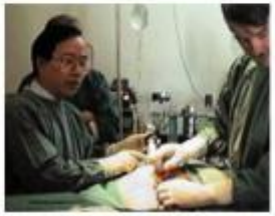
Has Laparoscopic Surgery replaced open abdominal surgery for benign gynaecological tumours – what and why

Prof Felix Wong
Ho Chi Minh, April, 2011

Foundation Chair and Professor of a UNSW teaching hospital at Liverpool, Sydney and the Director of Women and Children Health, Liverpool Health Service

Laparoscopic training centres, workshops and conferences

From a training centre



From learner

To trainer

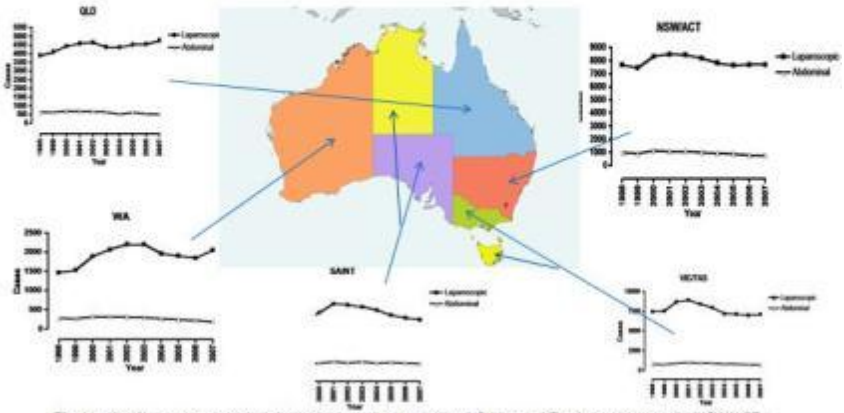
To Endoscopy conferences

A large number of overseas doctors had been trained at Liverpool

After 16 years of promoting and practicing laparoscopic surgery in Australia

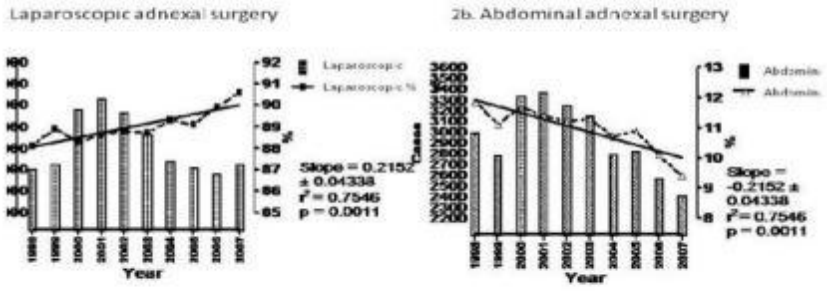
OUTCOME

Trends of laparoscopic surgery in Australia – adnexal surgery



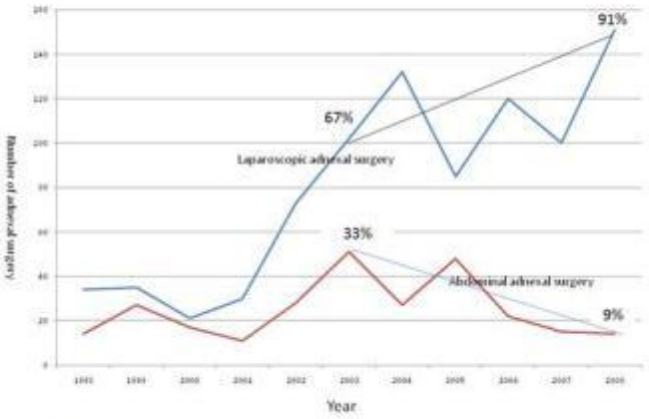
The trends of laparoscopic and abdominal adnexal surgeries in all States and Territories in Australia (NSW/ACT – New South Wales and Australian Capital Territory, VIC/TAS – Victoria and Tasmania, QLD – Queensland, SA/NT – Southern Australia and Northern Territory, WA– Western Australia)

Laparoscopic Adnexal Surgery



Trends of laparoscopic and abdominal adnexal surgery in Australia

The trend of laparoscopic and abdominal adnexal surgery at Liverpool Hospital, Sydney, Australia from 1998 to 2008



