

Experience on 245 laparoscopic procedures using the combined ultrasonic and bipolar energy device Thunderbeat™

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Introduction

In modern laparoscopic surgery the use of an energy device for dissection and preparation is indispensable. Advance energy devices may also be used for vessel sealing reducing the need of vessel clips and vascular staplers. Blood loss and time of surgery are reduced. Experience on the first 245 laparoscopic procedures using the combined ultrasonic and bipolar energy device Thunderbeat™ are reported.

Material and methods

Operative data and outcome of a consecutive series of 245 patients undergoing laparoscopic procedures using the combined ultrasonic and bipolar energy device Thunderbeat™ is analyzed.

Results

In total 245 laparoscopic procedures in all field of visceral surgery and gynecology have been performed (Table 1). Among 133 colorectal operations were 113 resections. 57% of those were performed in NOTES technique using a transvaginal or transrectal access. In none of those procedures additional vessel clips or vascular staplers and no other energy device have been used. The total conversion rate to open surgery was 4% (9) for following reasons: anatomical (4), big inflammatory tumours (2), severe adhesions (2) and in one splenectomy case with a necrotic spleen after interventional coiling.

There were 6% (14) surgical complications: wound infection in two patients (grade I), peranal bleeding in two patients (Dindo-Clavien grade II), ileus (grade II), intraabdominal abscess necessitating drainage (grade IIIa), intraabdominal hematoma in two patients after reuptake of oral anticoagulation (grade IIIb), colonic perforation (grade IIIb) and anastomotic leakage in four patients (grade IVb).

Conclusions

In 245 advanced laparoscopic procedures using Thunderbeat™ we observe no device related conversion or surgical complication. There was no need for additional vessel clips or vascular staplers. The use of Thunderbeat™ in laparoscopic surgery seems to be safe.

Table 1: Laparoscopic procedures

Laparoscopic procedures		n
Colorectal		133
Anterior Resection		82
Hybrid-NOTES transvaginal	39	
Hybrid-NOTES transrectal	25	
Low Anterior Resection		10
Left Hemicolectomy		13
Right Hemicolectomy		5
Total Colectomy		1
Abdominoperineal Resection		2
Colostomy / Ileostomy		6
Hartmann's reversal		10
Rectopexy		2
TEM		2
Upper GI		37
Gastrectomy		3
Distal esophagus resection		1
Distal gastrectomy (Billroth II)		1
Roux-Y Gastric Bypass		12
Fundoplication / Hiatal Hernia Repair		9
Splenectomy		2
Left pancreatectomy		2
Cholecystectomy		6
Liver resection		1
Gynecology		41
Hysterectomy		20
Adnexectomy		15
Colposacropexy		6
Others		34
Omentectomy		3
Lymphnode resection		4
Adhesiolysis		19
IPOM		7
Appendectomy		1

