Treatment of A case of Fistula after SG+IJB

Dr. Zhiyong Dong (DZY)

Prof.CC Wang--team fellow
IFSO-APC training center

Bariatric Surgery Department,
the Affiliated Hospital of Jinan University, Guangzhou,
China

Patient information

- The patient was a 31-year-old official lady, admission in Dec 15, 2022

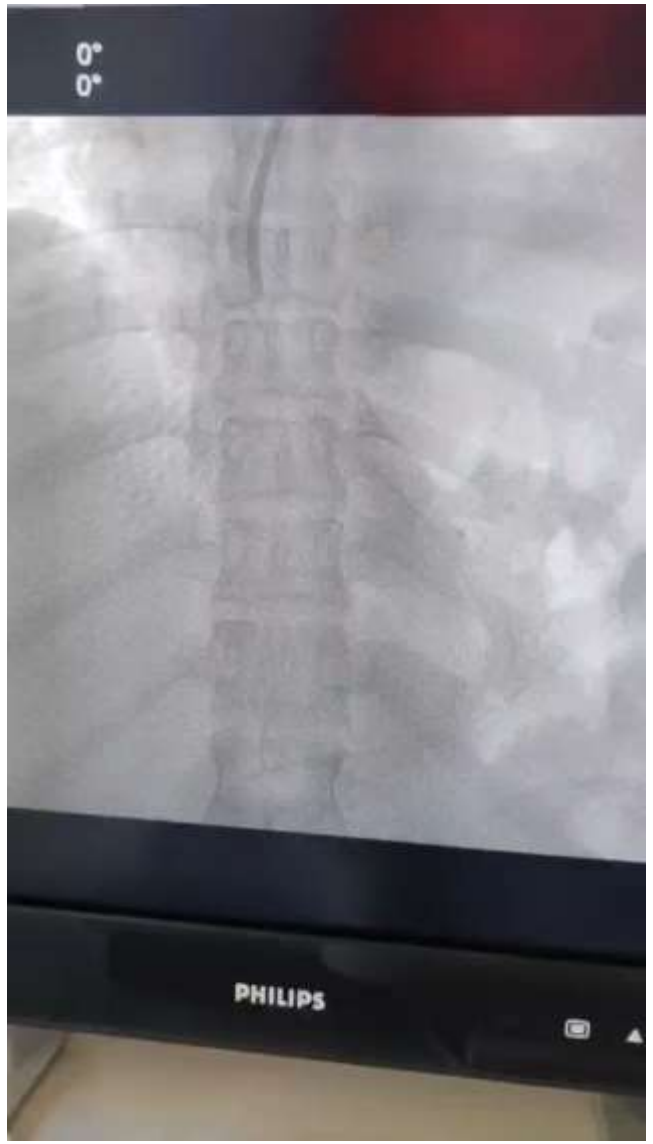
- She presented to the Bariatric surgery department of the first affiliated hospital of Jinan University with complaints of gastric fistula.

Patient information

- Performed SG +JJB in a local hospital for morbid obesity（162 cm, 105kg, BMI 40 kg/m2）with type 2 diabetes, OSAS, gallstones and metabolic syndrome on Feb 24, 2022.

Patient information

- On March 14, 2022, which was **20 days post-surgery**, the patient was urgently admitted due to sudden abdominal pain accompanied by hematemesis (vomiting blood) and melena (bloody stool) after eating. The diagnosis of gastrointestinal bleeding was considered, and treatments such as gastric and intestinal decompression, fluid replacement, and hemostasis were administered.
- CT scan revealed pleural effusion, irregular density shadow in the left upper abdomen, intraperitoneal hemorrhage, and intraluminal intestinal bleeding. Combined with the patient's medical history and left shoulder pain, the diagnosis was determined as **gastric leaking with bleeding**.
- On March 15, the patient was placed on fasting, given anti-infection treatment, and a nutritional tube was inserted. The patient's condition stabilized after enteral nutrition.
- The patient was discharged on **April 25.** During the period from April 2022 to December 2022 (8 months), a Upper Gastrointestinal Contrast was used for gastric fistula imaging every month, and **leakage of contrast agent from the gastric fistula** was observed consistently.



