

SHENYUN

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LAPAROSCOPIC TROCAR





PRODUCT TRADING

Laparoscopic trocar

■ Features

- Integrated innovative design, with both puncture and suture functions, one device for two uses.
- Visible suture for greater safety.
- Low learning curve. One-minute demonstration/training. Suture one puncture hole in 30 seconds.
- Avoid reinflation, always maintain pneumoperitoneum and prevent tissue damage.
- No need for separate configuration. It has medical economic value.

■ Precautions

- Choose a puncture site that is easy for surgery, beautiful and causes little trauma. Avoid the inferior epigastric artery and other vessels.
- Increase distance between abdominal wall and retroperitoneum for safety.
- Moderate force in puncture. Shallow entry.
- No violence. Tough abdominal wall? Rest and try again. Don't be reckless.
- Pneumoperitoneum needle/puncture device at 90° to abdominal wall. Adjust to 45° towards pelvic cavity after fascia.
- Midline: perpendicular to skin. No angle.
- Left-right: 0°. No deviation from midline to avoid common iliac vessel injury.
- Direct puncture: remove needle and fill with CO₂. Remove towel forceps after pneumoperitoneum.
- Ensure intra-abdominal pressure.
- Transillumination under laparoscope to avoid abdominal wall vessels.

■ Product composition

Disposable abdominal wall suture device and set consist of puncture device, abdominal wall suture device, specimen collection bag, Veress needle and guide head.

- **Puncture device:** It consists of a puncture sleeve and a puncture rod. The puncture sleeve consists of a sheath cap (including a seal), an air injection valve, a cannula seat, and a cannula;

The puncture rod consists of a puncture tube and a puncture cone.

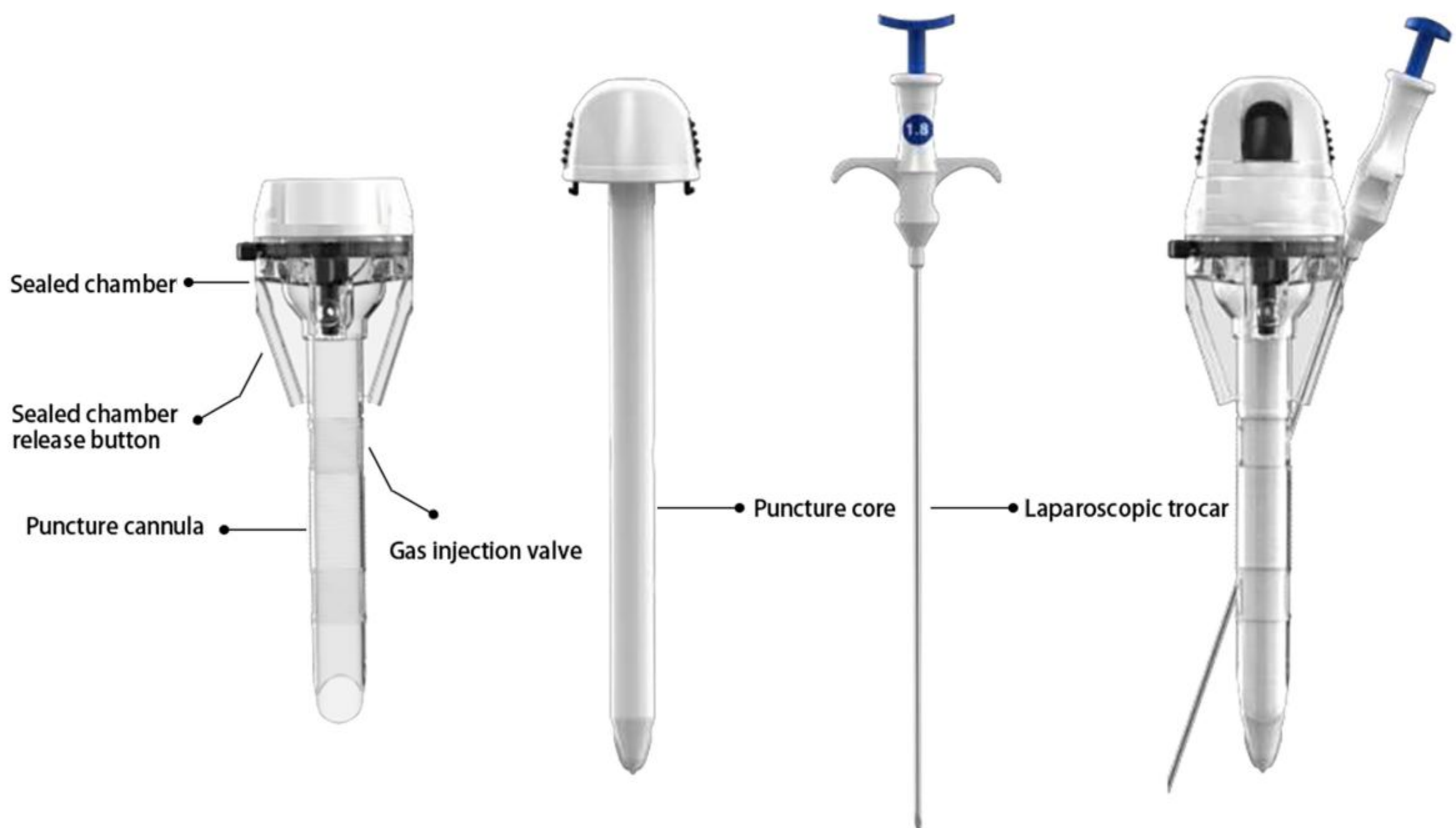
The puncture device is divided into eight specifications according to the cannula size: 5, 10, 12, 15, 5A, 10A, 12A, and 15A. The letter A indicates a long version, and the letter without a letter indicates a regular version.

