Comparative study between open and laparoscopic TPC-IPAA for ulcerative colitis A propensity score matched study

HELMY EZZAT, MD

GASTROINTETSINAL SURGERY CENTER

MANSOURA UNIVERSITY

INTRODUCTION

- Ulcerative colitis (UC) is a chronic disease with recurrent symptoms and significant morbidity **(Cima 2005)**.
- Despite improved medical therapy for ulcerative colitis (UC), about 20% of patients will require surgery **(Carter et al., 2004)**.

INTRODUCTION

- Restorative proctocolectomy with ileal pouch-anal anastomosis (TPC-IPAA) is often the procedure of choice and generally results in an acceptable long-term functional outcome and improved quality of life **(Carter et al., 2004)**.

INTRODUCTION

- Traditionally open TPC-IPAA had some drawbacks including the necessity of a generous midline incision for adequate exposure and the difficulty of performing a complete proctectomy due to the narrow bony pelvis with difficult visualization of the pelvic floor and the ano-rectal junction **(Fazio et al., 2013)**.

INTRODUCTION

- Over the past 25 years, evolution of laparoscopic surgery and advances in laparoscopic techniques and surgeons experience helped the implementation of laparoscopy in colo-rectal surgeries.
- Several studies comparing open to laparoscopic colectomies concluded that laparoscopic approach significantly enhanced the surgical outcomes and decreased the hospital stay **(Dunker et al., 2001) (Zhang et al., 2007) (Ky et al., 2002)**.

INTRODUCTION

- However, regarding TPC-IPAA, the impact of laparoscopy on the length of hospital stay, overall morbidity and mortality is still controversial.

AIM OF WORK

- The aim of this study is to compare laparoscopic versus open restorative TPC-IPAA for UC as regards safety, feasibility, postoperative outcome, urogenital, sexual function, and quality of life.

MATERIALS AND METHODS

- This is a retrospective data analysis of all patients who underwent TPC- IPAA for ulcerative colitis at Gastro-intestinal Surgical Center, Mansoura University in the period from January 2009 to December 2017.