Diagnosis and treatment

- ✓ Chief Complaint: Recurrent left shoulder pain for 9 months.
- ✓ Physical Examination: Abdominal laparoscopic surgical scars, as well as cesarean section scars, without tenderness or rebound tenderness.
- ✓ Vitals: T: 36.4° C, P: 72 bpm, R: 16 bpm, BP: 83/59 mmHg.
- ✓ Height: 162 cm, Weight: 60.6 kg, BMI: 23.1 kg/m2. Waist circumference: 81 cm.
- ✓ Nasogastric and gastric tube in place.
- ✓ Enteral nutrition: 1500 ml/1500 kcal.
- ✓ Hepatobiliary ultrasound: Gallbladder has a normal shape, with a concentric circular high-density shadow inside, well-defined, measuring about 2.5 × 2.9 cm. Diagnosis: Gallbladder stones.
- ✓ Pulmonary function, colonoscopy, and other examinations are essentially normal.

Diagnosis and treatment

ABO血型	"O"型
Rho(D)	阳性(+)
白细胞计数WBC	4.26
嗜中性粒细胞百分比	69.07
淋巴细胞百分比	23.59
单核细胞百分比	5.50
嗜酸性细胞百分比	1.37
嗜碱性细胞百分比	0.4
嗜中性粒细胞绝对值	2.9
淋巴细胞绝对值	1.0
单核细胞绝对值	0.2
嗜酸性细胞绝对值	0.0
嗜碱性细胞绝对值	0.0
红细胞计数RBC	3.8
血红蛋白HGB	117.0
红细胞压积HCT	36.21
平均红细胞体积	93.38
红细胞平均血红蛋白含量	30.34
红细胞平均血红蛋白浓度	324.90
红细胞分布宽度(SD)	41.13

游离三碘甲状腺原氨酸(FT3)	5.04
游离甲状腺素(FT4)	9.24
C-肽 (C-P)	1.13
叶酸(Folate)	10.52
胰岛素(Insulin)	1.80
梅毒特异性抗体检测(Tp-Ab)	0.017
乙肝病毒表面抗原(HBsAg)	<0.0300
乙型肝炎表面抗体(Anti-	9.709
乙肝病毒e抗原 (HBeAg)	<0.040

钾(K)	4.69
钠(Na)	143.3
氯(Cl)	106.4
总二氧化碳(CO2)	28.9
葡萄糖(GLU)	5.01
尿素 (UREA)	4.27
铁(Fe)	15
转铁蛋白 (TRF)	2.132
淀粉酶(AMY)	29
丙氨酸氨基转换酶(ALT)	13
门冬氨酸氨基转换酶(AST)	17
γ_谷氨酰基转移酶(γ_GT)	10

碱性磷酸酶(ALP)	80
胆碱酯酶(CHE)	13537
总蛋白(TP)	73.7
白蛋白(ALB)	39.0
前白蛋白	138.1
球蛋白(GLB)	34.7
白球比例(A/G)	1.12
总胆红素(TBIL)	24.5
结合胆红素(DBIL)	9.4

血常规 (Complete Blood Count, CBC)、生化 (Blood Chemistry)、凝血四项 (Coagulation Profile)、糖尿病二项 (Diabetes Panel)、甲功三项 (Thyroid Panel)、贫血四项 (Anemia Profile)、糖化血红蛋白 (Hemoglobin A1c)、D-二聚体 (D-dimer)、肿瘤标志物 (Tumor Markers)
(Note: The list of medical tests and their results, indicating that all the results are normal.)

