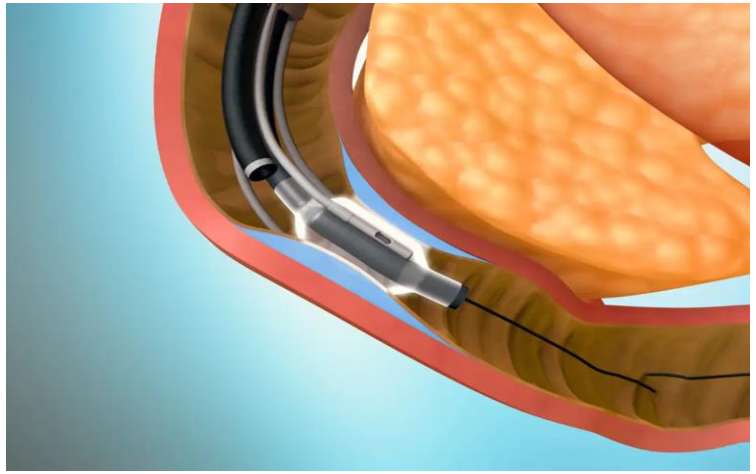
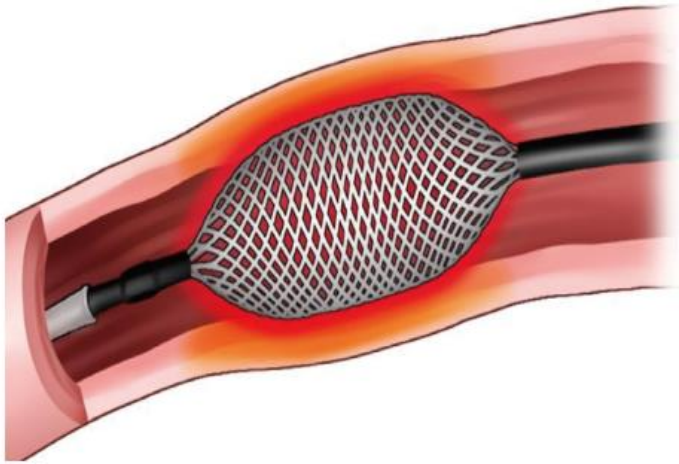
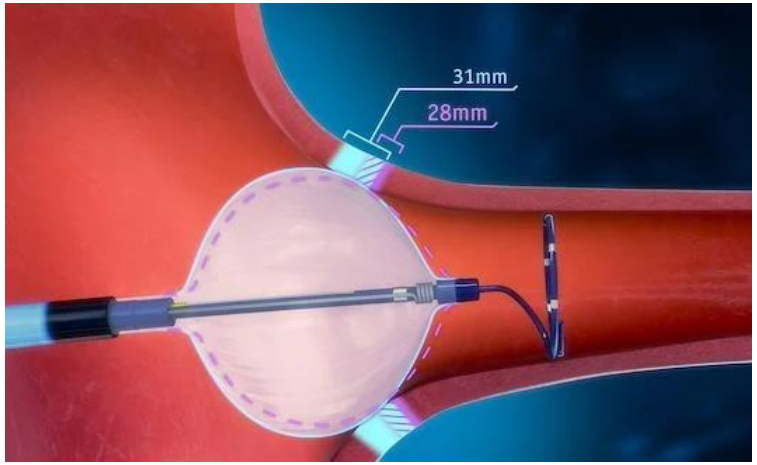
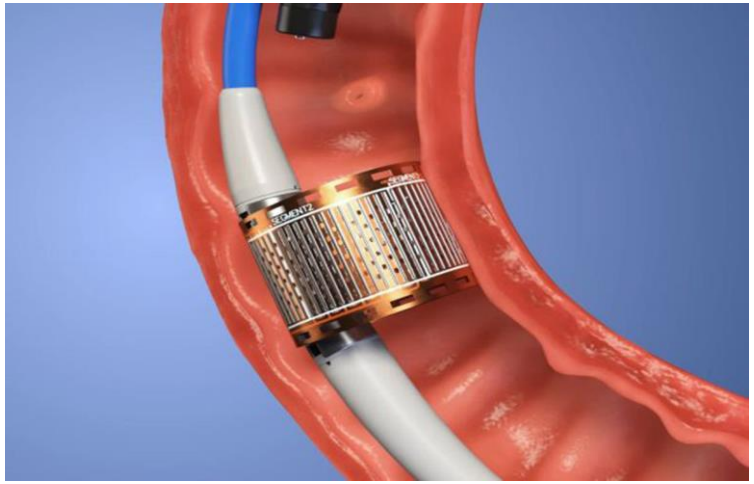
Endoscopic Duodenal Mucosal Resurfacing for Lowering Fasting Blood Glucose in Patients with Type 2 Diabetes: A Clinical Case Report

