

# An Endo-Luminal Linear Anastomosis (ELLA) Stapler

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## HIGHLIGHTS

- ✓ A new device for ELLA surgeries
- ✓ A stapler to reduce surgical trauma
- ✓ A novel safe and easy approach of laparoscopic procedure

## TECH STATUS

- ✓ **TRL:** Technology Concept
- ✓ **IP:** Patent On Draft

### Problem to be solved

Because of its technical difficulty, laparoscopic right colectomy with intra-corporeal anastomosis is performed only by a small number of laparoscopically very skilled surgeons. Current staplers do not solve this problem. Thus, there is a need of a safer and easier to be managed stapler.

### Background

Ileocolic anastomoses are most commonly performed after intestinal resection for right sided colon cancer, not resectable polyps or Crohn's disease. An ileocolic anastomosis is a routine procedure in the elective and emergency setting.

Case series have suggested that both stapled and sutured anastomoses can be performed with a very low risk of anastomotic leak, however a meta-analysis of randomized clinical trials on stapled versus hand-sewn methods for ileocolic anastomoses shown that the stapled functional end-to-end anastomosis is associated with significantly fewer anastomotic leaks compared with hand-sewn.

Laparoscopy is supported by many studies to be introduced as standard in colonic resection as the

overall postoperative complications seem to be reduced. However many surgeons discourage the intracorporeal anastomosis for the excessive performing time and unavoidable technical challenges. Nowadays an indication to the intracorporeal anastomosis is represented only by the incapability to perform an extracorporeal anastomosis. Otherwise the length of the right transverse laparotomy has to be greater than 15 cm hereby losing the advantage of a laparoscopic approach.

Taking into consideration the excellent results obtained with the intraluminal stapler in the left colon and rectum, there is an urgent need to unify and simplify the anastomosis in the right colon and small bowel.

### Technology

The invention presents a novel approach for the safe and easy performance of an otherwise very complex laparoscopic procedure. With the traditional approach, the primary laparoscopic operation for the resection of the right colon has to be completed using a large incision in order to perform an anastomosis. The presented technology would eliminate the need for this large

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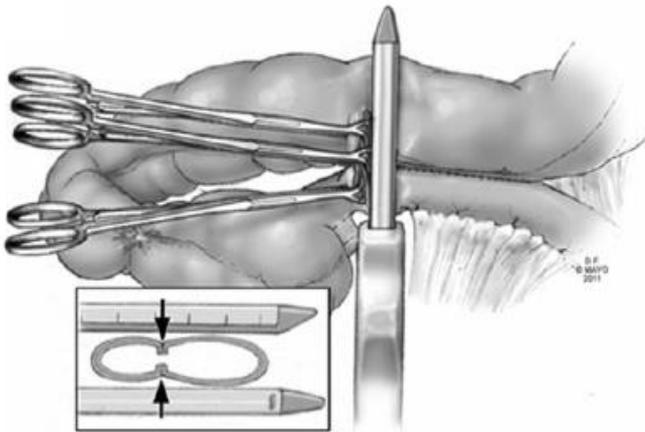
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## IDIBELL Technology Portfolio Ref. 15TGG001

incision, resulting in a reduction of surgical trauma and a transformation of the right-sided colectomy into a real laparoscopic procedure.



### Applications

ELLA Stapler is a medical tool to be used in patients undergoing a laparoscopic right colectomy or undergoing any kind of laparoscopic intestinal resection and reconstruction of the intestinal integrity.

This device has been conceived and designed to address the problems of intracorporeal ileo-colic anastomosis after right, extended right or subtotal colectomy.

ELLA anastomosis technique could be applied to all forms of anastomoses in the small bowel anastomosis during laparoscopy. It could also be applied as a first choice technique in the closure of a protective ileostomy/colostomy.

### Technology status

The proposed ELLA stapler would be based in current staplers but with an important improvement in the cutting and sealing process.

A 3D prototype has been developed. After that, there is needed the development of a pre-prototype to test in animal models.

IP status: Patent application on draft.

### Market Opportunity

Traditional types of physical wound closure (sutures, staples, clips) continue to represent the lion's share of the wound closure and related products market. The total market size of the sutures and staples worldwide market was evaluated at 4.2 Billion US dollar, growing at a CAGR of approximately 3.5%. The Surgical Stapling market was estimated at 1.5 Billion growing at a CAGR of approximately 5.5%. However the share of the sutures and staples market as part of the wound closure and related products market is expected to decline from 35% in 2012 to 32% in 2017. The market is controlled by companies like Ethicon (J&J) with 80% of the sutures, staples and mechanical closure market, followed by Covidien and B.Braun.

With the new ELLA Stapler it will be possible to perform successfully and in a standardized fashion most of ileo-colic and small bowel anastomosis which are presently performed. This new technique avoids the state of the art problems of cross-stapling and the need to close any enterotomy. The ELLA-anastomosis could be a safe, easy and standard technique. Thus, clinicians would rather work with this new device.

### Business Opportunity

IDIBELL is seeking a company partner to further develop the technology through a co-development agreement.

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