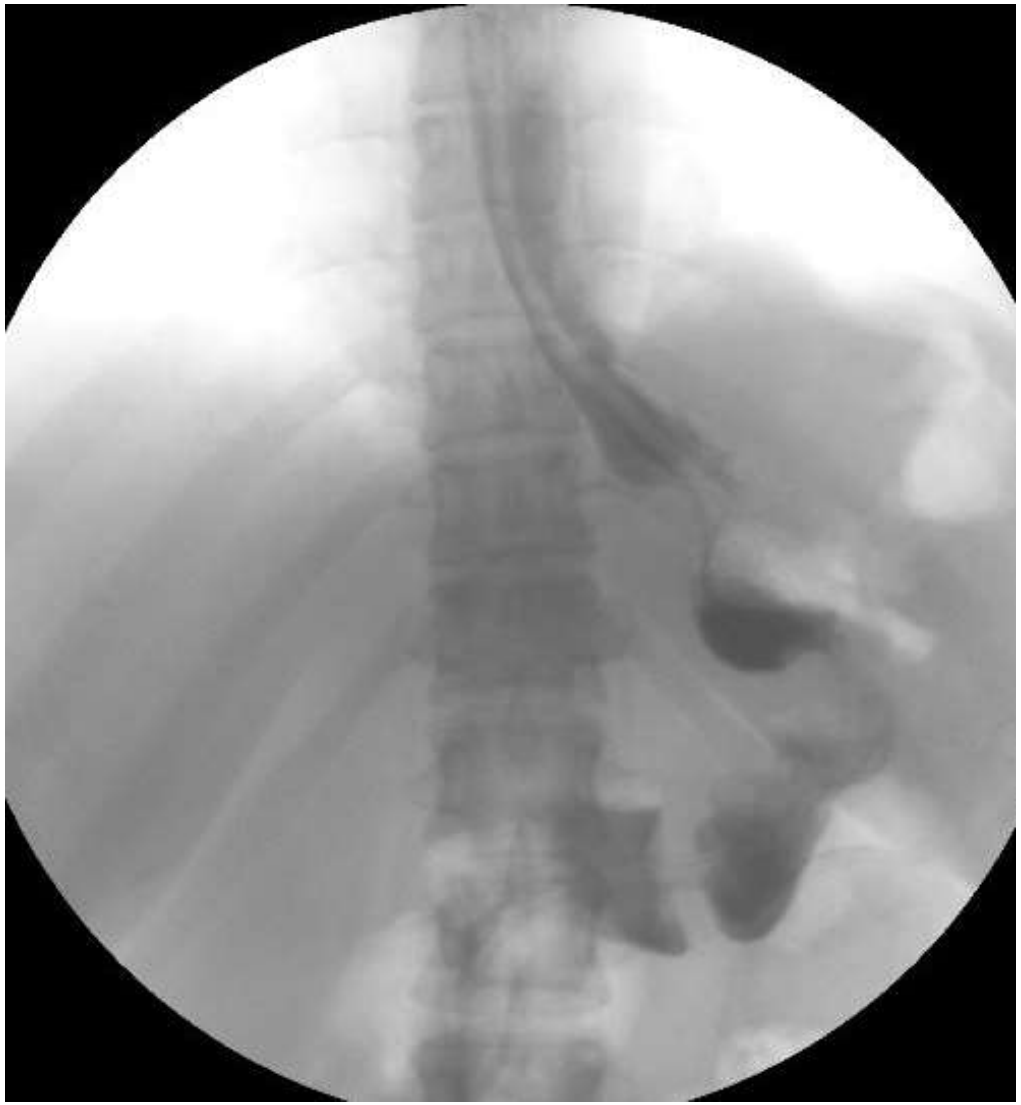
凝血酶原活动度（%）
活化部分凝血活酶时间
凝血酶原时间
凝血酶时间
纤维蛋白原
凝血酶原时间国际标准

