

# Technical considerations and astuces in laparoscopic single-port surgery

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## Aim:

To analyze the outcomes of a series of single-port laparoscopic procedures (UNIMAX device) and to outline some considerations for the improvement of the technique.

## Material and Methods

Early postoperative period has been analyzed in a series of 20 patients who underwent laparoscopic cholecystectomy with a single-port technique (SPLC) performed since October 2016 and compared to an historic series of four-port technique laparoscopic cholecystectomies (4PLC). A multi-channel single port device by Unimax Medical Systems was used.

Outcome measures:

- Pain (Visual Analogue Scale after 4/24 hrs.)
- Analgesics administration
- Morbidity
- Length of stay
- Trocar costs

TABLE 1. Laparoscopic Single-port procedures. Period: October 2016 – April 2017

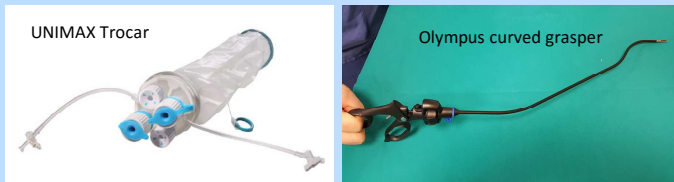
N	33
Cholecystectomy	20
Appendectomy	6
Splenectomy	3
Splenic cyst fenestration	3
Hepatic cyst fenestration	1
Abdominal lymph-node biopsy	1
Nissen	1
TAPP	1



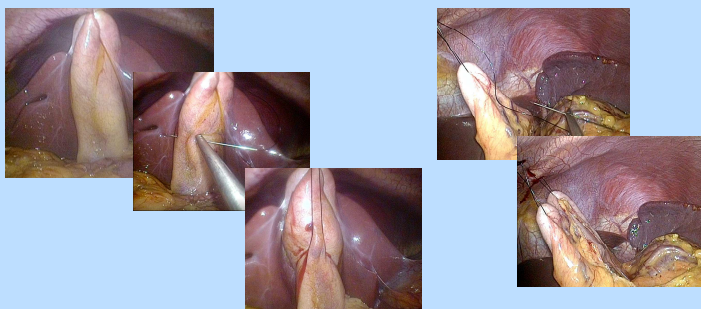
TABLE 2. Characteristics of patients and postoperative results grouped for laparoscopic procedure.

Characteristic	SPLC (n = 20)	4PLC (n = 20)	P value
Sex (F/M)	11/9	9/11	--
Age(yrs)	57.1	57.6	0.92
BMI	28.2	29.7	0.70
Associated (Co)morbidities	14	15	0.26
Length of surgery	98	70	0.001198
Trocar addition	0	0	
Surgery conversion	0	0	
VAS at 4/24 hrs	1.6/1.2	2/1.95	0.084
Pain medications	17/20	17/20	
Paracetamol (gr)	53	42	0.309
Ketorolac (ph)	7	4	0.354
Morphine sulphate (ph)	0	1	0.323
Length of stay	1.85	2.15	0.114
Morbidity	0	0	--
BIS score at 4 weeks	6(5-7)#	19.9/(19-20)	#Lurje et al. Ann Surg 2015;262:728-35
CS score at 4 weeks	16(13-19)#	22.2/(16-24)	
Trocar costs (EURO)	120	180	

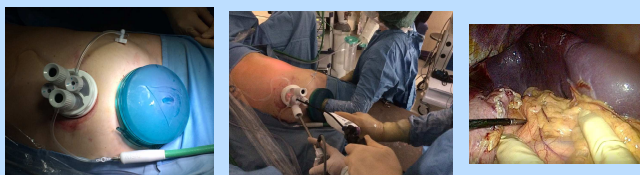
## Technical details and surgical features



### "Puppeteer" technique



### Single-port + Hand-assistance (Gel port)



## Results

It was revealed that SPLC is associated with lower severity of postoperative pain and shorter hospital stay compared with TLC. Furthermore, high satisfaction of surgical results and their aesthetic effect was showed with SPLC. When compared to a historic series of 4PLC (Lurje et al. ). A cost analysis of laparoscopic material used has proven an advantage of SPLC compared to TLC. Disadvantages of single-port LCE include longer duration of surgery and increased discomfort for the surgeon.

## Discussion / Conclusion

Further studies to standardize, evaluate the safety and benefits of single-port laparoscopic surgery are necessary. However, our results comparing the single port to the multi port technique seem aligned with those of literature that provide for a reduction of postoperative pain combined with an aesthetic Benefit.