

富嶽三十六景
武陽
仙舟

華北舟高一毫

The 38th Congress of The Korean Association Hepato-Biliary-Pancreatic Surgery
April 26-27, 2013, Jeju Island, Korea

SYMPOSIUM 7 (Video)

How I do it: Laparoscopic PPPD

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Background

Although many reports have described laparoscopic pancreatic surgery, laparoscopic pancreaticoduodenectomy (Lap-PD) is still not universally accepted as an alternative approach for open surgery.

Purpose

We here review our experience with laparoscopic pylorus-preserving pancreaticoduodenectomy (Lap-PPPD).

Non-randomized comparative studies of Lap and open pancreatoduodenectomy

1. Cho A, et al. Am J Surg 2009; 198: 445-9
2. Kuroki T, et al. Hepatogastroenterology 2012; 59: 570-3
3. Asbun HJ, et al. J Am Coll Surg 2012; 215: 810-9

	LPD(n=15)	Open(n=15)
Operative time (min)	338±48	287±117
Blood loss (ml)	445±384	552±336
Transfusion: n(%) *	0(0)	2(20)
Oral intake(days)	7.7±2.5	6.7±2.6
Hospital stay (days)	16.4±3.7	15.6±1.3
Complications: n(%)	4(27)	4(27)
Pancratic fistula: n(%)	2(13)	2(13)
Biliary leak: n(%)	1(7)	0(0)
Delayed gastric emptying: n(%)	1(7)	0(0)
Wound infection: n(%)	0(0)	1(7)
Small bowel obstruction: n(%)	0(0)	1(7)
Positive surgical margins: n	0	0
Retrieved lymph nodes	18.5±5.9	20.0±8.9

*** *p* values less than 0.05**

Cho A, et al. Am J Surg 2009; 198: 445-9

	Lap-assistedPD(n=20)	Open(n=31)	<i>p</i>-value
Operative time (min)	656.6±191.4	554.6±119.4	NS
Blood loss (ml)	376.6±291.4	1509.5±1000.2	<0.01
Transfusion	0	13	<0.01
Pancreatic fustula, ISGPF			NS
Grade A	6	7	
Grade B	3	5	
Grade C	0	0	
Delayed gastric emptying, ISGPF			NS
Grade A	2	2	
Grade B	1	1	
Grade C	0	0	
Bile leakage	0	3	NS

	Open(n=215)	LPD(n=53)	<i>p</i>-value
Operative time (min)	401 ± 108	541 ± 88	<0.001
Blood loss (ml)	1032 ± 1151	195 ± 136	<0.001
Transfusion	4.7 ± 7.3	0.64 ± 1.5	<0.001
Hospital stay	12.4 ± 8.5	8 ± 3.2	<0.001
Reoperation, n(%)	15(7)	2(3.8)	NS
Pancreatic fistula	29(17.3)	7(16.7)	NS
Hemorrhage	12(5.6)	5(9.4)	NS
Delayed gastric emptying	32(15.3)	6(11.3)	NS
Mortality	19(8.8)	3(5.7)	NS

A Case-Match Control Study in pancreatic ductal adenoca. (PDAC)

Twenty patients who underwent Laparoscopic pancreatic resection for PDAC were age, BMI, gender, surgical procedure, and preoperative stage-matched with 22 patients treated by open surgery in the same period.

Clinical characteristics of patients

	LPD(n=20)	OPD(n=22)	<i>P</i>
Age ^a	55-84(69.4)	55-78(68.7)	0.939
Gender(F:M) ^a	10:10	11:11	1
Procedure (PD:DP) ^a	14:6	16:5	0.911
BMI ^a	21.43(±2.95)	21.20(±2.983)	0.954
ASA ^b	2	2	0.441
DM (-:+)	12:8	17:5	0.216