- **Pneumoperitoneum needle:** It consists of a puncture rod, a cannula, a cannula seat, and an air injection valve.

Veress needles are divided into two sizes, 120 and 150, according to different cannula lengths.

- **Abdominal wall suturing device:** consists of puncture needle, handle, cap, button, and clamp.

Abdominal wall staplers are divided into four specifications: 1.4, 1.6, 1.8, and 2.0 according to the diameter of the needle tube.



■ Puncturer

model	Specification	Working length of casing mm	Casing inner diameter mm
SY13-01-01	5	100	5.8
SY13-01-02	10	101	10.9
SY13-01-03	12	101	12.9
SY13-01-04	15	101	15.6
SY13-01-05	5A	150	5.8
SY13-01-06	10A	150	10.8
SY13-01-07	12A	150	12.5
SY13-01-08	15A	150	15.6

■ Venere needle

model	Specification	Casing inner diameter mm	Total length of puncture cannula mm
SY13-02-01	120	2.1	120
SY13-02-02	150	1.8	150

■ Abdominal wall suture device

model	Specification	Needle length mm	Needle diameter mm
SY13-03-01	2.0	150	2.1
SY13-03-02	1.8	150	1.8
SY13-03-03	1.6	150	1.6
SY13-03-04	1.4	150	1.4

■ Specimen retrieval bag

model	Specification	Bag opening diameter mm	Bag depth mm
SY13-04-01	1.0	95	150



Clinical prospective study

■ Transthoracic hernia (TSH)

- Percutaneous hernia is a common complication of laparoscopic surgery.

In early hernial foramen, the intestine or greater omentum herniates through the peritoneal defect within a few days after surgery.

Hernias can herniate at different levels: up to the preperitoneal fat, abdominal musculature, down to the external fascia, or through all layers.

In 1982, TSH was first reported after gynecological laparoscopy. Current studies have shown that most TSH are asymptomatic, but they may still cause serious morbidity (such as intestinal strangulation, intestinal necrosis, etc.) and mortality. Therefore, it is crucial to reduce the serious complications caused by subclinical TSH.

■ Advanced age and obesity are high risk factors for TSH

Advanced age

Age >60 years is a significant risk factor for TSH. This may lead to an increased risk of postoperative TS

Fat

When BMI >30 kg/m² is analyzed as a subgroup alone, the incidence of TSH is significant Increase.

- The latest guidelines of the European and American Hernia Societies on abdominal wall incision closure

It is recommended to suture the fascia layer for puncture holes with a diameter of 10 mm or more, especially for single-port surgery and midline puncture holes.

JOURNAL ARTICLE

Updated guideline for closure of abdominal wall incisions from the European and American Hernia Societies

Eva B Deerenberg , Nadia A Henriksen, George A Antoniou, Stavros A Antoniou, Wichor M Bramer, John P Fischer, Rene H Fortelny, Hakan Gök, Hobart W Harris, William Hope ... [Show more](#)

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■ Expert consensus

Chinese expert consensus on suturing techniques and suture material selection for laparoscopic hernia and abdominal wall surgery

• 3.1.1 Trocar hole with a diameter of 5 mm • 3.1.1.1 Simple small trocar hole with a diameter of ≤ 5 mm

For simple small trocar holes with a diameter of ≤ 5 mm without risk factors for incisional hernia, since the abdominal wall defect is small and there is no excessive mechanical traction or cutting injury, the tissue has a strong spontaneous healing ability, and the fascia layer can be left unclosed, and only the subcutaneous and skin layers can be sutured intermittently.

