**Supplementary Table 1: Clinical characteristics and perioperative outcomes of 22 patients undergoing POEM-SSMD.**

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| --- | --- | --- |
| **Baseline characteristics** | | **Values** |
| Age, mean (range) (years) | | 49.82 (19–76) |
| Sex, male/female (*n*) | | 15/7 |
| Symptom duration, median (range) (months) | | 120 (3–480) |
| **Ling classification, *n* (%)** | | |
| Ling IIa type | | 3 (13.6) |
| Ling IIb type | | 2 (9.1) |
| Ling IIc type | | 16 (72.7) |
| Ling IIIr type | | 1 (4.5) |
| **Prior treatment, *n* (%)** | | |
| Balloon dilatation | | 4 (18.2) |
| POEM | | 3 (13.6) |
| Laparoscopic Heller myotomy | | 3 (13.6) |
| Botox injection | | 1 (4.5) |
| Balloon dilatation and POEM | | 1 (4.5) |
| Balloon dilatation and Laparoscopic Heller myotomy | | 1 (4.5) |
| Overall | | 13 (59.1) |
| **Procedure-related parameters** | | |
| Operation time, mean (range) (min) | 62.32 (23–130) | |
| Tunnel length, median (range) (cm) | 7 (2–12) | |
| Myotomy length, mean (range) (cm) | 5.45 (3–8) | |
| Hospitalization, median (range) (day) | 7 (5–12) | |
| **Adverse events** | | |
| Minor adverse events |  | |
| Substernal pain, *n* (%) | 6(27.3) | |
| Pleural effusion, *n* (%) | 1 (4.5) | |
| Neck subcutaneous emphysema, *n* (%) | 2 (9.1) | |
| Mucosal perforation, *n* (%) | 3 (13.6) | |
| Postoperative fever, *n* (%) | 4 (18.2) | |
| Follow-up, mean (range), (months) | 28.67 (10–63) | |

POEM-SSMD: Peroral endoscopic myotomy with simultaneous submucosal and muscle dissection