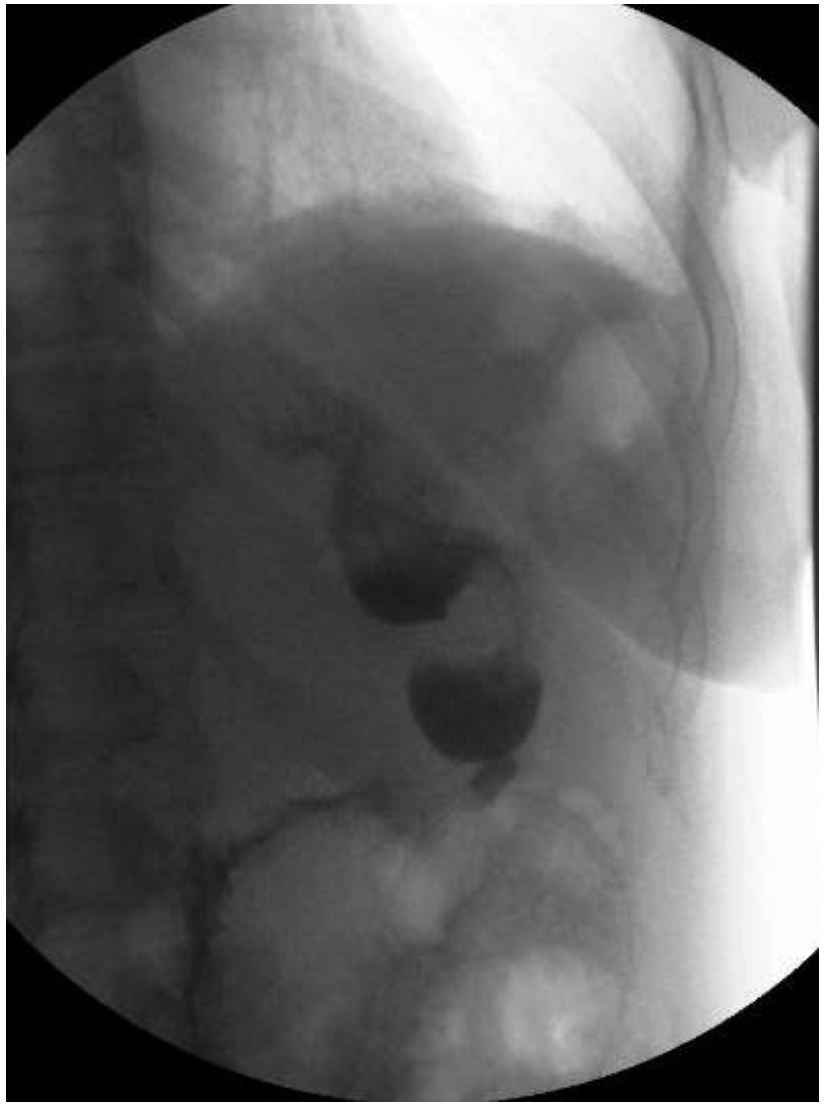
D-二聚体定量	460

糖化血红蛋白(HbA1c)	5.2	
糖类抗原199(CA199)	6.5	U/mL
甲胎蛋白(AFP)	3.93	ng/ml
癌胚抗原(CEA)	0.89	ng/mL