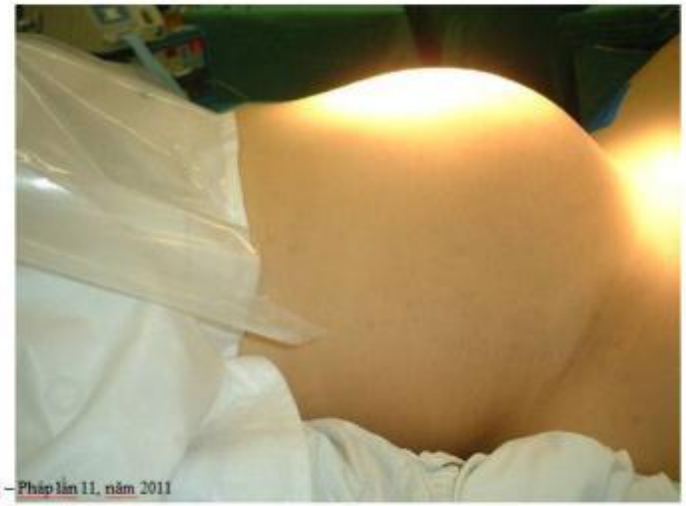
Abdominal surgery for adnexal mass

Factors influencing the choice of open abdominal approach		%
The adnexal mass had feature(s) suspicious of cancer	25	25.7
The adnexal mass was associated with other pathology e.g. very large cyst, multiple fibroids, adenomyoma, advanced endometriosis	34	35.1
The procedure would be difficult by laparoscopic approach	0	-
It was an emergency procedure	9	9.3
The patients was haemodynamic unstable	3	3.1
The laparoscopic procedure would take too long	0	-
Previous multiple abdominal surgeries	6	6.2
My standard/routine surgical approach for this condition	1	1.0
It was a scheduled elective procedure	18	18.6
Laparoscopic facilities in the OT were inadequate	0	-
Other – patient's choice	1	1.0

Difficult adnexal surgeries

- Stage III and IV endometriosis
- Very large ovarian tumour or cyst
- Multiple abdominal or pelvic adhesions
- Ovarian cyst complicating pregnancy
- Multiple pathologies – associated with fibroids, adhesions, adenomyoma, pelvic infection

Large ovarian cyst

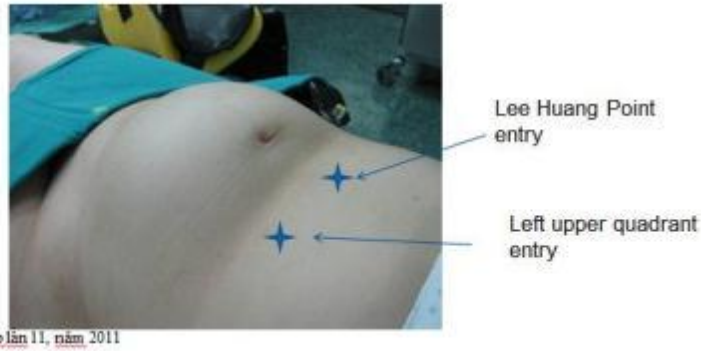


For very large ovarian cyst, just cannot do it ?

- Cannot perform peumoperitoneum
- Unknown pathology – dermoid cysts, borderline tumour, early cancer
- Rupture the cyst – associated with risk of cancer spread
- No space to operate
- ...etc.

