Supplementary Figure 1 Barium esophagram revealed the lower esophageal stenosis and dilatation above the stenosis, which presenting as a typical mouse tail sign.
Supplementary Figure 2A 2B Enhanced computed tomography revealed dilatation of the upper esophagus, thickened lower esophageal wall, and a nonuniformly enhanced mass located in the lower esophagus.
Supplementary Figure 3 High resolution manometry showed that the resting pressure of lower esophageal sphincter was 34.9mmHg, but swallow induced lower esophageal sphincter relaxation was incomplete. Integrated relaxation pressure was 28.5 mmHg. No normal peristalsis, 100% swallows with premature contractions (distal latency <4.5 s), 70% swallows with distal contractile integral >450 mmHg·s·cm.
Supplementary Figure 4 After the submucosal tunnel in the lower esophagus was constructed, disordered circular muscle and unrecognizable hard tissues were found.