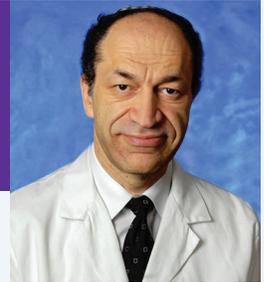


# A New Endoluminal Therapeutic Platform: Results Of The First 519 Interventions

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*Adapted from an independent submission to DDW 2020.*



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## **INTRODUCTION:**

Endoscopic submucosal dissection (ESD) allows en bloc removal of colon polyps and early colon cancer. Multiple studies have demonstrated the advantages of ESD versus endoscopic mucosal resection (EMR). However, ESD is technically difficult, labor-intensive and time-consuming. We performed a single center, retrospective observational study to evaluate safety and effectiveness of a new endoluminal double balloon interventional platform (Lumendi LLC, Westport, CT) for colonic polyp resection.

## **Methods:**

Colonoscope was preloaded through the double platform sheath and navigated until the colonic lesion was reached. Afterwards, the device's distal balloon was inflated, stabilizing the colonoscope's position and creating an endoscopic conduit between the rectum and lesion. Circumferential incision was performed using ESD knives. Then, the dissected mucosal margin was clipped to a suture loop attached to the fore (proximal) balloon to provide multi-directional retraction facilitating submucosal dissection, creating a therapeutic zone with both balloons. After ESD completion, colonoscope was removed and an endoscopic suturing device (Apollo Endosurgery, Austin, TX) mounted on a double-channel the upper endoscope (GiF 2T-180, Olympus America, Center Valley, PA) was advanced through the platform sheath to the defect. A complete, sutured closure of the mucosal defect was performed. Endoscope/interventional platform were then removed and the patient was discharged to home post-procedure. Patients' demographic information, lesions' characteristics, procedural times and follow up data were retrospectively collected into an Excel database and analyzed.

## **Results:**

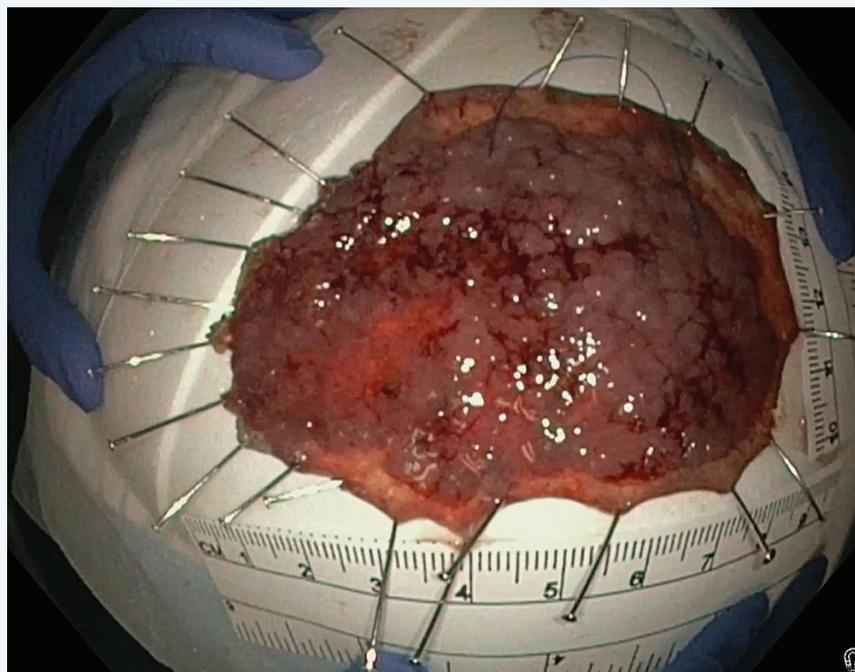
From November 2017 to November 2019, the platform was used in 519 consecutive patients. Mean patient age was  $66.3 \pm 10.6$  years; 243 patients (46.8%) were females. Mean lesion size was  $3.6 \pm 1.9$  cm and 134 lesions (25.8%) were over 5cm in size. Most lesions were located in the right colon (cecum, 152 (29.3%), ascending colon, 180 (34.7%), transverse colon, 124 (23.9%)). Delivery of the colonoscope loaded with the device was technically easy and required  $11.9 \pm 11.9$  minutes to reach the lesion. ESD was performed in 463 patients (89.2%) with en bloc resection rate of 94.8% (439 patients). Stabilization of the colonoscope with distal balloon and traction with suture loops attached to the fore-balloon facilitated colonic ESD, with intervention time of  $43.9 \pm 44.8$  minutes and total procedure time of  $91.5 \pm 90.1$  minutes. Serving as a conduit, the platform allowed quick delivery of endoscopic suturing device from rectum to the mucosal defect in  $2.3 \pm 2.7$  minutes.

## **Conclusion:**

New double balloon therapeutic platform markedly facilitates colonic ESD, significantly decreases dissection and total procedure time, and serves as a conduit expediting delivery of the endoscopic suturing device into the ascending colon.



**Figure 1:** Large cecal polyp. Endoluminal therapeutic platform is preloaded on the endoscope and its handle can be seen next to the patient.



**Figure 2:** ESD is completed. Polyp is removed en bloc with negative (Ro) margins of healthy mucosa.

**Disclosure:** S. V. Kantsevov: Apollo Endosurgery: Consulting; Endocages: Stock Shareholder; Lumendi: Consulting; LumenR: Other Activities Not in List ; Medrobotics: Consulting; Medtronic: Consulting; Olympus: Consulting; Vizballoon: Stock Shareholder; S. Levihim: No Conflicts; A. Agarwal: No Conflicts; A. Raina: Abbvie: Speaking and Teaching; Medtronic: Speaking and Teaching; P. J. Thuluvath: No Conflicts.



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