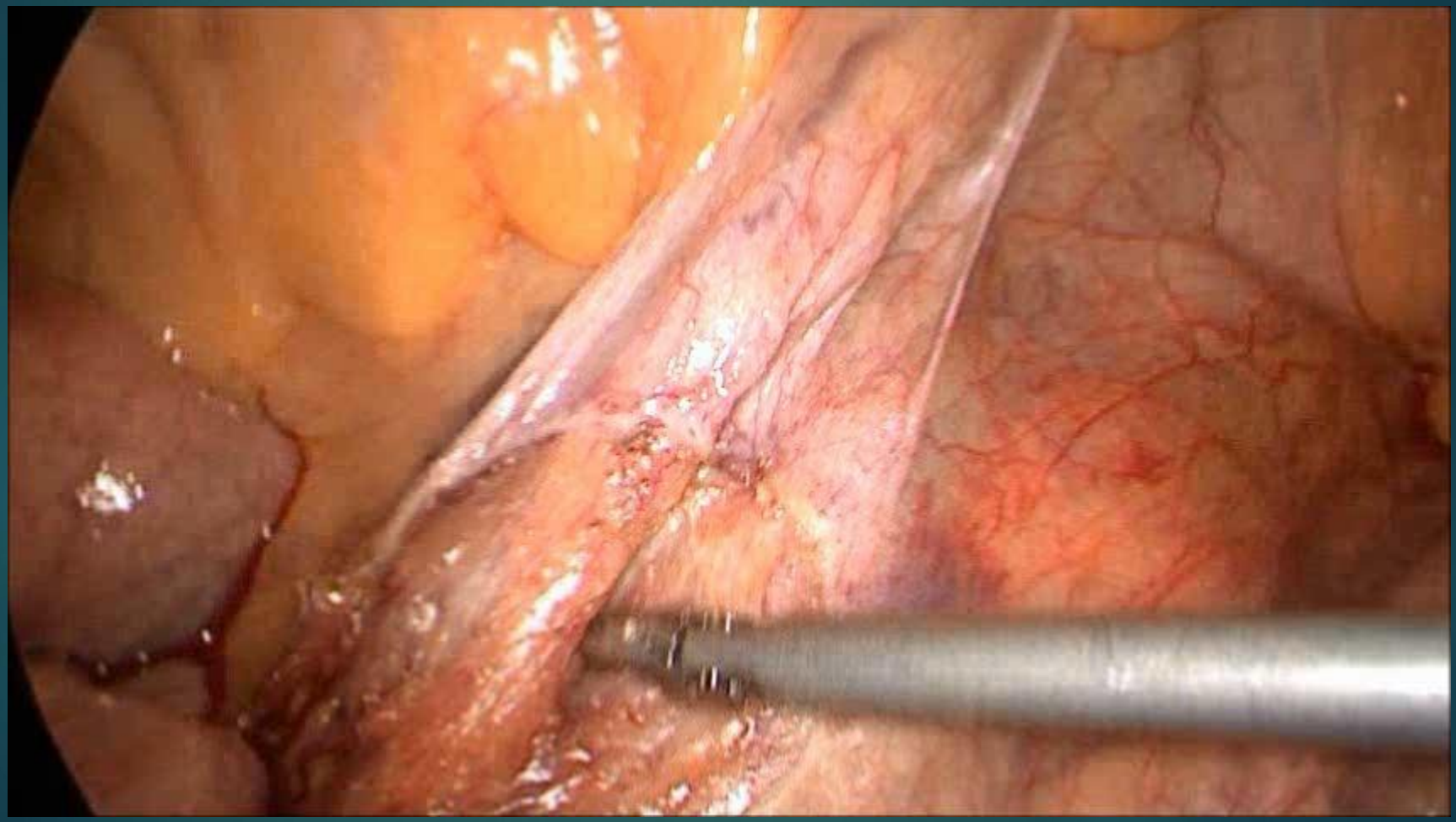
MATERIALS AND METHODS

- All patients scheduled for elective TPC-IPAA were included in the study, excluding only those with previous laparotomy, bowel resection, marked liver cirrhosis, or pregnancy.

MATERIALS AND METHODS

- For this propensity score matched study, patients were divided into two patient groups based on type of approach:
- group I (open TPC- IPAA).
- group II (laparoscopic TPC- IPAA).

OPERATIVE TECHNIQUE



RESULTS

- During the study period, 56 patients who underwent TPC-IPAA for ulcerative colitis were included.
- Patients were divided equally between both groups (28 patients each).

RESULTS
Demographic Data

	LAPAROSCOPIC	OPEN	P VALUE
Age	31.5 (18-53)	31.5 (17-55)	0.98
<35 years	16 (57.1%)	17 (60.7%)	0.79
>35 years	12 (42.9%)	11 (39.3%)	
Sex			
Male	13 (46.4%)	13 (46.4%)	1
Female	15 (53.6%)	15 (53.6%)	
BMI			0.75
>25	22 (78.6%)	23 (82.1%)	0.73
<25	6 (21.4%)	5 (17.9%)	

RESULTS
Demographic Data

	LAPAROSCOPIC	OPEN	P VALUE
Disease duration (months)	44 (6-180)	48 (6-144)	0.92
Diabetes	2 (7.1%)	2 (7.1%)	1
Steroid therapy	20 (71.4%)	21 (75%)	0.76
Immunosuppressive drug	12 (42.9%)	11 (39.3%)	0.79

RESULTS
Demographic Data

	LAPAROSCOPIC	OPEN	P VALUE
Diarrhea	28 (100%)	28 (100%)	1
Frequency (times/day)	7 (4-12)	7 (4-11)	0.95
< 6 times/day	5 (17.9%)	4 (14.3%)	0.72
> 6 times/day	23 (82.1%)	24 (85.7%)	
Bleeding/rectum	24 (85.7%)	23 (82.1%)	0.72
Mucous discharge	21 (75%)	20 (71.4%)	0.76

RESULTS
Demographic Data

	LAPAROSCOPIC	OPEN	P VALUE
Surgery indication			0.75
Failed medical	14 (50%)	14 (50%)	
Dysplasia	11 (39.3%)	9 (28.6%)	
Growth retardation	0	2 (7.1%)	
Stricture	1 (3.6%)	1 (3.6%)	
Extracolonic manifestation	2 (7.1%)	2 (7.1%)	

RESULTS
Operative & POSTOPERATIVE Data

	LAPAROSCOPIC	OPEN	P VALUE
Length of operation	6 (5-7)	4 (4-6)	0.0001
Amount of blood loss	100 (100-600)	150 (100-800)	0.73
Postoperative ICU	1 (1-2)	1 (1-2)	0.052
Amount of drainage	250 (100-800)	500 (300-1700)	0.0001