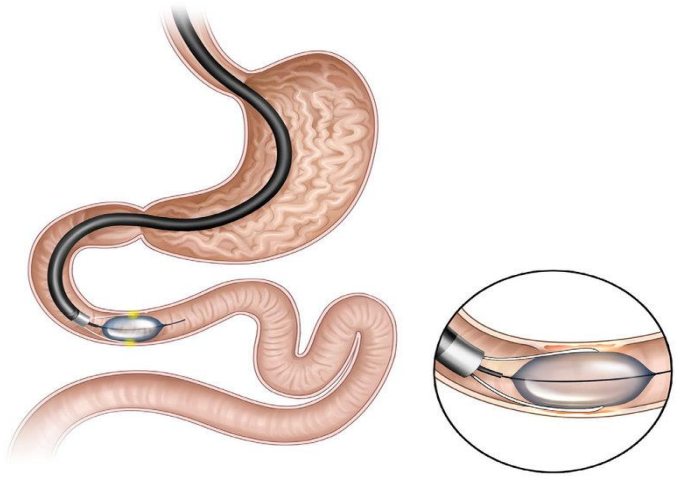
Hua Meng, Bojun Zhou; Siqi Wang, Biao Zhou, Zhengqi Li, China-Japan Friendship Hospital, Beijing Sport University

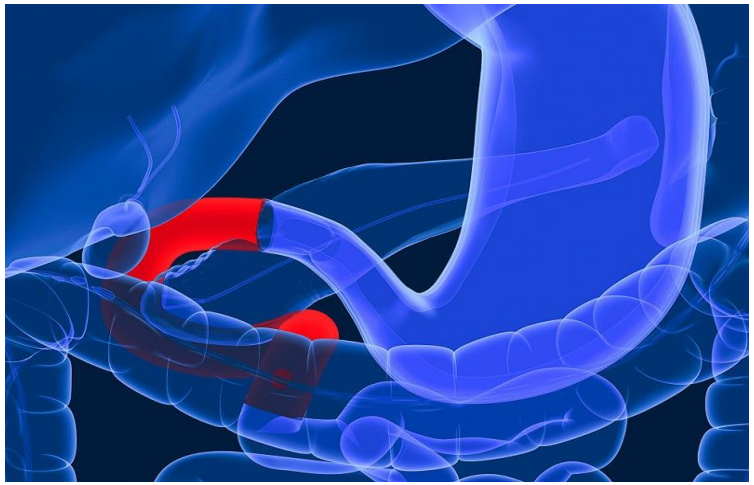








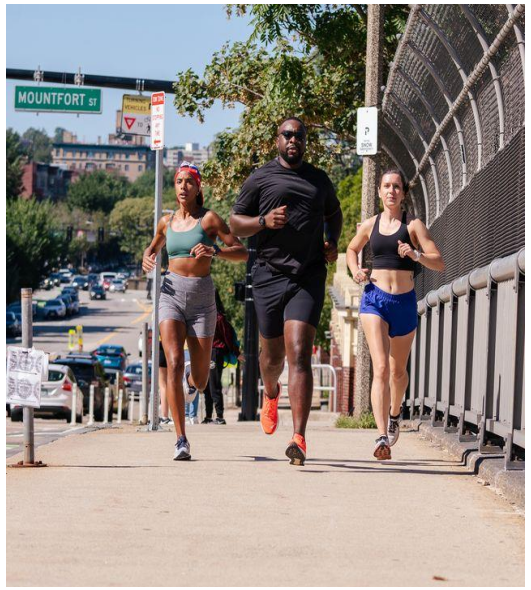


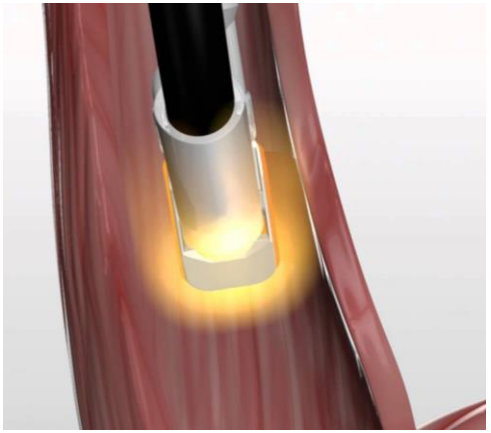


Background

Type 2 diabetes mellitus (T2DM) is a metabolic disorder characterized by persistently elevated blood glucose levels, caused by a combination of environmental and genetic factors, and it significantly impacts the health of hundreds of millions of people. Current methods for controlling blood glucose in T2DM patients primarily include dietary control, exercise intervention, pharmacotherapy, and metabolic surgery. However, while these methods have their advantages, they also have limitations.