Gan TJ. Consensus Guidelines for the

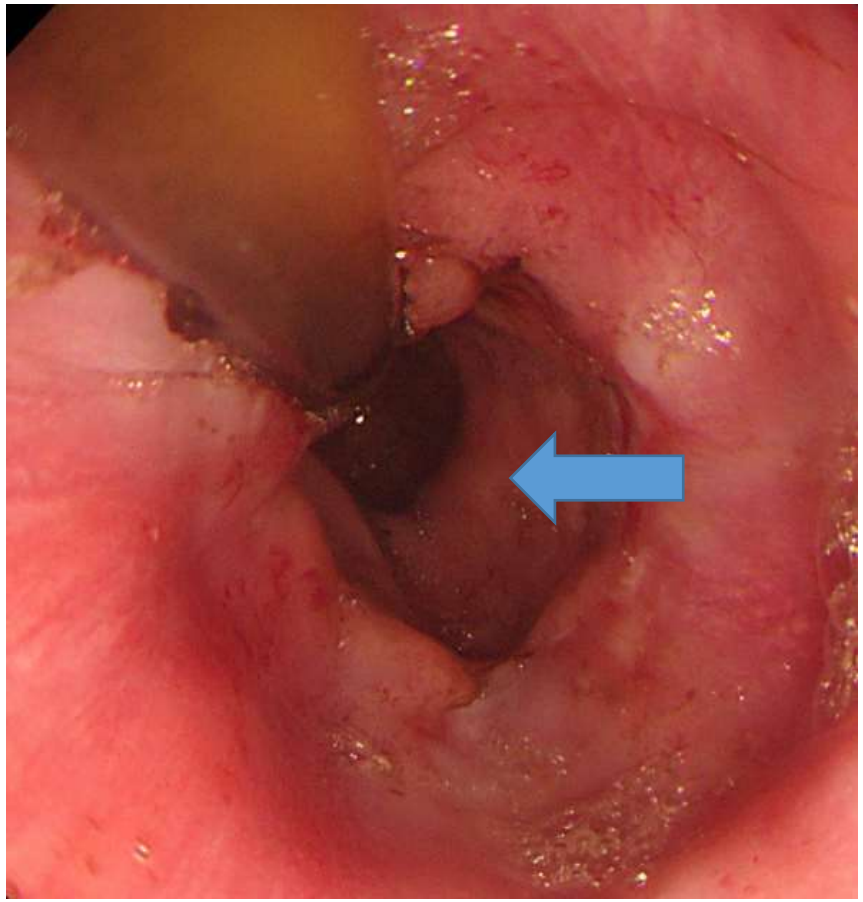
Diagnosis and treatment

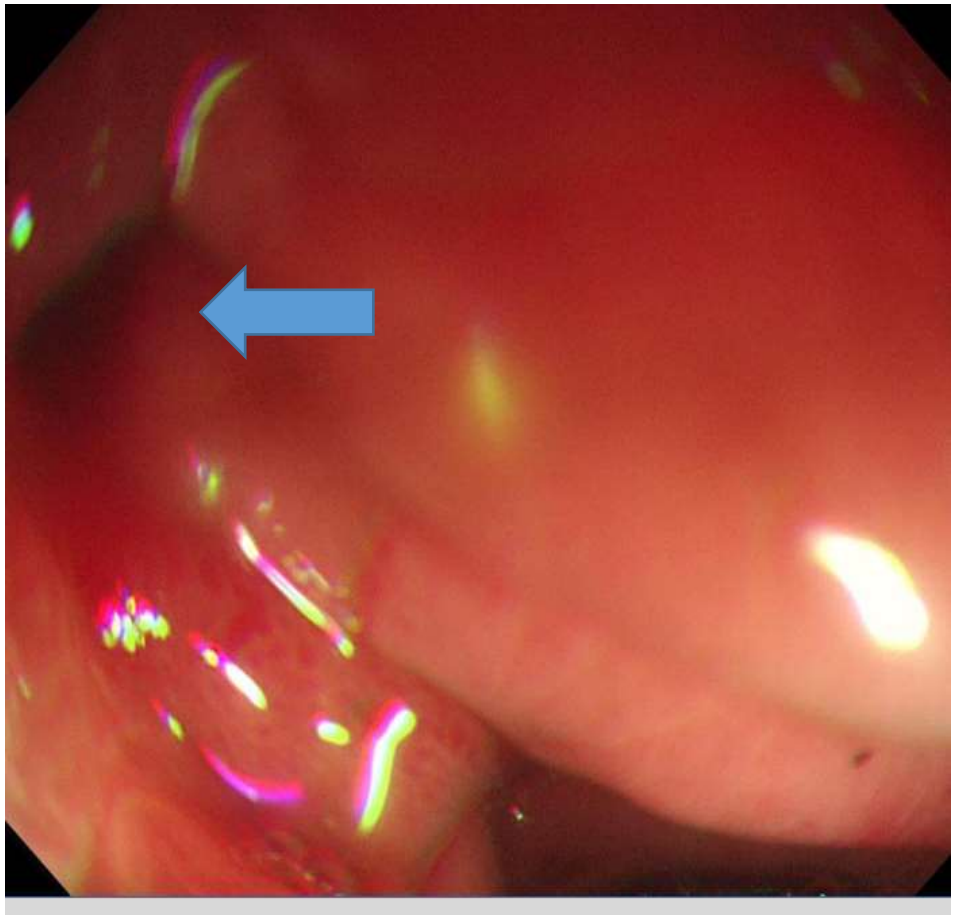




Upper Gastrointestinal Contrast: No stenosis or contrast leakage observed at the anastomotic site.

Diagnosis and treatment





Gastroscopy reveals:
A fistula is observed on the left side approximately 1 cm from the gastroesophageal junction, with a diameter of about 0.6 cm.

The area indicated by the arrow is the location of the fistula

Diagnosis and treatment

Primary Diagnosis

- Gastric Fistula （胃瘘）
- Gallbladder Stones

Evidence

Surg Obes Relat Dis. 2023 Jun;19(6):585-592. doi: 10.1016/j.soard.2022.12.017. Epub 2022 Dec 10.

