

HOSPITAL REVIEW

How intraoperative endoscopy can potentially reduce a hospital's costs and complications

By Megan Wood

Hospitals suffer high costs from just a few common surgical procedures. However, intraoperative endoscopy (IOE) may help hospitals decrease these costs and complications.

During an Olympus Corporation of the Americas-sponsored webinar, Haytham Gareer, MD, MBA, PhD, FACS, the Medical Director of Medical Affairs at Olympus Corporation of the Americas, cited key reasons to implement routine IOE during certain procedures.

“It’s all about using a very simple technique, which is intraoperative endoscopy, to avoid those complications and really this small technique would have a significant impact,” said Dr. Gareer.

These common, complicated and costly procedures include:

- Small bowel resection — 8.1 percent readmission rate
- Colorectal resection — 14.8 percent readmission rate
- Gastrectomy — 13.7 percent readmission rate

A good outcome of all of these procedures involves the successful healing of the anastomosis, which is impacted by systemic, local and surgical technique factors.

“It’s all about ensuring the anastomosis is tension free with good blood supply at the time of the procedure,” said Dr. Gareer. This step is crucial, because postoperative leaks of the anastomosis cause up to one-third of postoperative deaths related to these procedures.

A common complication, anastomotic leaks can range from 1.5 percent to 16 percent globally, according to a 2014 Journal of Gastrointestinal Surgery study conducted by Jeffrey Hammond, Sangtaeck Lim, Yin Wan, Xin Gao, and Anuprita Patkar. The anastomotic breakdown rates between two surgeons also vary considerably, by as much as a factor of 60, according to a 2009 Journal of American College of Surgeons study.

“It’s all about being able to detect the anastomosis early, as part of standard procedure, [so] this complication can be avoided,” Dr. Gareer said.

Anastomotic leaks serve as one of the greatest independent risk factors of postoperative death for gastric bypass procedures, with a mortality rate of nearly 50 percent when untreated early.

In colorectal surgeries, anastomotic leaks amplify the total clinical and economic burden by 60 percent to 190 percent for 30-day readmission rates, postoperative infection rates, length of

stay and hospital costs, according to the above-mentioned 2014 Journal of Gastrointestinal Surgery study. Additionally, patients were at a greater risk of wound infection and experienced increased mortality rates of up to 32 percent, according to a 2006 Diseases of the Colon & Rectum study conducted by H.K. Choi, W.L. Law and J.W. Ho.

“Not only are the rates increased, but there’s also an impact on the quality of care and patient experience,” said Dr. Gareer.

In the absence of anastomotic leaks during colorectal surgeries, researchers found lower postoperative infection rates, less readmissions and shorter length of stays, compared to colorectal surgeries with anastomotic leaks. In the presence of anastomotic leaks, infection rates tripled, readmissions doubled and length of stays increased by nearly 10 days.

The financial impact of an anastomotic leak is also severe, with hospitals losing nearly \$30,000 per patients with a leak.

“Death is still very expensive to the hospital,” said Dr. Gareer. “Death is reported to be 2.7 times more expensive to patients who undergo a procedure compared to those who survive.”

The value of intraoperative endoscopy

Fortunately, hospitals can avoid these complications and costs by reducing anastomotic leak rates. It is imperative to diagnose the condition early, and visualization can help with achieving better outcomes in these procedures.

The risk may be decreased for an anastomotic leak at the time of performing an anastomosis by mobilizing the bowel, joining the ends of the bowel only if they are pink and healthy and ensuring the end of the bowel are tension-free and well-aligned.

“But, [an anastomotic leak] is not necessarily a mistake of a surgeon. They tend to happen and tend to be missed for a variety of factors,” explained Dr. Gareer. Therefore, it’s routine to assess the anastomosis intraoperatively, either by

methylene blue testing, pneumatic insufflation or endoscopic evaluation.

“The impact of intraoperative endoscopy, what it really does is that it allows the visualization of the entire lumen of the GI tract during the procedure, and ensuring it is sound,” said Dr. Gareer. IOE is a critical part of visualization and thus significantly helps in reducing the risk of an anastomotic leak.

Laparoscopic visualization of the anastomosis with IOE allows surgeons to evaluate the both the external and internal surface of the bowel.

“The true value is that, while you’re there in the OR and you do realize that there is something wrong with the anastomosis, you are able to correct it on the table,” Dr. Gareer said.

Various studies demonstrate the effectiveness of IOE, with one highlighting a 0 percent leak rate in 290 patients. Another study revealed a 91.8 percent reduction of potential leak rate in 2,311 patients, compared to no testing. Routine IOE adds about five minutes to 10 minutes to the procedure time, but drops the morbidity rate from 3.2 percent to 1.3 percent, according to the study.

Hospitals can also meet three key Physician Quality Reporting System metrics by reducing anastomotic leaks. Decreasing one type of infection or reducing readmissions for a particular condition is proving to be financially sound for hospitals in the value-based reimbursement environment.

Ultimately, IOE adds immense value in the OR, as it has the potential to enhance surgical outcomes by delivering timely information right to the surgeons. Small bowel resection, colorectal resection and gastrectomy represent common, complicated and costly procedures that stand to benefit from IOE implementation. With reported leaks ranking from 1.5 percent to 16 percent globally, it is essential to perform intestinal anastomoses safely and effectively. By performing IOE, hospitals have the potential to cut hospital stays and save immense costs.