, and other components. Thus, conventional equipment needs for laryngeal endoscopic techniques may present a high technical and cost barrier to widespread use.

What is the Solution?

To date, however, there is no integrated portable system for use in endoscopy procedures that eliminates the need for the traditional endoscopic tower. The solution is an adaptor for a handheld electronic device (e.g., a smartphone or tablet) which serves to couple an illumination port and a viewfinder of an endoscope to an LED light and a camera, respectively, of a handheld electronic device. Through the combination of hardware and associated software, this solution is an integrated handheld electronic device based endoscopy system suitable for the illumination (both stroboscopic and static light), video capture, voice capture, data storage, and data analysis on a handheld electronic device platform.

What Differentiates it from Solutions Available Today?

While there are variations of traditional stroboscopy systems, the variations typically require the traditional electronics tower, which carries a high cost, may be physically immobile or ponderous (weighing up to 100 lbs), and may be fragile. This system is lower cost and more accessible than the existing solutions, possibly increasing access to endoscopy procedures.

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Category

Device/Imaging
Selection of Available
Technologies

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