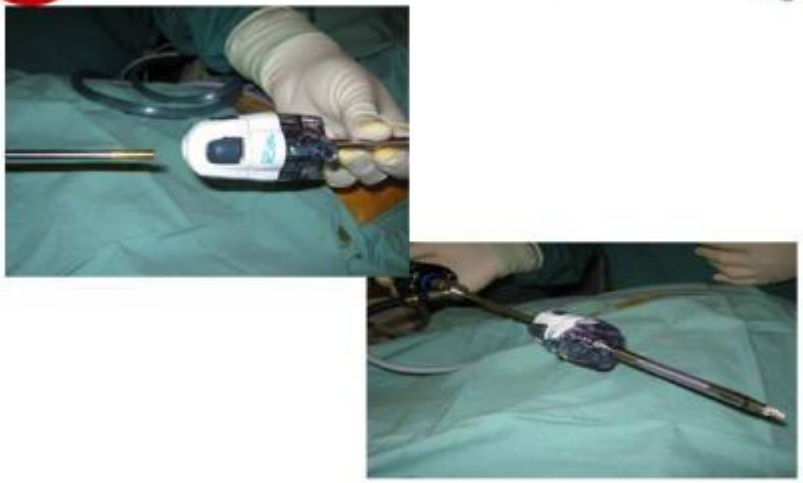
Entry at other port site

- Entry problem due to a large ovarian cyst

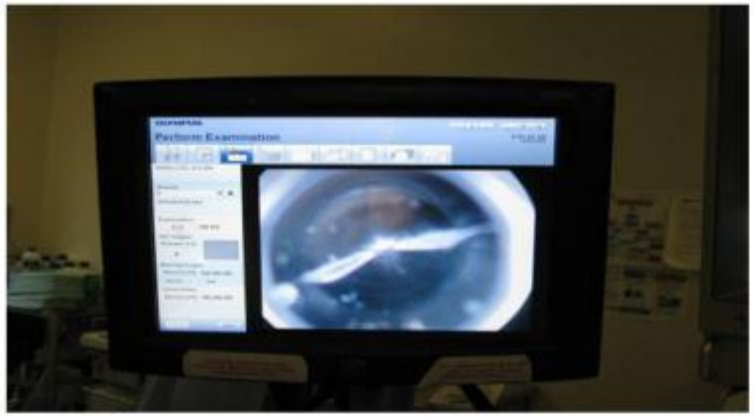


My 'direct entry' method – an introduction

Endopath Xcel (J&J)

