Single-Incision Laparoscopic Surgery: Case Report of SILS Heller’s Cardiomyotomy
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Citation

Abstract
We present a case of a SILS (single incision laparoscopic surgery) cardiomyotomy in a patient suffering with achalasia. A 64-year-old gentleman with achalasia was referred to the upper gastrointestinal surgeons for a cardiomyotomy. Medical treatment (nifedipine) and two previous endoscopic balloon dilatations had hailed good initial results but symptoms had since recurred. A SILS cardiomyotomy was planned. A SILS port, consisting of a 10mm and two 5mm ports, was inserted through a subumbilical incision and pneumoperitoneum was obtained. A 10mm laparoscope was inserted and the liver was retracted using a mini-lap retractor. The oesophagus and gastro-oesophageal junction were exposed using careful dissection with hook diathermy, Maryland graspers, and reticulating scissors. The muscularis externa was divided, exposing the underlying oesophageal and gastric mucosa. Haemostasis was attained and the mini-lap liver retractor and SILS port were removed. The patient made an uneventful recovery and was discharged home on the first post-operative day. At 6-week follow-up the patient reports a vast improvement in symptoms. SILS cardiomyotomy is feasible in selected patients with achalasia requiring surgical management.

INTRODUCTION
As laparoscopic skills improved, innovative and bold advances were made to further minimize the trauma to the abdominal wall. From natural orifice trans-luminal endoscopic surgery (NOTES) (1) to single-incision laparoscopic surgery (SILS), the face of general surgery is changing.

Our case documents the feasibility of the SILS for Heller’s cardiomyotomy which has not been documented in the literature.

CASE REPORT
We present a case of a SILS (single incision laparoscopic surgery) cardiomyotomy in a patient suffering with achalasia.

A 64-year-old gentleman with achalasia was referred to the upper gastrointestinal surgeons for a cardiomyotomy. Medical treatment (nifedipine) and two previous endoscopic balloon dilatations had hailed good initial results but symptoms had since recurred. A SILS cardiomyotomy was planned.

A SILS port, consisting of a 10mm and two 5mm ports, was inserted through a subumbilical incision and pneumoperitoneum was obtained. A 10mm laparoscope was inserted and the liver was retracted using a mini-lap retractor.

The oesophagus and gastro-oesophageal junction were exposed using careful dissection with hook diathermy, Maryland graspers, and reticulating scissors.

Haemostasis was attained and the mini-lap liver retractor and SILS port were removed.

The patient made an uneventful recovery and was discharged home on the first post-operative day. At 6-week follow-up the patient reports a vast improvement in symptoms.

DISCUSSION
Heller first described cardiomyotomy for the treatment of achalasia in 1914 (2) using an abdominal approach with an anterior and posterior oesophageal myotomy. This approach was modified to a single myotomy by the Dutch surgeon Zaaijer in 1923, which is still in use today (3). The thoracic approach was popularized by Ellis in 1958 (4) and was the
most commonly used surgical procedure in North America for achalasia for many years. This approach used a single cardiomcyotomy performed through the left chest without an accompanying antireflux procedure.

NOTES has the potential benefits of no scars, decreased pain, and better cosmesis; however, it is difficult because of the instrumentation shortcomings and possible new risks of access complications. SILS, however, minimizes the abdominal wall incision while avoiding the potential difficulties associated with NOTES. First attempted in the late 1990s, SILS failed to gain widespread acceptance owing to the lack of specialized equipment (5, 6). Given technological improvements, SILS applications have been recently reported in urology and pediatric surgery (5, 7-12).

Although SILS is in its infancy, this approach holds promise to further minimize the invasiveness of surgery. It could translate into fewer wound infections and hernias, in addition to improved cosmesis and, possibly, less pain. The present case report documents the feasibility of the SILS approach for Heller’s cardiomcyotomy which has not been documented before. As we gain experience, we expect the operating times to be slightly longer than those with traditional laparoscopic cardiomcyotomy.

The present case was our first attempt and using this approach, the instruments were quite parallel in orientation and the range of motion was limited. The alternative will be to use curved instruments as mentioned by Dapri (13).

CONCLUSION
At present, SILS Heller’s cardiomcyotomy seems feasible. Additional technological improvements will enhance the performance of this procedure. Additional studies are needed to investigate the potential benefits in terms of less scarring and pain.

References
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