Safety and feasibility of transabdominal preperitoneal inguinal hernia repair in very elderly patients

Kobe City Medical Center West Hospital, Department of Surgery
Shusaku Honma Ph.D., M.D., Yugo Matsui M.D.

Introduction

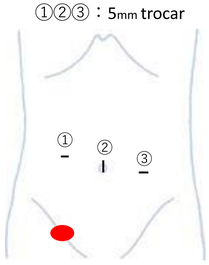
- ✓ Opportunities to treat very elderly inguinal hernia patients are increasing in Japan.
- ✓ The transabdominal preperitoneal (TAPP) approach for laparoscopic inguinal hernia repair is minimally invasive, but its safety in elderly patients is unknown.
- ✓ The objective of this study is to evaluate the safety and feasibility of TAPP repair in very elderly patients.

Patients and methods

<Study design>
Retrospective observational study.
Comparing background characteristics and short term surgical outcomes.

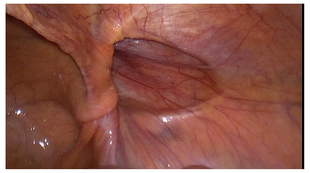
180 inguinal hernia patients
who underwent TAPP procedure in our hospital.
2020.1 – 2022.7

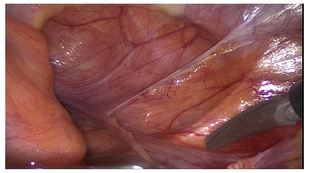
→ 44 patients (80 ≤ years old)
→ 136 patients (80 > years old)

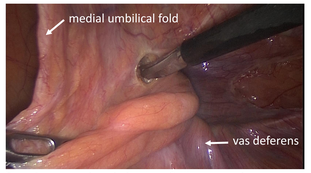


Port placement in case of right inguinal hernia.

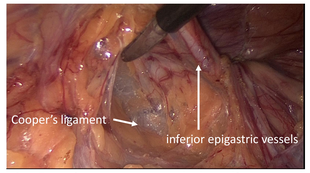
<TAPP procedure>
The sandwich approach (Nagahisa Y et al; Surg Today, 2017) is mainly used in our TAPP repair.


1. Right indirect inguinal hernia.

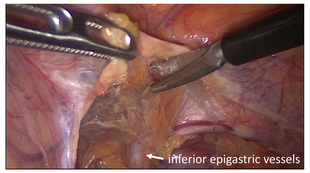

2. The peritoneum lateral to the gonadal vessels is dissected in a medial direction.



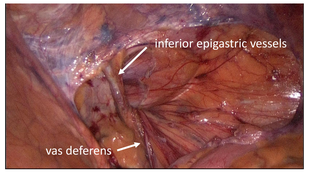
3. A new incision of the peritoneum is made on the lateral side of the medial umbilical fold superior to the vas deferens.



4. Retzius space and the dissected lateral preperitoneal space are connected.



5. A hernia sac is transected and a preperitoneal space above hernia defect is created.



6. Completion of dissection of the preperitoneal space.


7. The mesh (usually L size 3DMax® mesh) is placed and fixed with absorbable fixation device.


8. The peritoneal defect is closed by 3-0 absorbable suture.

Result

Table 1 Background characteristics of patients

	Control group (80 > y.o.) 136 cases (164 hernias)	Elderly group (80 ≦ y.o.) 44 cases (60 hernias)	P value
Age, years, median (range)	71 (21-79)	81 (80-91)	< 0.001
Sex, n			0.079
Male	122	35	
Female	14	9	
BMI, kg/m², mean (±SD)	22.6 (±2.6)	22.1 (±3.1)	0.251
Site of lesion, n			
Unilateral/bilateral	108/28	28/16	0.034
Right/left	62/46	13/15	0.298
Type of hernia, n			
Indirect	112	34	0.106
Direct	33	10	0.561
Femoral	8	1	0.278
Combined	9	13	< 0.001
Unknown	2	2	0.290
ASA PS, n (%)			< 0.001
1-2	132 (97.1)	35 (79.5)	
3 or higher	4 (2.9)	9 (20.5)	
Concurrent diseases, n (%)			
Hypertension	58 (42.6)	27 (61.4)	0.031
Diabetes mellitus	10 (7.4)	5 (11.3)	0.402
Chronic obstructive pulmonary disease	6 (4.4)	2 (4.5)	0.970
Chronic liver disease	7 (5.1)	2 (4.5)	0.873
Chronic kidney disease	6 4.4)	4 (9.1)	0.239
Antithrombotic therapy, n (%)	19 (14.0)	16 (36.4)	0.001
Past illness, n (%)			
Heart disease	16 (11.8)	12 (27.3)	0.014
Cerebral infarction	11 (8.1)	4 (9.1)	0.834
Malignancy	17 (12.5)	5 (11.4)	0.841
History of abdominal surgery, n (%)	30 (22.1)	22 (50.0)	< 0.001

BMI: body mass index, ASA-PS: American society of anesthesiologists' physical status

Table 2 Comparison of surgical outcomes in each group

	Control group (80 > y.o.) 136 cases	Elderly group (80 ≦ y.o.) 44 cases	P value
Surgical time, min, mean (±SD)			
Unilateral	105 ± 40	108 ± 33	0.719
Bilateral	161 ± 50	147 ± 49	0.395
Surgical blood loss > 10 ml, n (%)	3 (2.2)	1 (2.2)	0.979
Postoperative complication, n			0.086
Clavien-Dindo classification			
0-II	135	42	
III or higher	1	2	
Incisinoal hernia		1	
Acute heart failure		1	
Wound dehiscence	1		
Postoperative hospital stay, day, median (range)	2 (1-7)	2 (1-8)	0.863
Recurrence, n	0	0	
Follow up, month, median (range)	4 (1-29)	5.5 (1-24)	0.846

Table 1 shows the background characteristics of patients. All the following parameters showed significant differences between the two groups: bilateral hernias, ASA-PS of 3 or higher, history of treatment for hypertension, receiving antithrombotic therapy, history of heart disease and abdominal surgery.
Table 2 shows the comparison of surgical outcomes in each group. Although the frequency of ASA-PS score of 3 was higher in the elderly group than in the control group, there were no significant differences in the short term surgical outcomes including postoperative hospital stay and morbidity.

Discussion

➢In our study, major postoperative complication rates were comparable between the two groups, however, careful perioperative management are required in elderly patients, since they are more likely to have comorbidities than younger patients.

Conclusion

➢Advanced age is not a risk for worse outcomes, and thus patients with inguinal hernia should not be contraindicated for the TAPP repair through age alone.