Laparoscopic Roux-en-Y fistulojejunostomy as a salvage procedure in patients with chronic gastric leak after sleeve gastrectomy

Panagiotis Lainas [1], Evangelia Triantafyllou [2], Virginie Ben Amor [3], Jean Gugenheim [5], Ibrahim Dagher [6], Imed Ben Amor [5]

Affiliations + expand

PMID: 36658084 DOI: 10.1016/j.soard.2022.12.017

Results: A total of 473 records were identified by the initial search, and 389 papers were excluded after screening by title and abstract. Of the remaining 84 studies, 28 were identified; 1 was excluded because it had combined LSG with ileal interposition, 1 for different language than English or French, 4 for repetitive information, and 5 for video reports or technical description. A total of 114 patients were assessed in the 12 studies, and the number of patients ranged from 3 to 21. The review included 65 cases of total gastrectomy with esojejunal anastomosis (57%), 41 cases of fistulojejunostomy (35.9%), and 8 cases of Roux en Y gastric bypass (7.1%). Leaks occurred more frequently (37.5%, 3 cases) following Roux-en-Y gastric bypass, fistulojejunostomy (21.9%, 9 cases), and esophagojejunal anastomosis (7.7%, 5 cases). The healing time for a leak following definitive reconstructive surgeries varied between 10 and 165 days. Mortality was recorded in only 1 case (0.8%).

Conclusion: Surgery should be considered as a failure of the endoscopic approach to treat a chronic leak after LSG. More research is needed to clearly identify the appropriate treatment of chronic leak after LSG, but it is obvious that clinicians must be aware of and prepared to treat bariatric patients who develop this dreaded complication.

中华肥胖与代谢病电子杂志 2018 年 2 月第 4 卷第 1 期 Chin J Obes Metab Dis(Electronic Edition),Feb 2018,Vol.4,No.1

肥胖代谢外科修正手术东亚专家共识（2018）

中国医师协会外科医师分会肥胖和糖尿病外科医师委员会

1. 手术适应证

（1）减肥效果不佳或复胖；（2）肥胖相关的代谢病与合并症治疗效果欠佳或复发；（3）保守治疗无效的严重术后并发症。（4）初次减肥手术后体质量指数（body mass index，BMI）≥35 kg/m^{2}或≥27.5 kg/m^{2}且伴有严重的控制不佳的2型糖尿病等肥胖相关合并症。

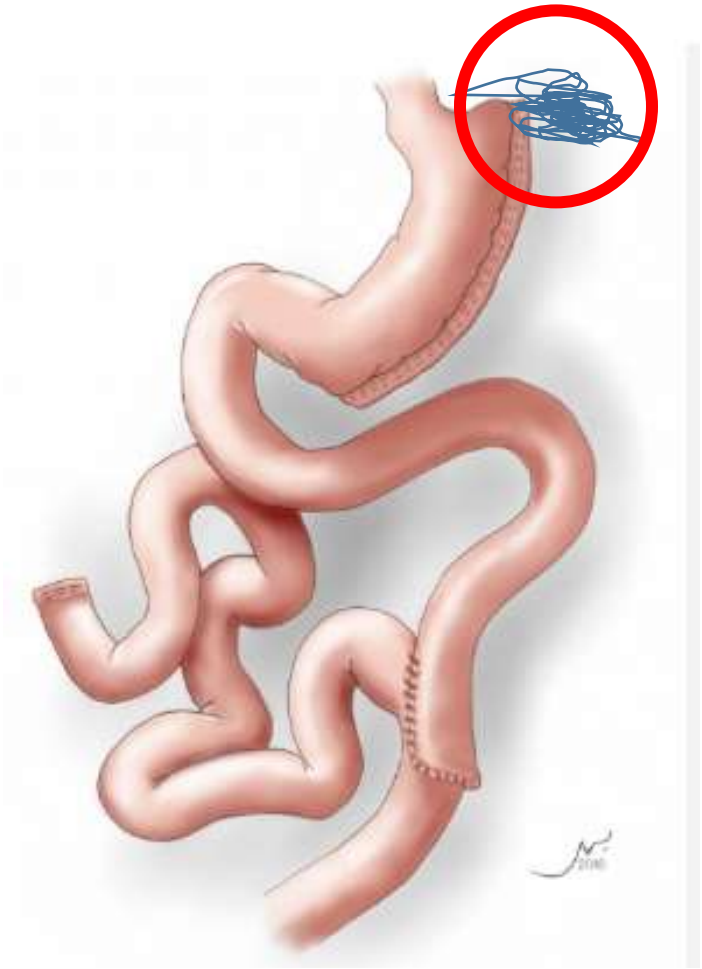
Our center's experience:

