



PORTABLE ENDOSCOPY IN RURAL POPULATION – USING MOBILE TECHNOLOGY TO CREATE GLOBAL POINT OF SERVICE ENDOSCOPY



KEMENTERIAN KESIHATAN
MALAYSIA

Sarmukh S. ^{*1}, Theeban S. ², Azmi H. ³, Jiffre D. ⁴, David O.L.W. ⁴

¹ Department of General Surgery, Hospital Bentong, Pahang, Malaysia

² Director Hospital, Hospital Bentong, Pahang, Malaysia

³ Department of General Surgery, Hospital Sultan Haji Ahmad Shah, Pahang, Malaysia

⁴ Department of General Surgery, Hospital Tungku Ampuan Afzan, Pahang, Malaysia



Introduction

- Upper GI Endoscopy or Gastroscopy is also known as oesophagogastroduodenoscopy (OGDS) has become a necessary diagnostic tool in general surgery.
- Recent advances in digital and mobile device technology in healthcare in a growing population essential to meet the global surgery goal.
- Mobile flexible endoscopy that include smaller endoscopes light emitting diodes (LED) displays and camera miniaturization, these procedures have largely moved out of the hospital to reach rural population.
- We had initiated the mobile endoscopy service "Karl Storz" in year 2016 in Hospital Jerantut followed by Hospital Jengka and Hospital Bentong in year 2019 (Pahang Tengah Clusters).



Results

- A total of 253 patient underwent endoscopic from year 2018 till December 2021 in 3 cluster hospitals.
- Starting from year 2018 (n:21) involving hospital Jengka and hospital Jerantut.
- Global surgery initiation for endoscopy service in hospital Bentong started in year 2019.
- In year 2020 showed total cases of (n:107). In which the endoscopic cases from hospital Bentong was (n: 57).
- Our experience the picture quality was good in diagnosing of gastrointestinal diseases such as reflux esophagitis, Barret's esophagus,hiatus hernia, antral gastritis, duodenitis and obtaining CLO test for H.pyloric.

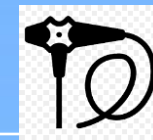


Endoscopy Structure



References

1) Shalabi H.T., Matthew D.P, Shalabi S.T., Mobile gastrointestinal and endoscopic surgery in rural Ecuador: 20 years' experience of Cinterandes, Surgical Endoscopy 31(12) 2017, DOI:10.1007/s00464-016-4992-9



Discussion

- Public healthcare has progressed immensely in the past few decades.
- Rural masses in the developing and underdeveloped countries very often have limited access to the advanced healthcare technology.
- **Aim** of the Cluster Health Care Project in Pahang Tengah:
 - a) To improve rural health and living conditions by providing a mobile OGDS for diagnostic purpose.
 - b) To provide cost-effective gastrointestinal care to the rural population.
- Implemented by traveling to clusters hospital (Hospital Jengka, Hospital Jerantut and hospital Bentong).
- 90 % of the population had a positive OGDS finding (primarily related to acid peptic diseases).
- Shalabi et. al. concluded that mobile surgery programme is structured to address all areas of the patient's perioperative care, to ensure a safe and high-quality surgical experience for the patient [1].
- Talukdar et. al. published a study on rural health care project in India involving 30 000 endoscopic procedure endoscopy can be made mobile and be taken out of the endoscopy suite to serve health-care deprived impoverished rural dwellers [2].
- Tang et al., described his experience on mobile endoscopy in rural Chinese people deprived of the benefits of advanced healthcare technologies [3].



Conclusion

- Our efforts have resulted in cost-effective management and robust data collection of several common gastrointestinal diseases in remote rural areas of the Pahang tengah cluster. Beside this, mobile flexible endoscopy also will improve the effectiveness of diagnostic testing of gastrointestinal diseases. It will offers a reliable option to support endoscopy departments in delivering top quality services, helping them to address not only the concerns of today but also to prepare for the challenges of tomorrow.

2) Talukdar R., Nageshwar R., Making endoscopy mobile: a novel initiative for public healthcare. Digestive Endoscopy (2012) 24 (Suppl. 1), 172–174 doi:10.1111/j.1443-1661.2012.01270.x
3) Tang X.W., Huang S., Fan Z.N., Spread the experience of India in China: making endoscopy mobile., Endoscopy 2012 Aug;44(8):798. doi: 10.1055/s-0032-1309844. Epub 2012 Jul 25.