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Taking Minimal Access Surgery (MAS) to the Masses: Gasless Laparoscopy

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Access to safe and affordable surgery remains limited in the LMICs despite its critical role in reducing death and disability and achieving the Sustainable Development Goals and Universal Health coverage. The various advantages of Minimal Access Surgery are well established. However, the benefits of minimal access surgery (MAS) are not available to most of the rural population in India and LMICs. Estimates suggest that only 2% of the LMICs population can access affordable MAS services. Open surgery remains the first line of treatment for conditions such as appendicitis, acute abdomen, gallstone disease. Open surgery may cause economic loss to the poor and marginalized with more morbidity and longer recovery periods; whose population is farmers, dairy, poultry workers or daily wage workers. The introduction of conventional laparoscopy in LMICs is complex and faces multiple barriers like lack of trained anaesthetists, recurring cost of expensive laparoscopic instruments, logistics of a constant supply of gases, and sophisticated monitoring equipment.

The gasless laparoscopy (GAL) offer a solution to the challenges associated with conventional laparoscopy (COL). It mechanically elevates the abdominal wall and allows laparoscopic visualization for diagnostic and therapeutic procedures. GAL procedures are possible in rural areas because they can be performed under spinal anaesthesia, don't require logistics of providing gases for pneumoperitoneum and don't cause hemodynamic and physiologic derangement associated with CO₂ gas. Though GAL does not have versatility of conventional laparoscopic procedures, it can be invaluable as a bridge to a surgeon transitioning from open to laparoscopic procedure and for bellwether procedures. Several studies and meta-analysis have suggested that Gasless Laparoscopy is noninferior alternative to conventional laparoscopy, has advantages for selective general and gynaecological procedures, cost-effective and may have a vital role to play in low resource settings. Our team has performed more than 350 GAL procedure successfully.

Laparoscopic training is inconsistent and unequal in LMICs, but structured training programs and proctoring improves knowledge and skills acquisition in laparoscopic surgery. Training programs, mentorship and collaborations can help LMICs to learn from each other for wider adoption of MAS for the masses and towards equitable surgical systems to provide safe and affordable surgery.