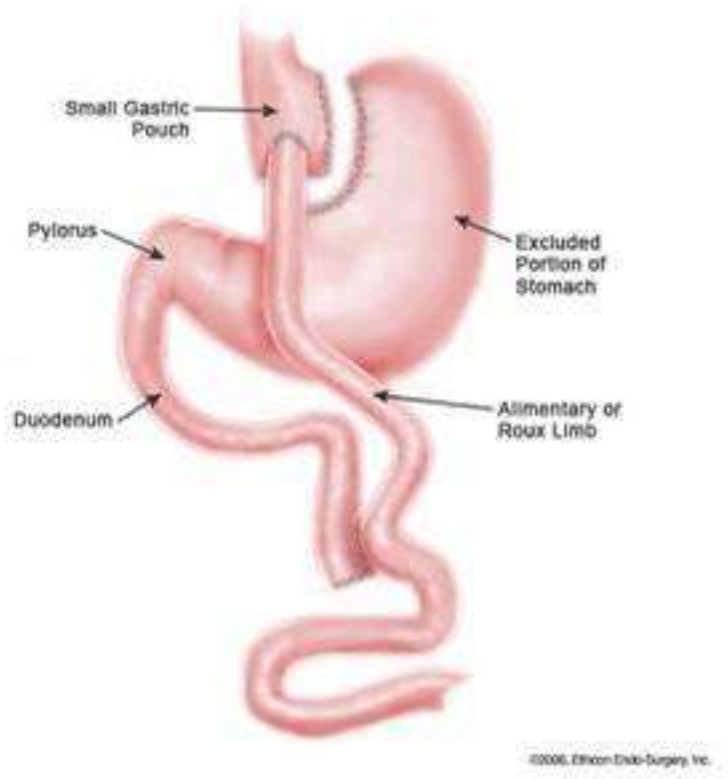
11 Out of 14 cases where sleeve gastrectomy-associated gastric fistulas were corrected to **BYGB,** all of them were cured.

Among these cases, 3 were revised to Roux-en-Y gastric bypass (RYGB), which did not heal initially. Subsequent fistula-to-jejunum anastomosis was performed, leading to successful healing and cured.

Diagnosis and treatment

- Treatment plan: revision from Sleeve Gastrectomy with Jejunojejunostomy (SG-JJB) to Roux-en-Y Gastric Bypass surgery along with cholecystectomy.





Diagnosis and treatment

- Rationale:

✓ Considering the patient's medical history and the evidence from the aforementioned revision surgery, the corrective procedure was deemed the optimal solution.

✓ Nine months post-surgery, repeated contrast studies continued to indicate contrast leakage, suggesting the persistence of the gastric fistula.

✓ The patient has experienced discomfort and left shoulder pain for 9 months.

✓ The patient has been under fasting and enteral nutrition status.

✓ The patient's desire is to be able to eat and alleviate the symptoms of left shoulder pain.

术者：王存川 董志勇

暨南大学附属第一医院

Revision surgery

Video

Progress and Recovery

Recovery process:

The patient was discharged one month after the surgery on Jan 15, 2023, reporting no shoulder pain, abdominal pain, and exhibiting normal blood and imaging indicators.

