

# Bladeless Gynecological Laparoscopy – A Prospective Study 87 Consecutive Cases

Dr. John Dulemba

Denton Regional Medical Center, Denton, TX

## Introduction:

Trocar related injuries continue to be one of the primary mechanisms of morbidity and mortality in laparoscopic general and gynecological surgery, and have been the focus of several recent studies<sup>1,2,3,4,5</sup>. In many studies, most or all of these complications were associated with the use of either bladed, “shielded” trocars<sup>1,2,3,4,5,6,7</sup> or “visual” trocars with metal or plastic blades and the ability to visualize tissue<sup>2,3,4</sup>.

A novel new type of bladeless port has been developed that may reduce the likelihood of such complications (ADAPt, Taut, Inc., Geneva, IL). This asymmetrical dilating (AD) device uses an asymmetrical bladeless tip to divide rather than cut fascial fibers.

## Study Design

A prospective study was performed to track all intra-operative complications associated with the use of the AD ports in gynecological laparoscopy during a six-month period.

Primary incision was intra-umbilical with an insufflation needle and a 10mm AD port. A total of 190 10mm ports were used, as well as 71 5mm ports. Average number of previous abdominal surgeries was 1.5, with a minimum of 0 and a maximum of 10.

Specifically, the absence or presence of intra-operative complications associated with the ports was tracked. Events looked for included, but were not limited to, excessive port site bleeding requiring intervention, retroperitoneal vascular injuries, bowel injuries, bladder injuries, other visceral injuries, excessively large port site defects, and any other complications that required intervention.

From 3-26-03 to 9-26-03, 87 procedures were performed.

LAVH (w/ or w/o BSO)	54
Lap Laser Endometrial Excision (w/ or w/o BTL)	26
Laparoscopic BTL	3
Laparoscopic BSO	1
<b>Total</b>	<b>87</b>

### References

1. Philips PA, Amaral JF: Abdominal Access Complications in Laparoscopic Surgery. J Amer Col Surg 192 (4) 525 – 36, 2001. 2. Bhojruyl, S, Vierra, MA, Nezhat, CR, Krummel, TM, Way, LW: Trocar Injuries in Laparoscopic Surgery. J Amer Col Surg 2001, 192: 677-683. 3. Sharp, HT, Dodson, MK, Draper, ML, Watts, DA, Doucette, RC, Hurd, WW: Complications Associated with Optical-Access Laparoscopic Trocars. J Amer Col Obstet Gyne, 2002, 99 (4) 553-555. 4. Catarci M, Carlini M, Gentileshi P, Santoro E: Major and Minor Injuries during the Creation of Pneumoperitoneum: A multicenter study on 12,919 cases. Surg Endo, Apr 2001, 565-569 5. Chandler JG, Corson SL, Way, LW: Three spectra of laparoscopic entry access injuries. J Amer Col Surg 192 2001 (4) 6. Apelgren KN, Scheeres DE. Aortic injury: a catastrophic complication of laparoscopic cholecystectomy. Surg Endosc 8: 689 – 691, 1994. 7. Saville LE, Woods MS: Laparoscopy and major retroperitoneal vascular injuries. Surg Endosc 9 (10): 1096-100, 1995.



**Above:** Note the small defect left by the combination of the AD port and intra-umbilical insertion. Tissue reapproximation is nearly complete. A single skin stitch was used at umbilical sites only. Cosmesis is excellent.

**Below:** Typical results when removing the new bladeless port. As the port is removed, the defect closes due to retained fascial tension. Note the non-linear tract and the nearly instant tissue reapproximation.



**190 of 261 (72.8%) ports used were 10mm. Fascial defects were not closed primarily on any port sites. No cases of post-operative incisional hernia were reported.**

Complication	#	%
Bowel Injury	0	0.00
Bladder Injury	0	0.00
Retro-Peritoneal Vascular Injury	0	0.00
Intra-Abdominal or Intra-Fascial Vascular Injury	0	0.00
Significant Port Site Bleeding	0	0.00
Post Op Incisional Hernia	0	0.00
<b>Total Number of Cases</b>	<b>87</b>	
<b>Total Number of 10mm Ports</b>	<b>190</b>	
<b>Total Number of 5mm Ports</b>	<b>71</b>	



The ADAPt Asymmetrical Dilating Access Port is a completely bladeless laparoscopic access port with a unique tip. It is designed to dilate through the fascial layers, creating a non-linear path, and separating muscle fibers instead of cutting them. This creates a small, tight defect that reapproximates after the port is removed. It is designed to avoid bladed trocar injuries, to require minimal insertion force, and to exhibit higher retention capabilities as well.



## CONCLUSION

Laparoscopic Gynecological Surgery can be performed without bladed trocars and the complications they create. ADAPt Bladeless ports performed well in all cases, even when patients presented with numerous previous abdominal surgeries. The ports went in with minimal effort, and left defects that did not require fascial closing. Injuries to bowel, bladder, or major vascular structures did not occur, nor did any other iatrogenic injuries. Significant port site bleeding did not occur. The ADAPt ports proved to be a safe and effective means of laparoscopic access, and a clear improvement over our previous trocars.

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