



Clinical Case Study



Per-oral Endoscopic Myotomy Using a Novel Bipolar Speedboat™ Device

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Patient History



A 50 year old male patient presented with dysphagia to solids and regurgitation for three years. Evaluation with endoscopy revealed dilated oesophagus and resistance at gastroesophageal junction. High resolution oesophageal manometry suggested type II achalasia cardia. Per-oral endoscopic myotomy (POEM) was planned in this case.

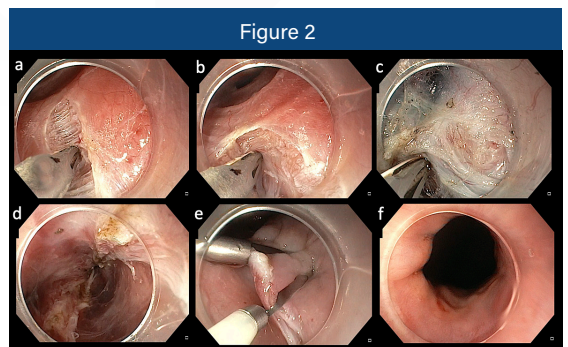
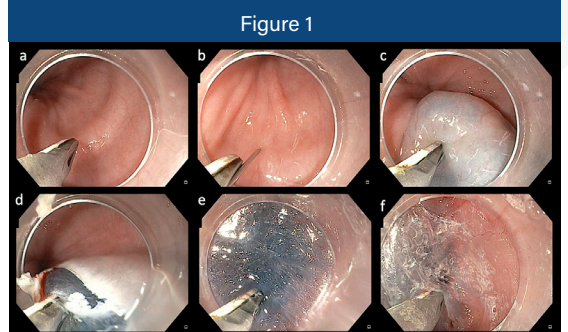
Procedure



- POEM was performed via posterior route (5 o'clock). The device used in this case series was the Speedboat Inject: a multi-functional device that offers both advanced bipolar radiofrequency (RF) energy for submucosal dissection (400 KHz and 35 W) and microwave energy for coagulation (frequency 5.8 GHz, power setting 10 W).
- Submucosal tunnelling was performed with the device in the neutral position (protective hull at the bottom, curved cutting edges on the lateral sides, and golden yellow insulated surface on the top) (fig. 1e). Safety was provided by the insulated protective hull and I was able to work closer to the muscle bed, allowing safety to the mucosa.
- Dissection of the submucosal fibres was performed in a left to right or vice versa direction (fig. 1f). RF energy with similar settings was used for mucosal incision, submucosal dissection, and myotomy. Advanced Bipolar technology during the incision, dissection, and myotomy provided focused safer energy delivery to the tissue to provide a cleaner and precise cut.
- Coagulation of intervening vessels was performed using microwave energy. The curved blade near the tip was gently pressed onto the bleeding site and coagulation energy was applied for 5
- Submucosal injection using diluted indigo carmine dye was given to create an adequate mucosal bulge (fig. 1a-c). This was achieved using the device's integrated injection needle reducing the need for instrument exchanges.
- The device was rotated so that the lateral cutting edges were in perpendicular orientation to the oesophageal mucosa. Mucosal incision was performed by gently pressing the device over the bulge created in the previous step (fig. 1d). Due to the device delivering Advanced Bipolar technology, contact of both electrodes with the mucosa was needed to obtain a precise and effective cut.

Conclusion

- POEM can be safely and effectively performed using the Speedboat Inject.
- Utilising a multifunctional device for this procedure provides both a clinical advantage and a cost saving to the hospital.
- The clinical advantages include a cleaner, precise dissection reducing possible thermal injury compared to monopolar devices and a more controlled and consistent coagulation.
- The cost savings can include the reduced need for additional devices such as a needle, coagulator, or clips.
- Also, from a patient and procedure perspective - reducing the risk of thermal damage and mucosal injury could lead to shorter hospital stay. Additionally, a multifunctional device with a focused and precise energy delivery, a shorter procedure time can also be achieved.



to 10 seconds. The appearance of small bubbles indicated ongoing coagulation and adequate contact of the device with the bleeding surface. Active bleeding was controlled with the device (microwave coagulation), without the need for instrument exchange.

- Myotomy was performed after rotating the knife in an orientation similar to the one used for mucosal incision (fig. 2a-d).
- Finally, the mucosal incision was closed using endoclips (fig. 2e). Wide open gastroesophageal junction could be appreciated after completion of the procedure (fig. 2f). There were no intraprocedural adverse events.

