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Primer

SILS— The Procedure of Choice

*Enthused by the rapid recovery from surgery and superior cosmesis seen in their patients, more and more surgeons around the world are embracing SILS as the new procedure of choice, explores **Sonal Shukla***

Ten years ago, no one could have imagined an operation without sutures, blood, 'mess' and ugly surgery marks, until the entry of laparoscopic surgery, better known as keyhole surgery. Today, laparoscopic surgery, a form of minimal access surgery, has gained prominence as a technique of the new millennium for most



abdominal and thoracic operations and has become a very popular surgical technique around the world due to reduced pain and faster recovery associated with the procedures. However, the latest entrant in the modern day surgical procedure is certainly a technique called Single Incision Laparoscopic Surgery (SILS).

Surgeons who have been performing laparoscopic surgery for well over 15-years have looked for ways of further reducing the trauma related to the multiple incisions required for traditional laparoscopic surgery. In SILS, all of the laparoscopic working ports enter the abdominal wall through the same incision. This revolutionary technique has been developed in the western world only in the last couple of years.

According to experts, SILS is the logical next step forward in the minimalist revolution that has taken over the world of medicine. "We have progressed from huge incisions in open surgery to multiple tiny cuts in laparoscopy and now to a single small incision in SILS. It is technically more difficult to master, but surely the scope of SILS is on the rise. It will soon be applied to more and more difficult procedures," says Dr Muffazal Lakadawala, Bariatric Surgeon, Dr LH Hiranandani Hospital, Mumbai.

Laparoscopic surgery evolved out of a need for a surgical technique that minimised 'access trauma' and enhanced recovery. SILS is a further step in that direction with the added benefit of superior cosmesis vis-à-vis conventional laparoscopy. "The availability of roticulated instruments and increased laparoscopic surgical expertise has also played a big part in the evolution of SILS. SILS has come to India about a year back and very few centres perform SILS in India," shares Dr Ashish Shah, Consultant Gastrointestinal and Laparoscopic Surgeon, Wockhardt Hospitals,

Bengaluru. Enthused by the rapid recovery from surgery and superior cosmesis seen in their patients, more and more surgeons around the world are embracing SILS as the procedure of choice.

PROS AND CONS

Pros

- Cosmetically superior.
- Lesser pain and decreased need for analgesics.



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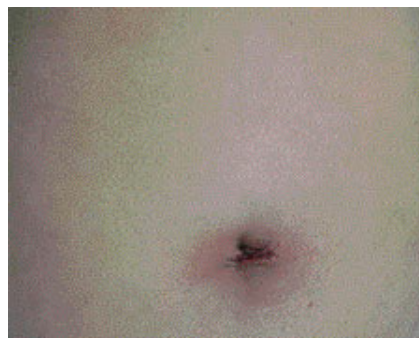
- Earlier recovery.
- Earlier return to activity.
- Applicable to many common surgical conditions- GB stones, appendicitis, hernia, to name a few.

Cons

- Need for roticulated instruments and SILS port.
- Need for greater level of laparoscopic expertise and dexterity.
- SILS applicable currently to less advanced disease processes as compared to conventional lap which is applicable even in advanced conditions.

About the Technique

Laparoscopy involves a minimum of three-to-six incisions depending on the complexity of the surgery. However, the sizes of the incisions range from five mm to 15 mm. Laparoscopy also had a steep learning curve, starting with simple procedures like diagnostic laparoscopy, appendectomy, cholecystectomy and then progressing to highly advanced surgeries like, colectomies, nephrectomies, adrenalectomies and even whipples surgery for cancer of the pancreas. In traditional laparoscopic surgery, the abdomen is filled with carbon dioxide gas to create a space for the surgeon to work in. Tubes called ports are then inserted through three to four small cuts, each measuring around ½ - one cm. A telescope attached to a camera inserted through one of the ports allows the surgical team to observe a magnified picture of the internal organs on a television screen. The surgeon carries out the surgery with the help of instruments introduced through the ports. In simple words, 95 per cent of surgeries can be performed laparoscopically— thanks to the advancements in surgical skills, and undoubtedly the advancements in technology i.e. the equipment used for



Single tiny scar after a SILS cholecystectomy



SILS port in use during cholecystectomy



Four scars of traditional laparoscopic cholecystectomy

laparoscopic surgery. "With nothing more to achieve, the desire to give the patient a scarless surgery along with the other benefits of laparoscopy came to mind and this was fulfilled by the SILS port," says Dr M Ramesh, Consultant and Head of the Department of GI, Minimal access and Bariatric Surgery, BGS Global Hospitals, Bengaluru.

SILS

In SILS, the surgeon makes only one incision of around 1.5 cm — two cm (commonly just below the navel) to allow placement of three thin ports side by side. Else, a specially designed port (eg. the SILS port) is inserted into the abdomen. This port carries the telescope as well as the laparoscopic instruments. The surgeon then carries out an operation identical to a traditional laparoscopic one. Just as laparoscopic surgeries, even the SILS procedures will have a steep learning curve. "We have now started doing simple appendectomies, cholecystectomies, adhesiolysis and hernia

surgeries through the SILS port. The challenge the surgeon faces is that both, the instruments and the camera are very close to each other and this causes a little sword fighting of the instruments inside the abdomen," shares Dr Ramesh. However, experts believe that as the surgeon adapts to this new technique, in due course of time even difficult appendicectomies, cholecystectomies etc will be performed.