^a Matching criteria

^b Median value

Perioperative outcome

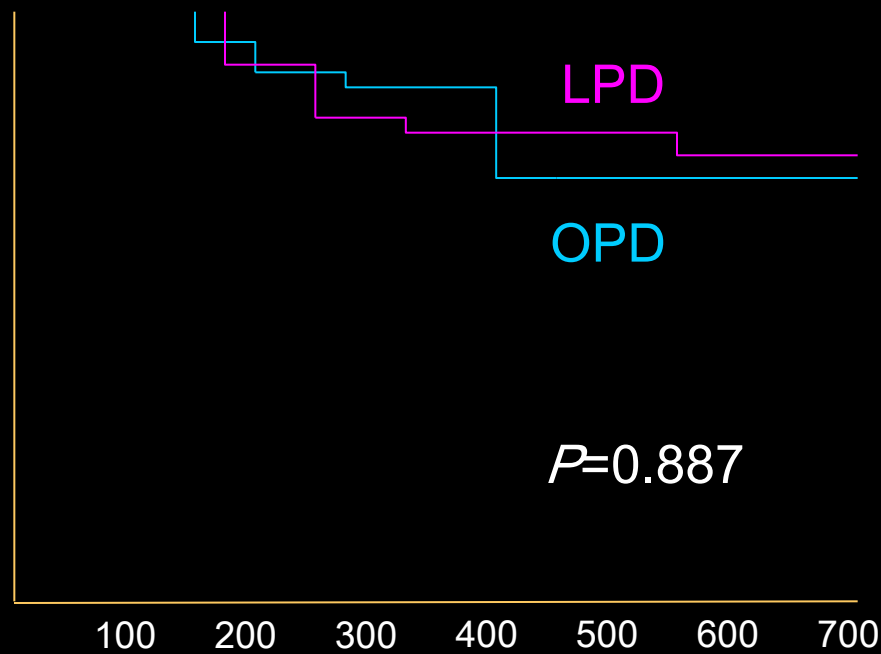
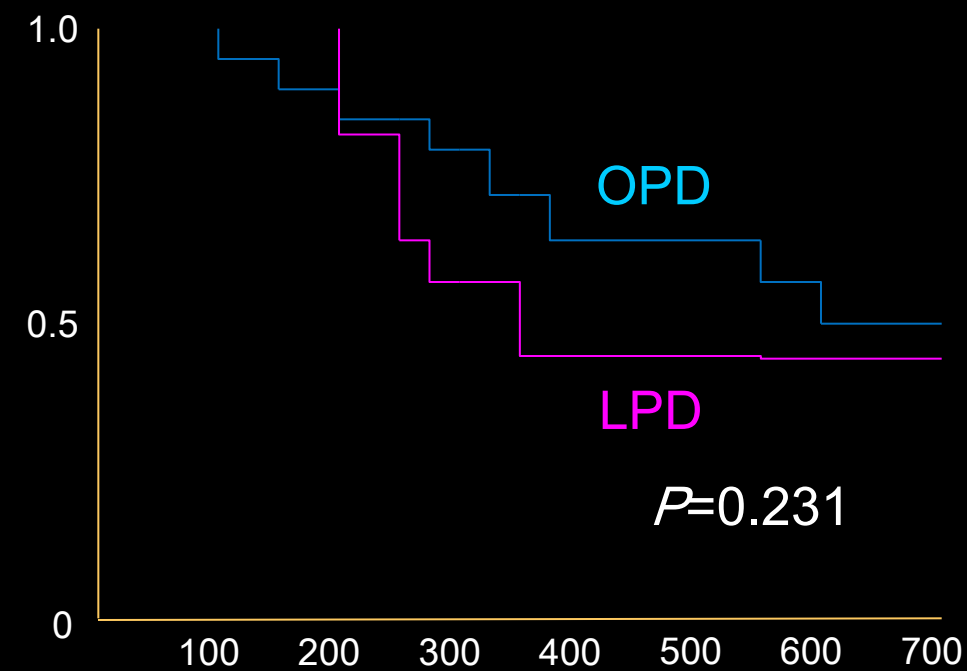
	LPD(n=20)	OPD(n=22)	<i>P</i>
Blood loss(ml)	2 8 5 (±584)	900((±538)	0.048
Operative time(M)	357(±74)	320(±106)	0.078
Curability(R0:R1)	16:4	14:8	0.712
Retreived LN	19(±5.6)	21(±7.3)	0.215
PF Gr.B or C(-: +)	18:2	19:3	0.725
Length of stay(day)	17.8(±20.2)	19.7(±8.9)	0.893

Pathological outcomes and tumor(T) node(N) stage

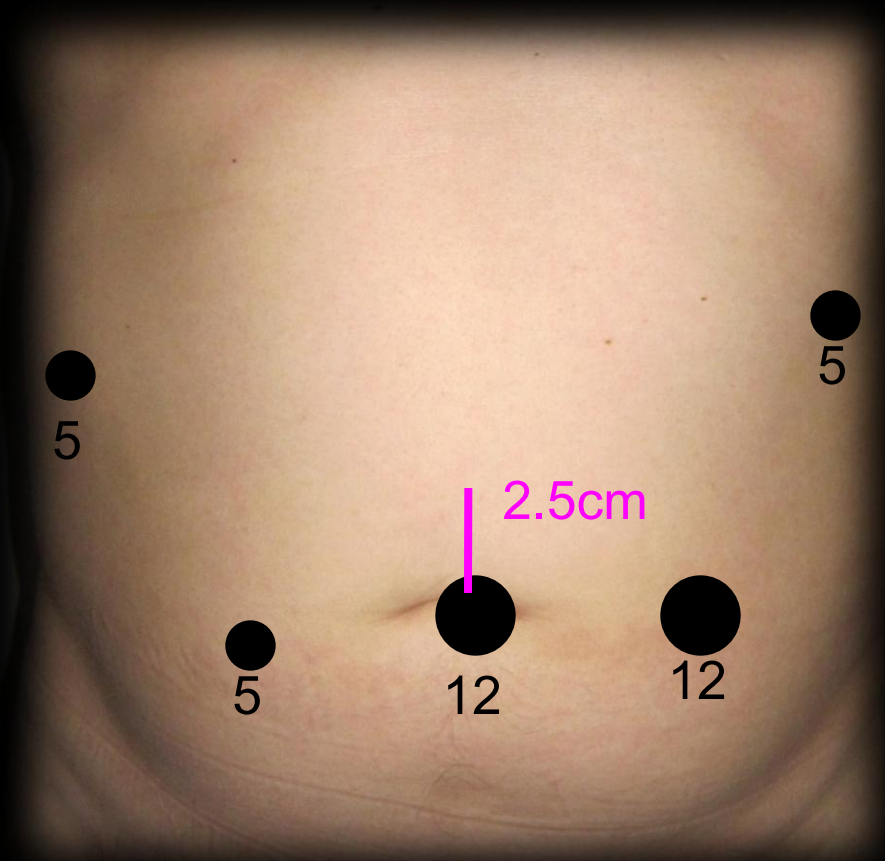
	LPD(n=20)	OPD(n=22)	<i>P</i>
TS 1;2;3;4	1;11; 8;0	4; 11; 6; 1	0.684
Nodular; infiltrative	13;7	8;14	0.138
pT 1;2;3;4	0;0; 17;3	0; 0; 14; 8	0.084
pN 0;1;2;3	0;11;9;0	7;10;5;0	0.03
fStage I;II;III;IV	0;0;11;7;2	0;0;12;8;2	0.982

