Single-incision laparoscopic percutaneous extraperitoneal closure for treatment of incarcerated inguinal hernia in adolescent and young adult generation

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Purpose

To examine the feasibility of single-incision laparoscopic percutaneous extraperitoneal closure (SLPEC) for traeatment of incarcerated inguinal hernia repair in AYA generation.

Methods

We make a 0.6cm incision at the bottom of umbilicus. After small laparotomy, we insert the 5mm port into the abdominal cavity. After insufflated to 6-8 mmHg, we inserted the 5mm 30 degree laparoscope and detected the inguinal hernia.

Our indication for SLPEC in AYA generation is the small incarcerated inguinal hernia under 2cm. If the inguinal hernia was not indicated after checking by laparoscope, we performed the other operation methods, such as trans-abdominal pre-peritoneal repair (TAPP) or totally extra-peritoneal repair (TEP).

For the small incarcerated inguinal hernia, we added 2.1mm forceps into abdominal cavity through the same transumbilical incision. A 19-gauge LPEC needle with non-absorbable suture material was inserted into the inguinal region. Using LPEC needle and forceps, the hernia orifice was closed extraperitoneally with circuit suturing without leaving a peritoneal gap.

Table 1: Operated patients for inguinal hernia

	Total	Ave (y/o)	Min (y/o)	Max (y/o)	Male	Female
Sep.22-Mar.23	52	71.2	16	93	35	17
Apr.23-Aug.23	76	70.1	11	96	53	23

Figure. 1: The number of each methods for inguinal hernia

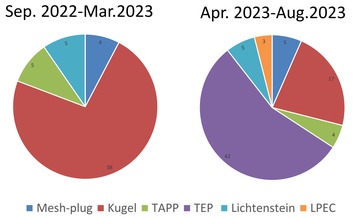
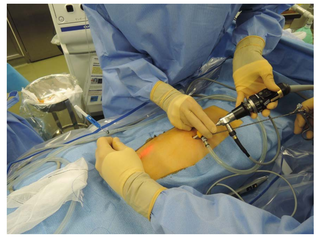


Table 2: Details of case

	age	gender	side	type	method	time
1	16	F	R	L1	Lichtenstein	52
2	33	M	L	L2	Mesh-plug	61
3	28	M	R	L2	Lichtenstein	60
4	27	F	R	L1	Lichtenstein	64
5	11	F	L	L1	LPEC	33
6	28	M	L	L2	Lichtenstein	66
7	18	F	R	L1	LPEC	28
8	21	M	R	L1	LPEC	30

Figure. 2: SLPEC



Conclusion

SLPEC is feasible and safe for incarcerated inguinal hernia repair in AYA generation.

Figure. 3: Invisible scar on 10days after operation



Results

Eight patients in AYA generation were performed for incarcerated inguinal hernia in our hospital between September, 2022 and August, 2023.

We performed 3 SLPEC, 2 Mesh-plug procedure, 1 TAPP, and 3 Lichtenstein procedure. (Table 2)

The operation time was significantly shorter than the others.(Table 3)

There were no complications and no evidence of early recurrence in any patients.

Table 3: Average operation time (min)

LPEC	30.3
Lichtenste	60.3
Mesh-Plug	61