Different Strokes

Single incision surgery has been around for three to four years now. Surgeons initially used it for simpler surgeries like appendicectomies and gall bladder surgery. But now, in India, over the last couple of months, a wide variety of surgeries have been performed by this technique for example, appendicectomy, cholecystectomy, incisional/ umbilical hernia and adhesiolysis. Today, it is also increasingly used for more advanced procedures like bariatric surgery and kidney removal in case of kidney transplant. "Basic procedures are being done in India since last two years. More advanced surgeries have been done only recently. At Centre for Obesity & Diabetes Support (CODS), we did the first SILS sleeve gastrectomy in Asia last month," shares Dr Lakadawala. According to experts, as this technique was introduced earlier in the west, advanced surgeries like sleeve gastrectomy, and hemicolectomy have also been performed successfully. This makes it very evident that SILS seems to be progressing in leaps and bounds and there is a lot more to achieve.

"As the technique gets refined and better instrumentation becomes available, the surgeons will be able to carry out many more operations today with the help of traditional laparoscopic surgery using the SILS approach," opines Dr Deepraj Bhandarkar, Consultant Laparoscopic Surgeon, PD Hinduja Hospital, Mumbai, who has in recent months performed SILS for removal of gallbladder, appendix and ovaries. On January 12, 2009, the FDA gave Covidien approval to market the SILS port that allows surgeons to perform laparoscopic procedures with three instruments inserted through one incision. SILS port was introduced in India in the month of September 2009.

Pros and Cons

As with any other surgical technique,

"In bariatric surgery, we select patients with a BMI of less than 45 Kg/m² for SILS"



- Dr Muffazal

Lakadawala
Bariatric Surgeon
Dr LH Hiranandani Hospital
Mumbai

"As success with simple surgeries is achieved, SILS can progress to advanced surgeries"



- Dr M Ramesh
Head of the
Department of GI
Minimal access and Bariatric Surgery
BGS Global Hospitals, Bengaluru

"In five to 10 per cent patients, it may not be possible to complete the operation by SILS"



- Dr Deepraj Bhandarkar
Consultant Laparoscopic Surgeon

SILS too has its own share of pros and cons to deal with. As there is only one incision, the patient experiences much less pain as compared to traditional laparoscopic surgery and recovers faster. The healed incision leaves practically no scar, thus making SILS cosmetically a superior option. "All patients enjoy these benefits, but SILS is of particularly great cosmetic value to ladies (as most would prefer to have as few scars as possible) and to busy corporate executives who wish to recover rapidly from surgery so as to get back to work," says Dr Bhandarkar.

However, experts also believe that this surgical technique is technically very demanding and as it is a relatively new technique, it is too early to make a comment on it and to start with uncomplicated surgeries can be taken up like a simple appendicectomy and cholecystectomy.

"As the procedure is new and technically demanding, it will take time to adapt to and develop the required skills of working with instruments close to each other and crossing each other. Moreover, it takes some time to get acquainted to working with articulated instruments. As skills are developed and success with simple surgeries is achieved, vigilant progress can be made progressing to advanced surgeries," says Dr Ramesh. There is also a restriction to the number of instruments used, there could be risks of inability to complete the procedure completely by the SILS technique and the surgeons may have to resort to the laparoscopic route, if the case is complicated and requires the use of more instruments to retract the adjacent tissues or to control an oozer.

Risk Factor

The risks involved in SILS are more or less the same as those involved in traditional laparoscopic surgery. The risk also depends on the training and expertise of the surgeon. As this technique is under evolution, in the interest of the patient safety this type of surgery is currently best performed by surgeons experienced in laparoscopic surgery. "It takes longer than usual laparoscopic procedures. It should be done only by an experienced laparoscopic surgeon. Risk is more if a surgeon does not have experience with laparoscopy. Risk per centage will decrease as the experience goes up," says Dr Lakadawala.

According to Dr Bhandarkar, in five to 10 per cent patients it may not be possible to complete the operation by SILS due to technical difficulties. "The surgeon places one or two additional ports and completes the procedure in the traditional laparoscopic manner. Rarely, it may be necessary to convert to an open operation. Both these issues are always discussed with patients prior to surgery and they are made aware that conversion to traditional laparoscopy or indeed to open surgery merely represents a sound judgment on part of the surgeon in the interest of patient safety," he shares.

Cost Factor

As SILS involves the use of specialised equipment, it therefore is marginally more expensive as compared to traditional laparoscopic surgery. However, this small extra-cost is more than offset by the benefits that the patient reaps, opine experts.

"A little more compared to the regular laparoscopic surgery, as the port used needs to be charged for. But this is nothing compared to the 'smile' on the patients face after he/ she finds that the surgery done was 'scarless,'" says Dr Ramesh. Experts are hopeful that as more and more procedures will be done, cost will automatically decrease.

Patient Selection

"As of now we are selecting the younger fit patients. In bariatric surgery we select patients with a BMI of less than 45 Kg/m² for SILS. We are sure that as the experience increases it will be used for all kind of procedures," says Dr Lakdawala, Dr Bhandarkar adds that the surgeon would assess an individual patient to decide whether or not he/ she are a suitable candidate for SILS. SILS may not be applicable to some patients like to those who are very obese, those who have had multiple previous abdominal operations and patients who are likely to have grossly enlarged or thickened diseased organ e.g. an acutely inflamed gall-bladder. However, traditional laparoscopic surgery, of course, can be offered to all these groups of patients.

With all said and done, experts exude confidence about the success of SILS procedures and believe that with better instrumentation, increasing awareness and more experience it may replace conventional laparoscopic procedures to a very large