# Evaluation of single incision intragastric surgery for the gastric gastrointestinal stromal tumors with intra-luminal growth pattern

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SAGES 2025

## Introduction

・Laparoscopic endoscopy cooperative surgery(LECS)is widely accepted for the gastrointestinal stromal tumor(GIST)with intra-luminal growth pattern.

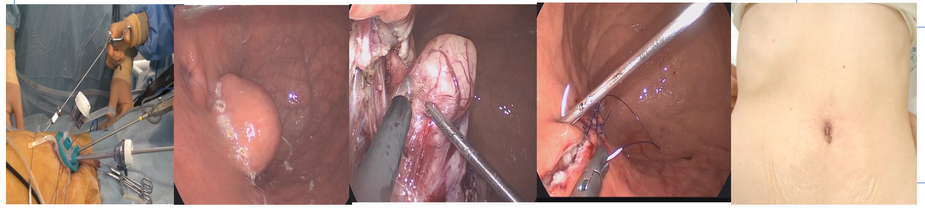
・Although we experienced difficult cases of LECS , according to the location and growth pattern of the gastric GIST. Therefore we introduced intragastric surgery(IS)for the gastric GIST.

## Purpose

To clarify the efficacy and safety of IS for gastric GIST with intra-luminal growth pattern, we compared surgical outcomes between the IS group and LECS group retrospectively.

## Methods and Procedures

The patients with gastric GIST less than 5cm ,which exist upper body of stomach to EG junction was extracted.7 patients underwent single incision IS for April 2021 to April 2024.On the contrary ,6 patients underwent LECS for April 2018 to April 2021.We compared surgical outcomes of these two groups.



Procedures of Single incision laparoscopic surgery(IS)

a :make gastrostomy at the navel

b :.introduce x-Gate® at the navel and insert BJ needle® into the stomach

c: marking around the tumor using electric cautery

d：dissecting around the tumor using electric cautery and extracting tumor via navel

e：closing the gastric defect

f: observe the stomach by the endoscope after surgery

g: closing the gastrostomy

## Results

**Table1** Baseline characteristics

| | ISgroup(n=7) | LECS group(n=6) | P-value |
|---|---|---|---|
| mean age（year) | 71(58-88) | 69(58-76) | 0.548 |
| male/female(n) | 5:2 | 5:1 | 0.864 |
| BMI(%) | 23(21-26) | 24(20-26) | 0.798 |
| tumor size(cm) | 3.2(1.3-4.5) | 2.9(1.7-4.6) | 0.658 |
| tumor location(n) | | | |
| anterior wall | 2 | 2 | |
| posterior wall | 2 | 1 | |
| lesser curvature | 2 | 2 | |
| greater curvature | 1 | 1 | |
| upper gastric body | 5 | 6 | |
| EGJ | 2 | 0 | |

The surgical time was significantly short in the IS group(p=0.032).Postoperative hospital stay is also short in the IS group(p=0.028). However ,there’re no significant differences in postoperative complication and blood loss. Cosmetic results showed excellent in the IS group.

**Table2** Surgical outcomes

| | ISgroup(n=7) | LECSgroup(n=6) | P-value |
|---|---|---|---|
| Operation time（min) | 115(90-220) | 152(82-260) | 0.032 |
| Blood loss(ml) | 25(2-70) | 32(2-45) | 0.386 |
| Length of post operative stay(day) | 7.2(5-8) | 12.4(7-15) | 0.028 |
| conversion to laparotomy(n) | 0 | 0 | 1 |
| Complications＊ | 0 | 1 | 0.864 |
| Modified-Fletcher classification(n) | | | 0.526 |
| very low | 4 | 3 | |
| low | 3 | 2 | |
| moderate | 0 | 1 | |
| high | 0 | 0 | |
| Follow-up median duration(month) | 18.6(3.4-38.4) | 42.8(19.8-68.4) | 0.024 |

＊≧Clavien-Dindo GradeⅢ

## Conclusion

Single incision IS for the gastric GIST with intra-luminal growth pattern may be one of the useful therapeutic option and minimally invasive procedure.

## References

1)Kanehira E, Omura K, Wakasa R, et al: A technique of percutaneous endoscopic intragastric surgery. Minim Invasive Ther Allied Techonl 7:15-20,1998
2)Fujishima H,et al:Serosal and muscular layers incision technique in laparoscopic surgery for gastric gastrointestinal stromal tumors.Asian J Endosc Surg 10:92-95,2017