(1) Suturing technique: Under direct laparoscopic vision, remove the trocar and slowly release the pneumoperitoneum to prevent the intestine or greater omentum from accidentally protruding into the fascia layer incision due to the "chimney effect". Use interrupted sutures to suture the skin with one stitch, or use medical glue to glue the skin.

(2) Suture selection: It is recommended to use non-absorbable sutures, which should be removed 5 to 7 days after surgery, or absorbable 5/8 arc polysaccharide lactic acid sutures containing triclosan antibacterial agents. Sutures penetrate deeper into the tissue, are easy to operate, and do not need to be removed after surgery.

• Recommendation: For simple small trocar holes, the fascia layer does not need to be closed, and only the subcutaneous and skin layers can be sutured with non-absorbable sutures or 5/8 arc triclosan-containing absorbable polysaccharide lactic acid sutures.

• 3.1.2 Trocar holes with a diameter ≥ 10 mm

For larger trocar holes with a diameter ≥ 10 mm (mainly 10 mm and 12 mm) and single-port laparoscopic trocar holes, due to the larger abdominal wall defect and the presence of mechanical traction or blunt dilation during surgery, the spontaneous healing ability of the tissue is slightly poor. Regardless of whether there are risk factors for incisional hernia, the fascia layer should be closed and the subcutaneous tissue layer and (or) epidermal layer should be sutured [21].

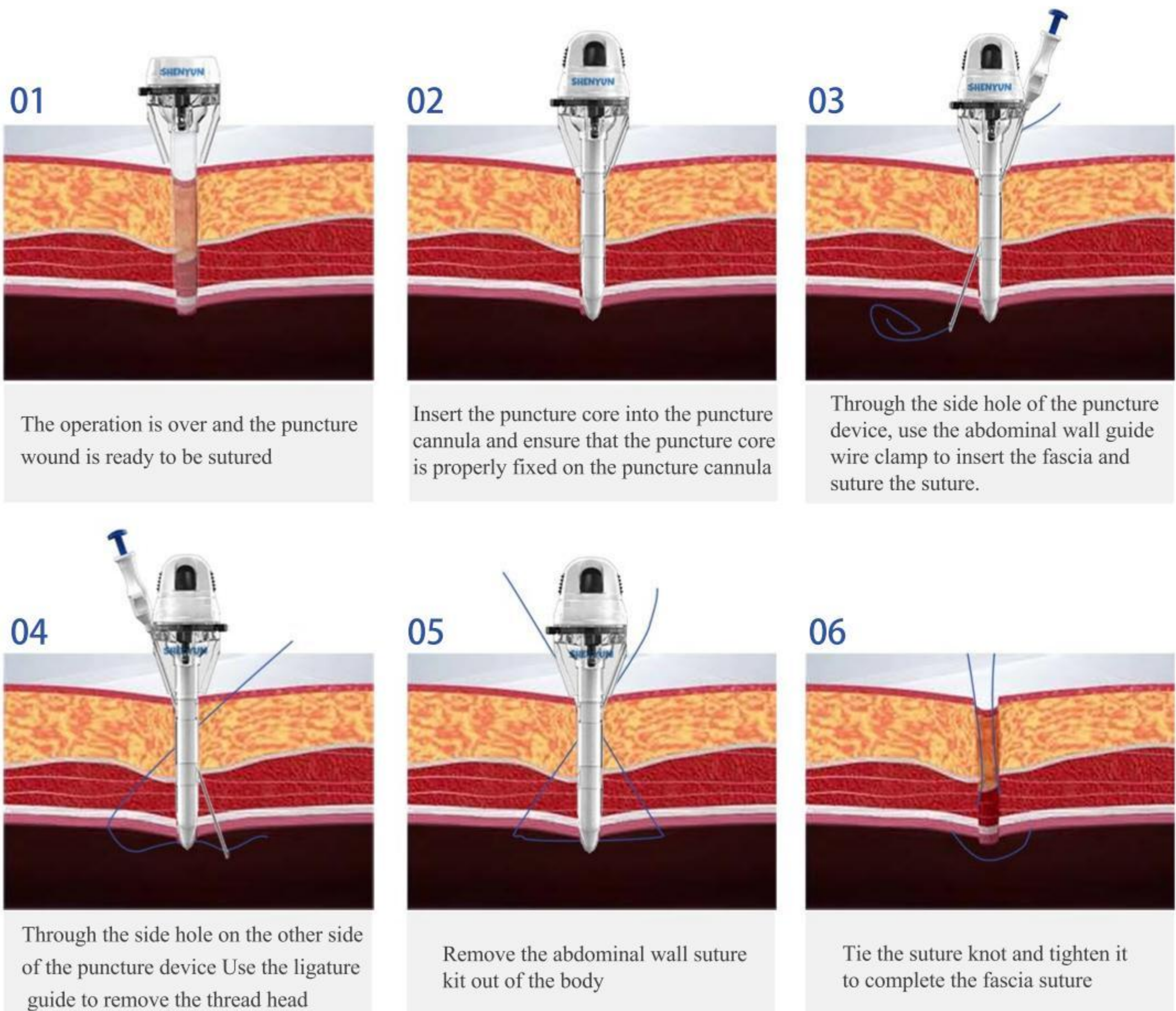
• Recommendation: For trocar holes with a diameter ≥ 10 mm and single-port laparoscopic trocar holes, the fascia layer should be closed and the subcutaneous tissue layer and (or) epidermal layer should be sutured.