DFS

OS



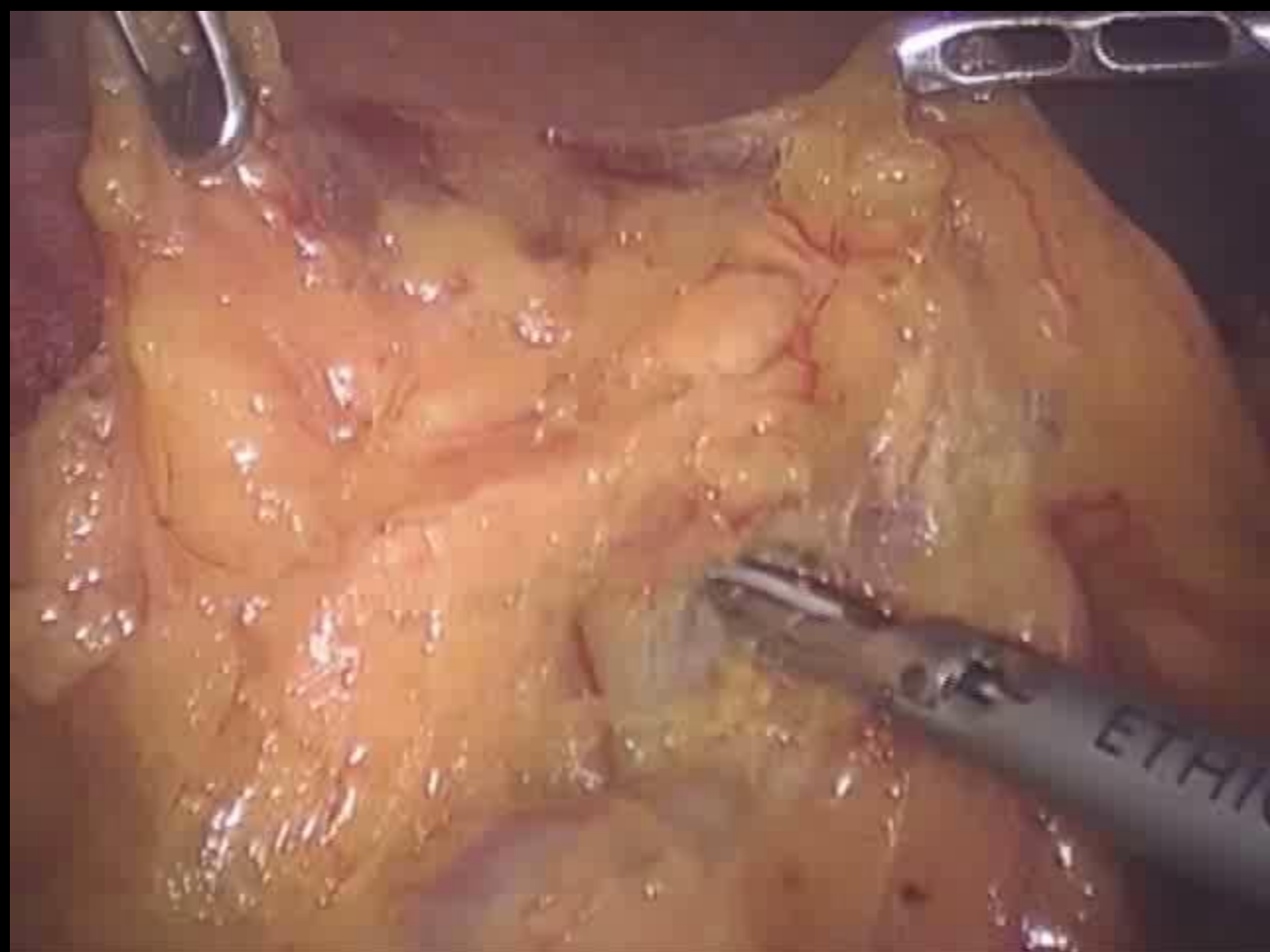
Trocar placement



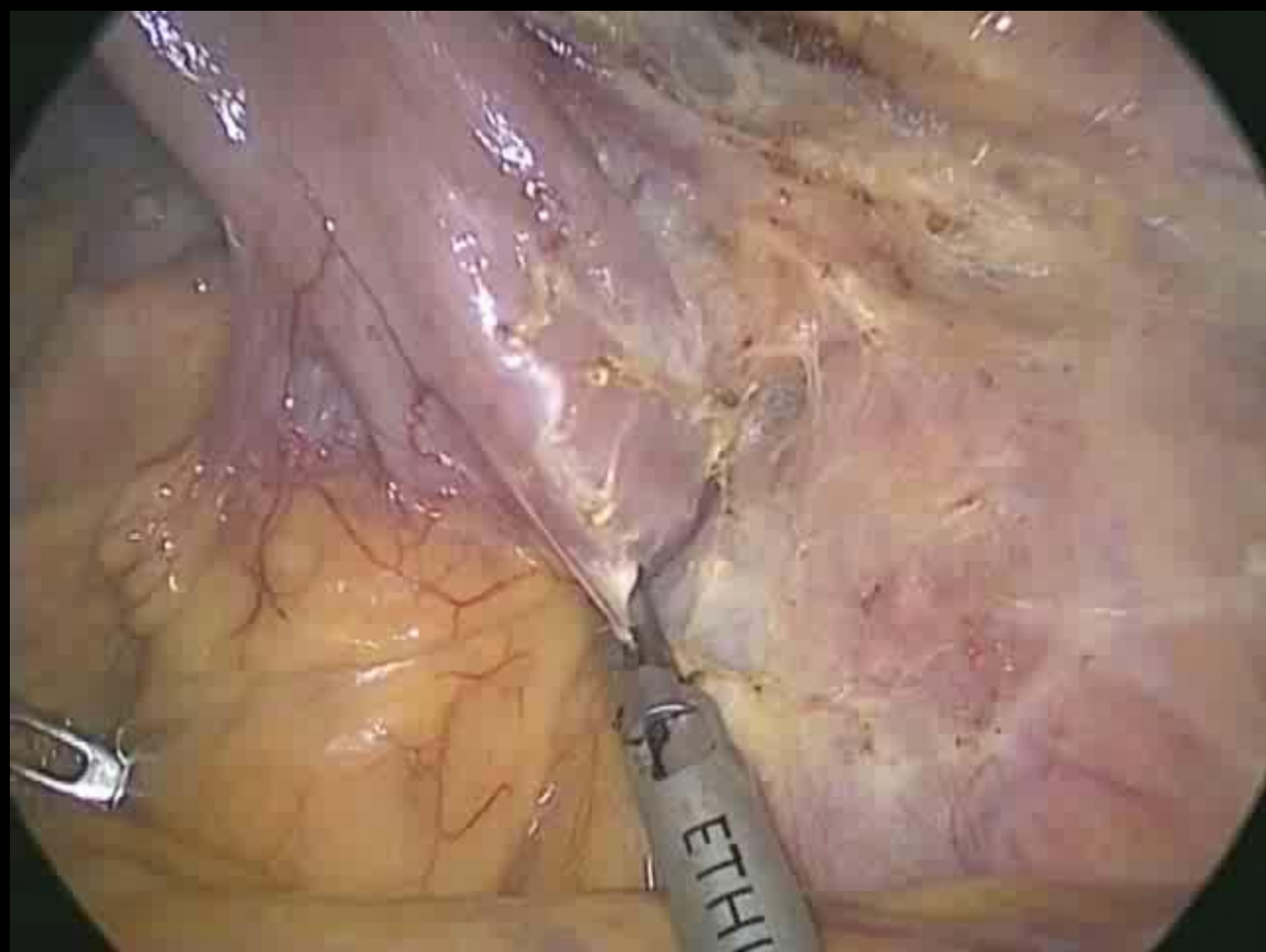
Postoperative scars

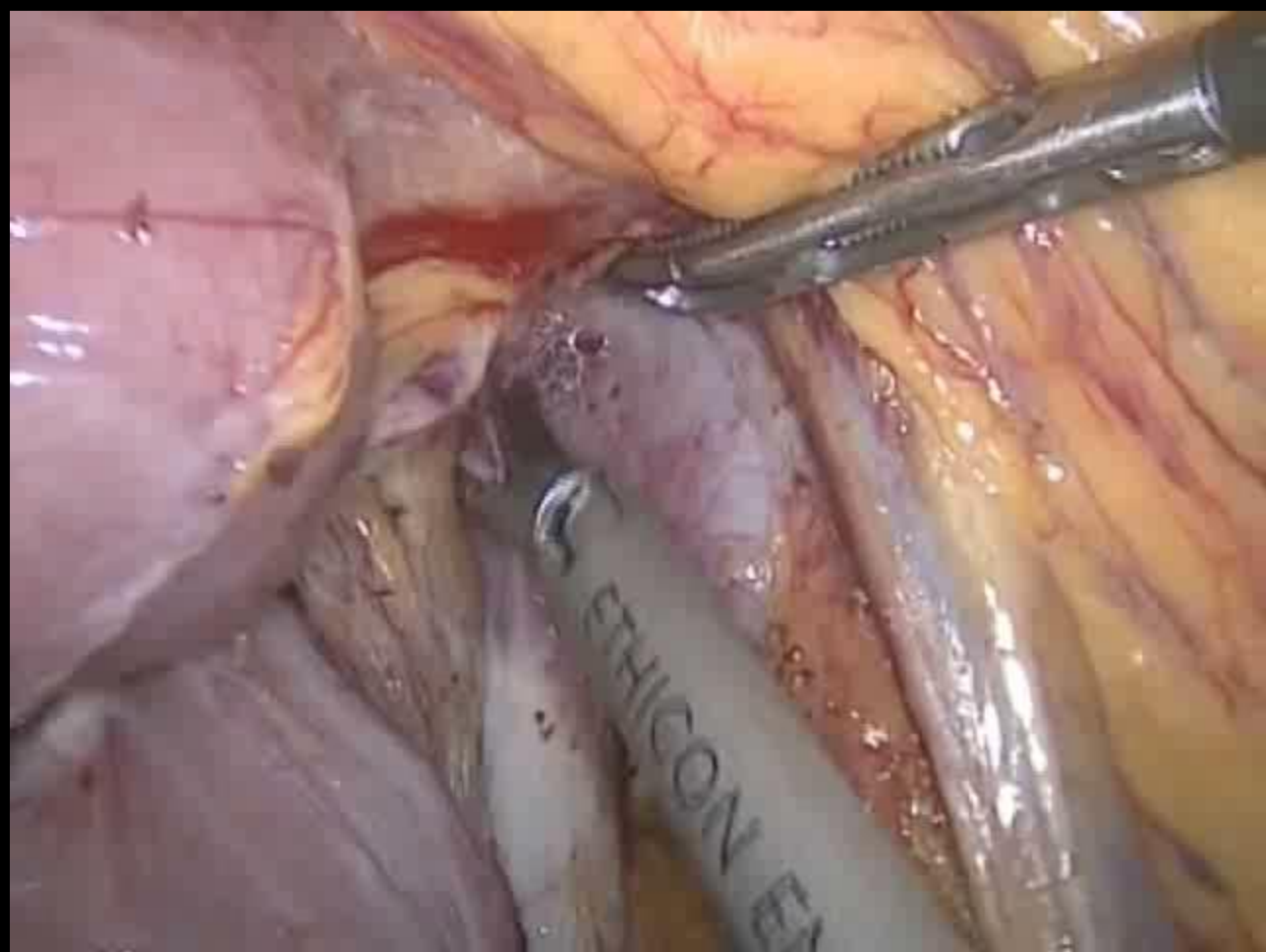


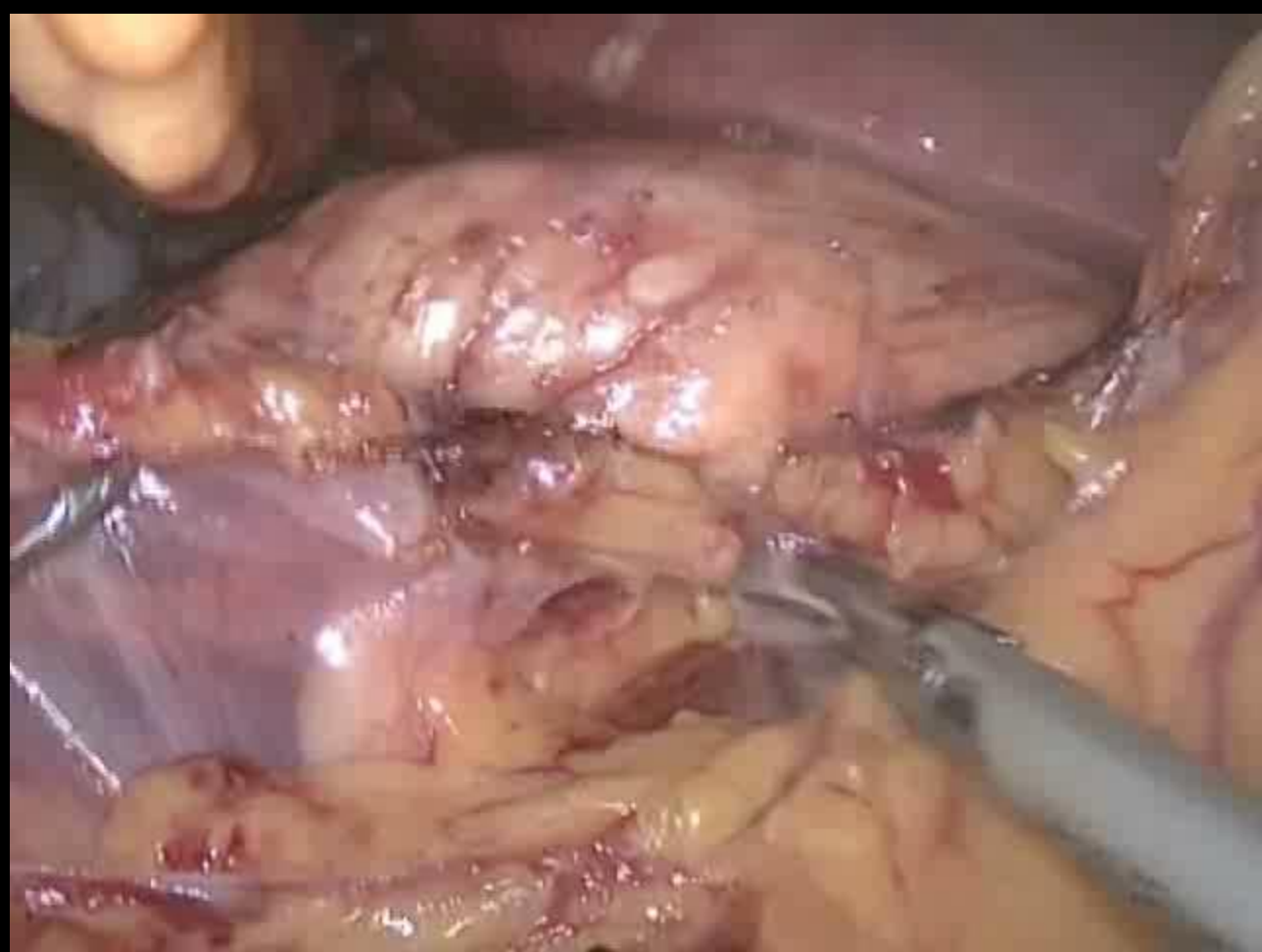
Resection