Duodenal Mucosal Resurfacing (DMR) is a novel, minimally invasive endoscopic procedure that improves fasting blood glucose levels in patients with type 2 diabetes by ablating the duodenal mucosal layer. This technique has been applied in clinical treatments in several countries.

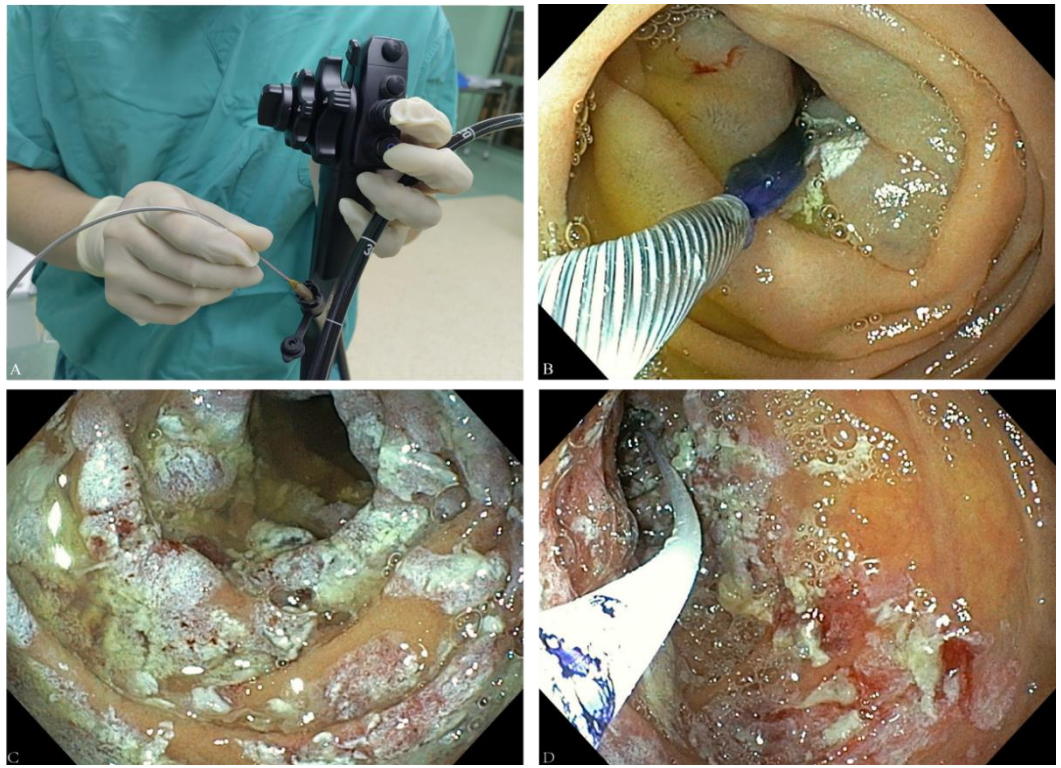




Methods

- **Patient Information**: Female, 63 years old
- **History of Diabetes**: 8 months
- **Device**: Single-channel flexible endoscope (EVIS GIF-N170; Olympus, Tokyo, Japan; Barrx Channel; Medtronic, Minneapolis, USA)
- **Duration of Procedure**: 90 minutes
- **Length of Duodenal Ablation**: 13 cm

No adverse events occurred



Results

One week after the procedure, the patient's fasting blood glucose showed significant improvement.

- **After 1 month**: All hypoglycemic medications were discontinued, fasting blood glucose decreased from **7.0** mmol/L to **6.0** mmol/L, postprandial blood glucose decreased from **15.7** mmol/L to **11.8** mmol/L, and HbA1c decreased from **7.1**% to **6.2**%.
- **After 6 months**: The patient lost **2.1** kg in weight, and HbA1c decreased to **6.0**%.
- **After 18 months**: Fasting blood glucose was controlled at **5** mmol/L, postprandial blood glucose was controlled at **8.5** mmol/L, and the total weight loss was **3.4** kg.

Thanks