RESULTS
Operative & POSTOPERATIVE Data

	LAPAROSCOPIC	OPEN	P VALUE
WBC count			
POD1	8 (4-23)	9.5 (4-21)	0.38
POD3	8 (4-19)	8 (4-15)	0.44
Hemoglobin			
POD1	11 (10-12)	10.5 (9-12)	0.19
POD 3	11 (10-12)	10.5 (7-12)	0.15
Serum albumin			
POD1	2.6 (2.2-3.1)	2.3 (2-2.8)	0.0001
POD3	2.9 (2.2-3.5)	2.6 (2-3.2)	0.02

RESULTS
Operative & POSTOPERATIVE Data

	LAPAROSCOPIC	OPEN	P VALUE
Postoperative pain (VAS)			
POD1	6 (5-8)	8 (7-9)	0.0001
POD3	3 (2-6)	6 (5-7)	0.0001
Postoperative analgesic			
POD1	22 (78.6)	28 (100%)	0.01
POD3	8 (28.6%)	12 (42.9%)	0.27

RESULTS
Operative & POSTOPERATIVE Data

	LAPAROSCOPIC	OPEN	P VALUE
Time to resume oral intake	2 (2-5)	3 (3-6)	0.0001
Length of the wound (cm)	6 (2-6)	30 (25-33)	0.0001
Hospital stay	4 (3-17)	5 (4-16)	0.09

RESULTS
POSTOPERATIVE COMPLICATIONS

	LAPAROSCOPIC	OPEN	P VALUE
Morbidity	11 (39.3%)	17 (60.7%)	0.11
Collection	2 (7.1%)	2 (7.1%)	1
Leakage	1 (3.6%)	2 (7.1%)	0.55
Intestinal obstruction	1 (3.6%)	2 (7.1%)	0.55
Chest infection	2 (7.1%)	3 (10.7%)	0.64
Wound infection	0	4 (14.2%)	0.04

RESULTS
POSTOPERATIVE COMPLICATIONS

	LAPAROSCOPIC	OPEN	P VALUE
Pouch bleeding	0	1 (3.6%)	0.31
Pouchitis	5 (17.9%)	9 (32.1%)	0.22
Retained rectum	3 (10.8%)	4 (14.2%)	0.33
Frequency/ day	4 (3-11)	4 (3-11)	0.97
Anal incontinence	5 (17.9%)	5 (17.9%)	1
Minor	4 (14.3%)	3 (10.7%)	0.49
Major	1 (3.6%)	2 (7.1%)	

RESULTS
POSTOPERATIVE COMPLICATIONS

	LAPAROSCOPIC	OPEN	P VALUE
Incisional hernia	0	3 (10.7%)	0.08
Anal stenosis	1 (3.6%)	2 (7.1%)	0.3
Enterocutenous fistula	1 (3.6%)	1 (3.6%)	1
Re-exploration	3 (10.8%)	4 (14.2%)	0.33
Urine retention	2 (7.1%)	1 (3.6%)	0.55
Genital complications	5 (17.9%)	4 (14.3)	0.72

RESULTS

Manometeric study pre and post pouch construction

	LAPAROSCOPIC	OPEN	P VALUE
Preoperative resting pressure	60 (40-90)	70 (40-150)	0.17
Postoperative resting pressure	55 (20-60)	55 (20-70)	0.71
P value	0.005	0.0001	

RESULTS

Manometeric study pre and post pouch construction

	LAPAROSCOPIC	OPEN	P VALUE
Preoperative squeeze pressure	110 (80-200)	130 (90-255)	0.34
Postoperative squeeze pressure	110 (60-220)	110 (60-230)	0.87
P value	0.048	0.001	

RESULTS

Manometeric study pre and post pouch construction

	LAPAROSCOPIC	OPEN	P VALUE
Pre RAIR	19/19 (100%)	20/20 (100%)	1
Post RAIR	14/15 (93.3%)	13/16 (81.3%)	0.32
P value	0.32	0.08	

CONCLUSION

- Laparoscopic TPC-IPAA equivalent to open TPC-IPAA as regards safety and feasibility.
- It showed superior postoperative cosmoses, less postoperative pain, earlier resumed oral intake, but with longer operative time.
- More randomized controlled studies are needed to confirm our results.