Treitz Ligament Approach

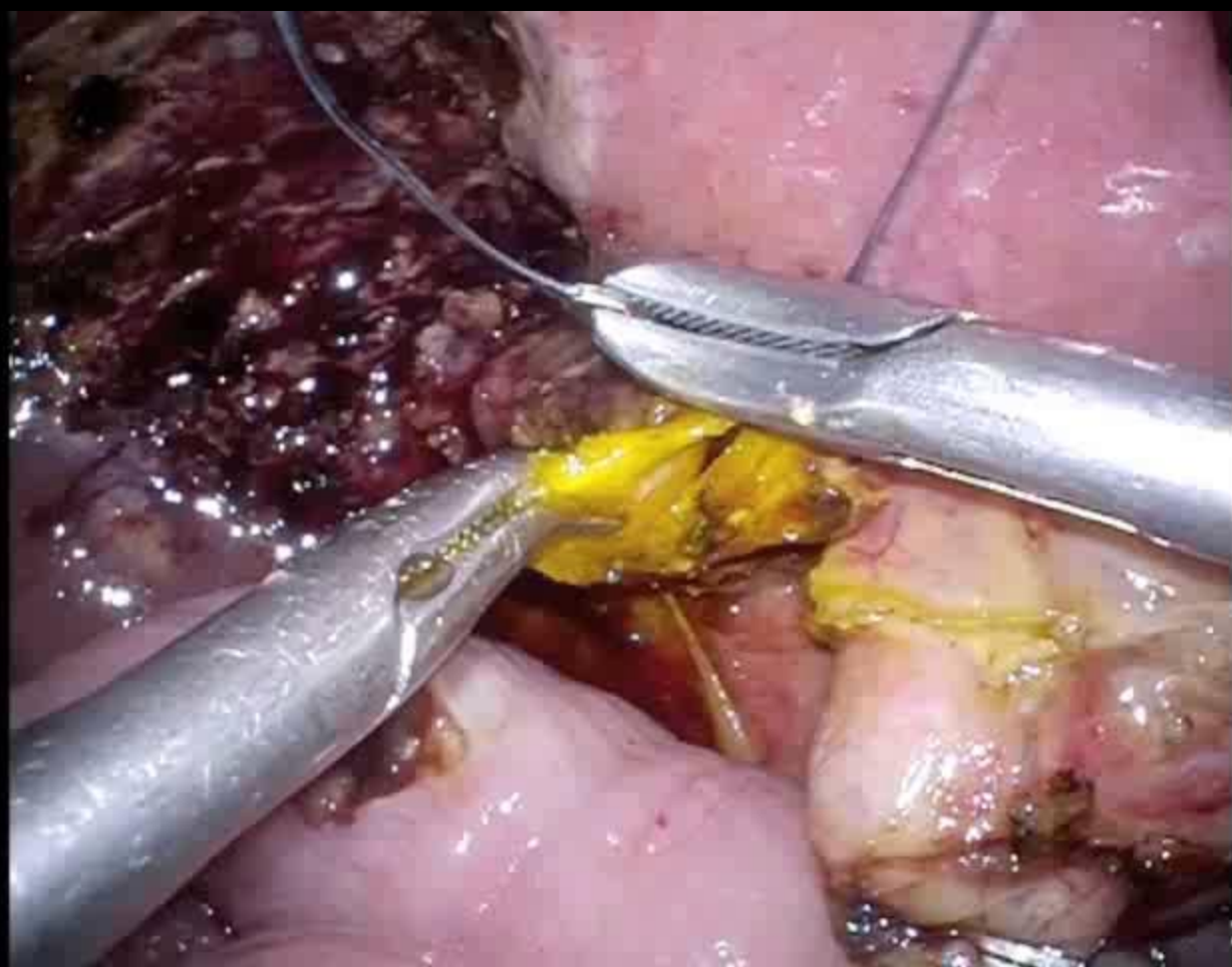






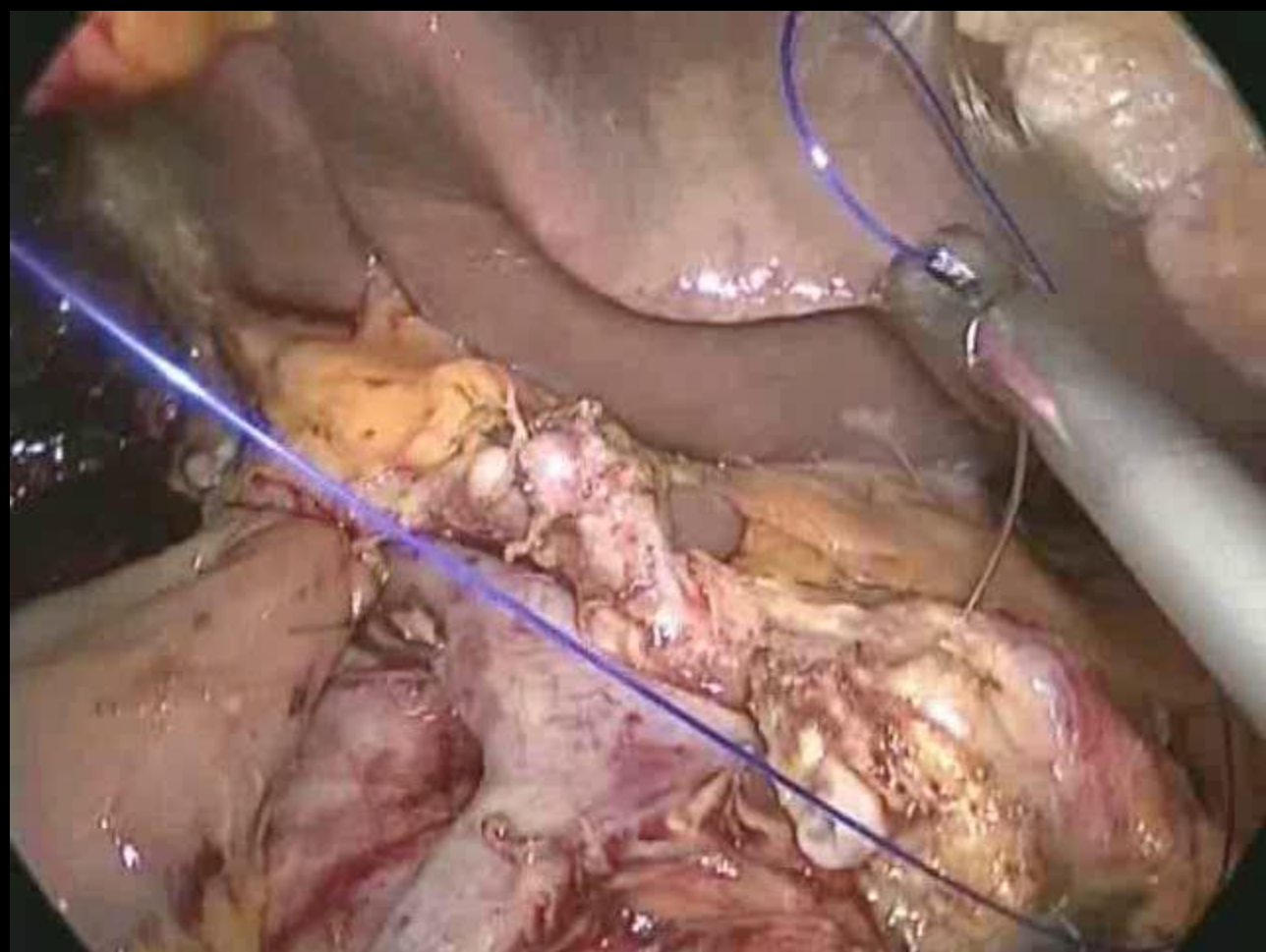
Reconstruction

Choleducho- Jejunostomy

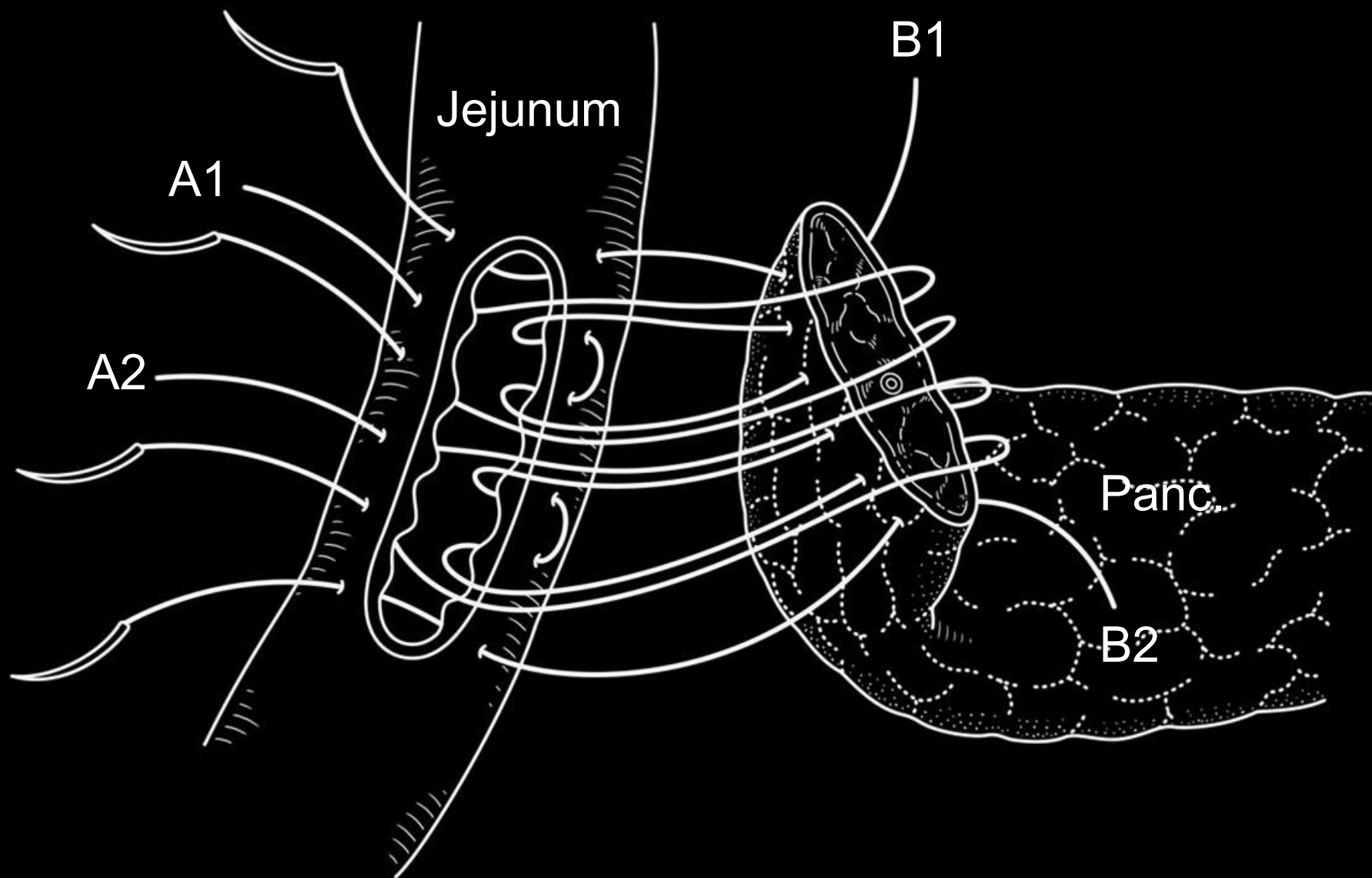


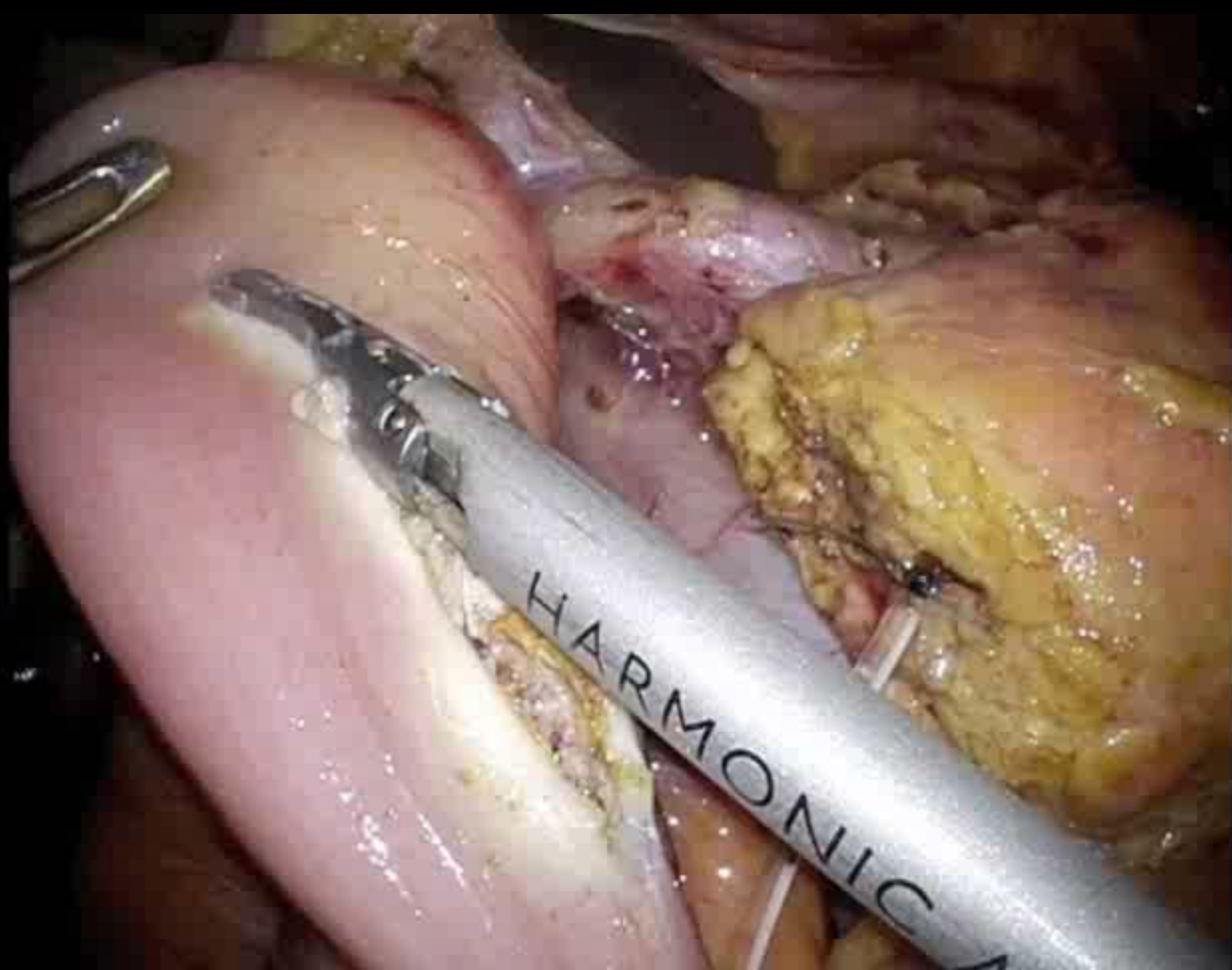
Pancreatico- Jejunostomy

Duct-mucosa+Kakita Method



Mattress Dumping Method





Mattress Dumping Method

15 consecutive patients with a soft pancreas and a non-dilated pancreatic duct underwent dunking PJ using mattress sutures.

According ISGPF criteria, three patients developed Grade A, while the remaining 12 patients did not.

Summary

Lap-PPPD can be feasible, safe, and effective in carefully selected patients.

Treitze ligament approach is useful to do SMA First and early ligation of IPDA.

Mattress dunking method is safe in patients with a soft pancreas.

A scenic landscape photograph featuring Mount Fuji in the background, its snow-capped peak rising against a clear blue sky. In the foreground, delicate pink cherry blossoms are in full bloom, their branches arching over a calm body of water that reflects the mountain and the sky. The overall atmosphere is peaceful and beautiful, typical of a spring day in Japan.

감사합니다