■ The incidence of TSH has long been seriously underestimated

- In previous studies, TSH was generally considered to be a rare and serious complication of laparoscopic surgery, with an incidence of 0.5%. However, in recent years, more and more medical studies have shown that the incidence of TSH is seriously underestimated.
- Using imaging diagnosis, when the follow-up period exceeds 12 months, the incidence of TSH after laparoscopic surgery in patients with gastrointestinal surgery, urology surgery, and gynecology is 7.7-25.9%, and the incidence of TSH after laparoscopic surgery in patients with bariatric surgery is 18.8-39.3%.
- Delayed and latent TSH accounts for the majority of total TSH occurrences.
- Obesity, advanced age, and puncture hole infection are independent high-risk factors for TSH.

■ Clinical use steps



CLINICAL APPLICATION

MULTIPLE DEPARTMENTS



General Surgery

(Gastrointestinal/Hepatobiliary/Pancreatic/Colorectal/Urinary)

During surgery, 10mm and 12mm puncture holes are commonly used, which have a higher risk of TSH than other small puncture holes. Bonnie has great application value.



Bariatric surgery

(single-discipline product recommended as the first choice for hospital departments)

High BMI index is an independent high-risk factor for TSH. The average incidence of TSH after bariatric surgery is as high as 24.5%. Therefore, bariatric surgery requires suturing the puncture hole to avoid TSH.



Obstetrics and gynecology

(cesarean section/hysterectomy/myomectomy/ovarian tumor resection, etc.)

Female patients, multiple pregnancies, previous abdominal surgery history, and single-port laparoscopic surgery are all risk factors for TSH. In addition, changes in abdominal wall tissue during late pregnancy also increase the risk of delayed puncture hernia. Therefore, gynecology also needs to prevent the occurrence of TSH.



Urology

Nephrectomy, partial nephrectomy, total cystectomy, Prostate surgery, etc.;



Plastic surgery

Abdominal plastic surgery (such as tummy tuck);



Endocrine Surgery

Such as suturing the neck incision and abdominal wall after thyroid surgery;



Thoracic Surgery

Chest surgery (such as lung resection, esophageal surgery), etc.;

■ Different options for trocar specifications and quantities

Department	Procedure	Single hole multi-channel	Number of puncture holes
Hepatobiliary and Pancreatic Surgery	Liver cancer	Uncommon	4~6
	Gallbladder surgery		3~5
	Pancreatic cancer		4~6
Thoracic Surgery	Esophageal cancer	Ok	7~9
	Lung cancer		1~6
Gastrointestinal Surgery	Gastric cancer	Ok	4~6
	Colorectal cancer		
Bariatric Surgery	Weight loss surgery	Uncommon	4~6
Urology	Prostate cancer	Ok	4~6
	Bladder cancer		
	Kidney cancer		3~5
	Urinary benign upper urinary tract		
Gynecology	Myomectomy	Ok	3~5
	Benign hysterectomy and subtotal hysterectomy		
	Gynecological malignancies		