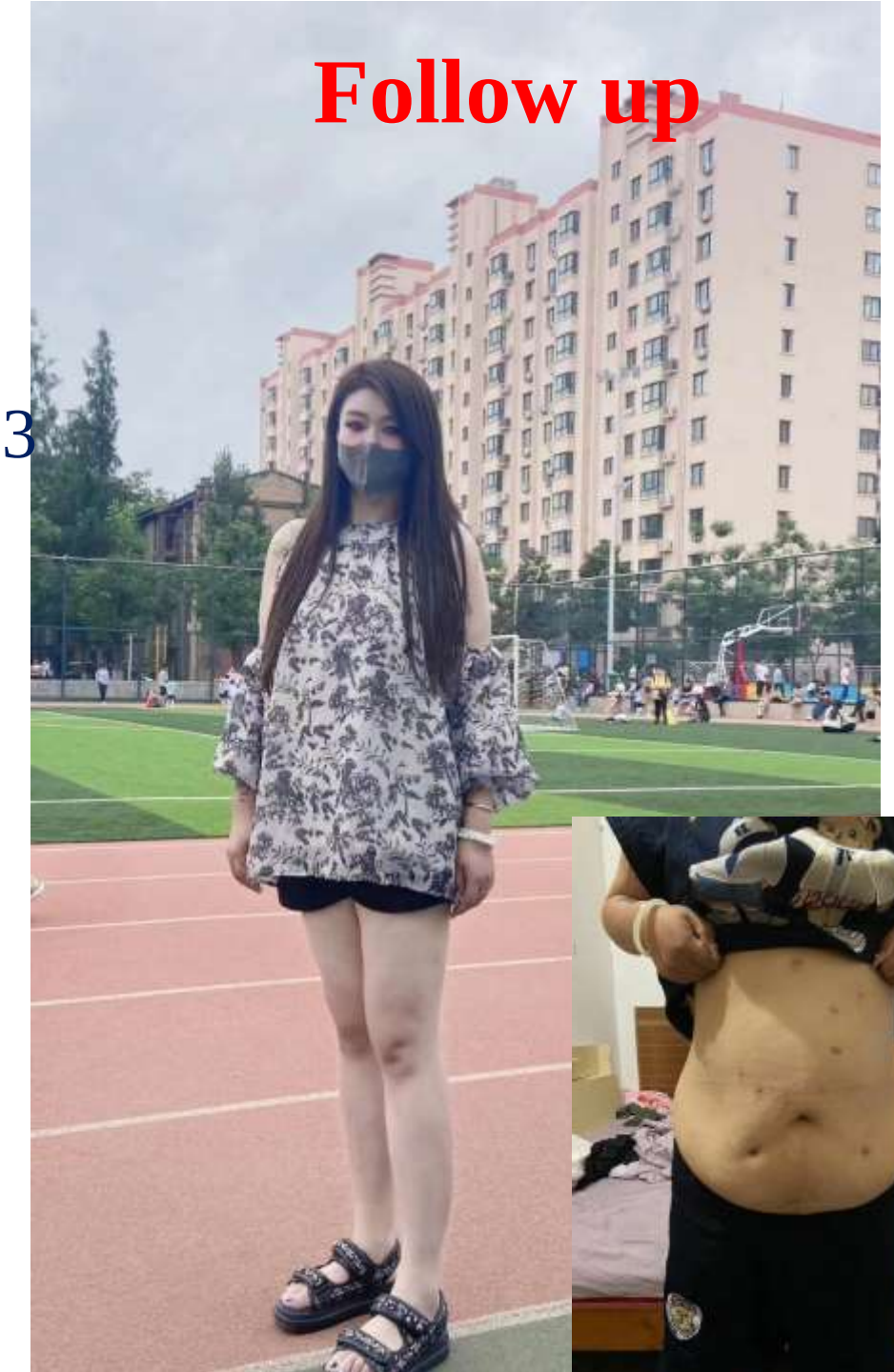
Follow up

Follow up on Aug 6, 2023

Weight： 120 kg
BMI 22.8 kg/m2

Examination: normal

Note:
All photos have received patient approval



Conclusion and Thinking

- ✓ Proximity of Gastric Fundus to Gastroesophageal Junction: The gastric fundus is situated too close to the gastroesophageal junction.

- ✓ Technical Issues with Intestinal Anastomosis: Narrowing, Adhesions, Twisting - Pressure: Challenges encountered at the intestinal anastomosis site, including issues like narrowing, adhesions, twisting, possibly leading to high pressure.

- ✓ Concerns Regarding the Final Staple in Gastric Fundus: Questions or concerns regarding the placement of the final staple in the gastric fundus.

IFSO-APC Meeting 2023

SAVE THE DATE
WELCOME TO CHINA!

Thank you for your attention and interest.

Dr. Zhiyong Dong, dongzy2008@163.com