



## DOES OPEN SURGERY STILL EXIST?

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#### What Is Open Surgery?

This is a main conventional surgical procedure with making a large incision to replace or repair tissue or an organ in the body. The surgeon may make an incision of up to ten inches to allow access to the organ.

#### What Is endoscopic Surgery?

Also known as keyhole surgery, Band-Aid surgery, diagnostic endoscopy, and minimally invasive surgery. Endoscopy is a surgery that is initiated by a small incisor.

The biggest benefit of endoscopic surgery is that it is minimally invasive and therefore less painful. It is typically used for diagnosis and treatment. They heal faster and do not leave big scars too. Because the incisions are small, a lot of blood loss will be unlikely during the procedure.

Because anatomy is the groundwork of surgery, most surgeons who currently master minimally invasive surgery have their skills based on open surgery since open operations allow for clearer display of organs, it is the foundation of improved practice in surgical techniques. The above fact is considered in many countries, and it is decided that gaining open surgery skills is essential for initial training. In China's "Contents and Standards for Standardized Residency Training", the whole surgical skills must be understood during the residency in general surgery, and other surgical fields like urology, orthopedics, thoracic and neurosurgical field, including open operation skills. Open surgical procedures necessitate the most of junior doctors' participation. In Surgery, the American College of Surgeons and the Association of Program Directors in Surgery

focus on preparing surgical residents in open surgery<sup>1</sup> for most core skills and enhanced procedures as a part of the curriculum. Open surgical techniques are most important to and expected to persist as an appropriate in the future. On the other hand, endoscopy has not absolutely replaced open surgery in certain circumstances. Over the past period, open surgery has been the principal treatment for wide spectrum of conditions. More over some surgical procedure might be initiated as minimally invasive but are switched to open surgery. The frequency of conversion to open surgery in operations for carcinoma of colon and rectum is approximately 10.0%–16.0%<sup>2,3,&4</sup>, this picture does not improve in some centers<sup>5</sup>. In addition, patients might schedule for open surgery as an alternative of minimally invasive surgery according to their health insurance or finances which represent other issues. As minimally invasive surgery is a rather new technique which need to be validated by more high quality studies and high level evidence whether will bring more benefits to patients than open surgery. In some disorders, involving early stage cervical malignancy, lower overall survival and cure rate of patients reported in those subjected to minimally invasive surgery than those that undergo open surgery<sup>6</sup>.

Open surgery has particular fundamental advantages. First, in open surgery, tactual sensation can assist visual assessment to accurately remove lesion<sup>7</sup>. Expert surgeons can assess the mobility, tissue texture, and predict degree of invasiveness using the finger tactile perception. Second, in surgical training mentorship is important; minimally

invasive surgery tends to involve a small number of people, and only one equipment set is placed in the patient's body. Additionally, the loss audio stereo during minimally invasive surgery may raise the risk of inadvertent injury. Hence, even if the senior doctor is nearby, they may not be able satisfactorily manage the situation. Several generations of present senior endoscopic surgeons are self-trained; the next generation's challenge is to acquire expertise without the pioneers' misfortunes<sup>8</sup>. Open surgery is still the standard treatment in colonic cancer though, endoscopic intervention is also of choice. Surgeons try to make minimally invasive surgery simpler, more replicable, and easier to teach and master<sup>9</sup>. Third, there are broader range of indications for open surgery than those for minimally invasive surgery. Generally, best access with higher efficiency can be obtained by open surgery, making it suitable for patients who are not candidate or otherwise cannot tolerate minimally invasive surgery due to anesthesia related risks or disputes, cardiopulmonary compromised status, or previous history of abdominal surgery<sup>10</sup>. Based on the National Comprehensive Cancer Network guidelines for colon cancer, minimally invasive surgery should be carried out by surgeons qualified in endoscopy and is not indicated for locally advanced cancer, or perforation from malignant tumor in addition to acute intestinal obstruction. For recurrent cases that require reoperation and other high risk tumors, open surgery should be the first line of treatment<sup>11&12</sup>. Additionally, open surgery is still necessary for patients in extreme situations, particularly during catastrophes.

Minimally invasive surgery seems to be used considerably less often in patients with stage II-IV colonic cancer and is less frequently used in older (70+) or male patients with rectal

cancer<sup>13</sup>. Majority of surgical video records produced at different conferences over the world focus on minimally invasive surgery, which gives false impression that such approach is easy, or that only minimally invasive surgery is of value. In fact, minimally invasive surgery has relatively restricted indications and requirements for different circumstances. Presenters usually carefully select their presentation and edited original videos. The tertiary or university hospitals should not admit patients selectively; in fact the advanced hospitals take the responsibility for solving problems of many patients that low level hospitals could not, and it is the duty senior surgeons to guide junior specialists in solving the complications they face during surgeries. Otherwise, who will operate for patients with complex or advanced tumors? Who will take care of patients in isolated or underdeveloped areas? Who can be in charge of the procedure to ensure safety of the patient when a junior doctor encounters emergencies or difficult cases?<sup>14</sup>.

In conclusion, many surgeons prefer endoscopic surgery as it is quick and more advanced but we should realize that the ultimate goal of surgery is to solve patients' health problem to optimize the patient condition. Appropriate surgical method selection should be the goal of the surgeon to ensure safety. Although minimally invasive surgery is popular, open procedure is still an essential mean of achieving surgical aims. The primary objective of the surgery should always be the patients' welfare and not a means to process one's skills. Only by giving this objective priority, all surgeons can aware to their responsibilities, furthermore, open surgery cannot be omitted as it can solve many problems and save patients in underdeveloped countries, during war time and nature disasters which are common nowadays. Although open surgery is on the

wane because of new technologies that make it so much easier to avoid large incisions and the risks that come with them but still it is needed in certain circumstances and

armamentarium, it is essential to consider open surgery as cornerstone alternative with professionalism.

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