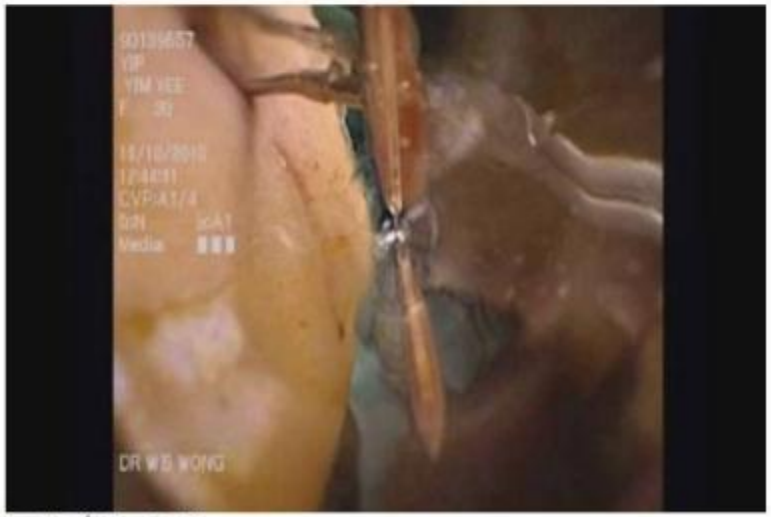


Direct visualization of the entry step/procedure via the monitor

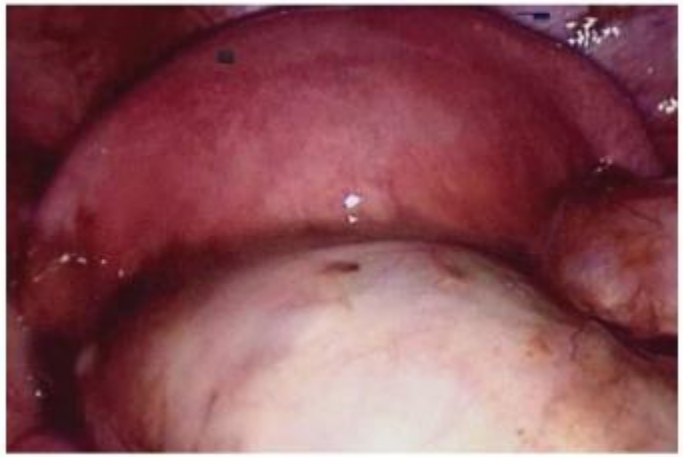


Direct visualization of all entry procedure via the monitor

Video showing removal of large ovarian tumour

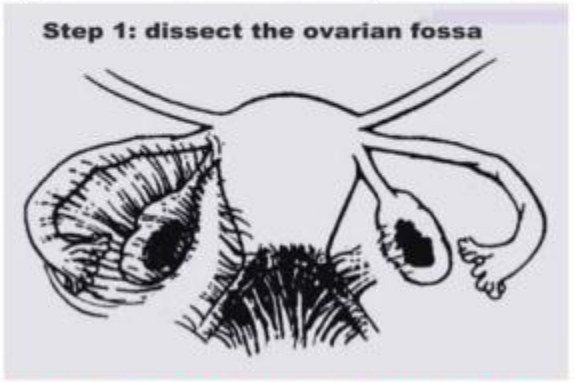


Advanced pelvic endometriosis



Advanced pelvic endometriosis

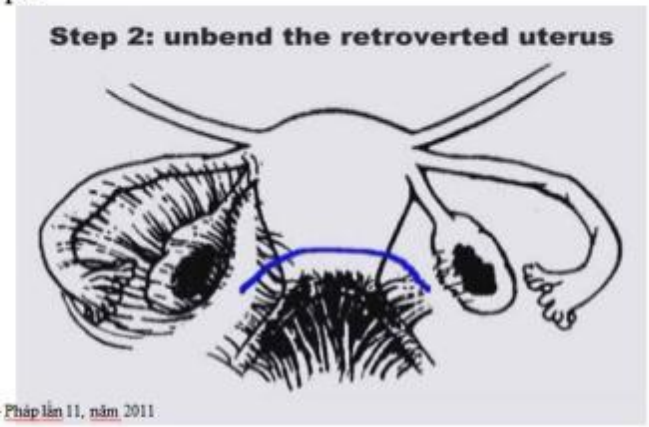
- Techniques to resolve advanced pelvic endometriosis – step 1



Tips of successful radical excision for advanced pelvic endometriosis - Dr Sun Chung-hsien

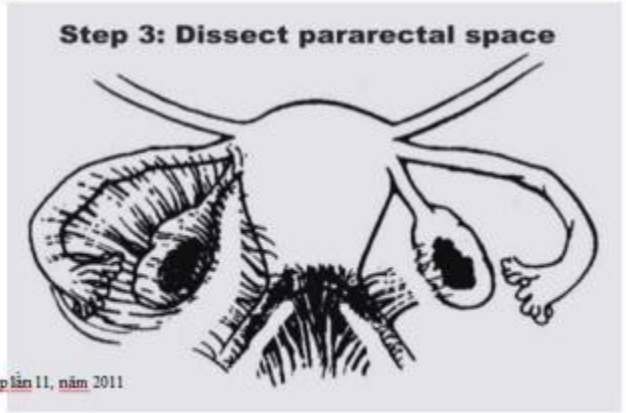
Advanced pelvic endometriosis

- Techniques to resolve advanced pelvic endometriosis – step 2



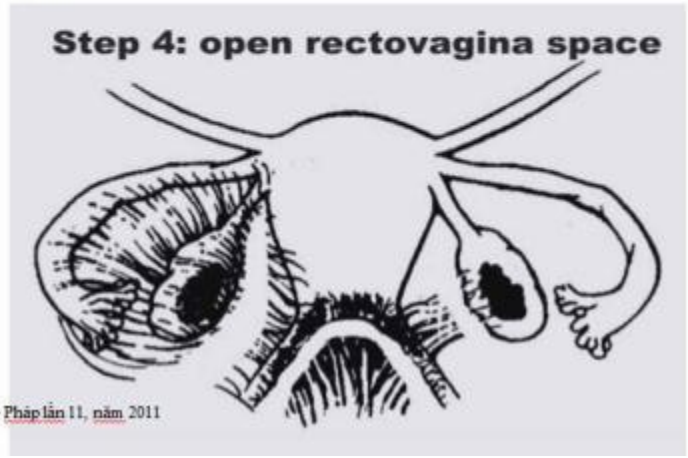
Advanced pelvic endometriosis

- Techniques to resolve advanced pelvic endometriosis – step 3



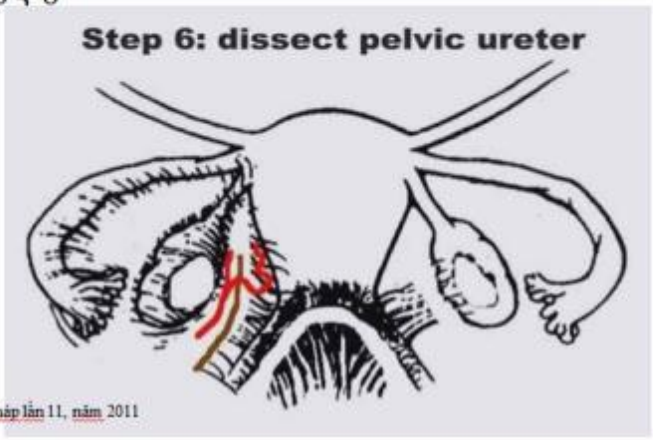
Advanced pelvic endometriosis

- Techniques to resolve advanced pelvic endometriosis – step 4



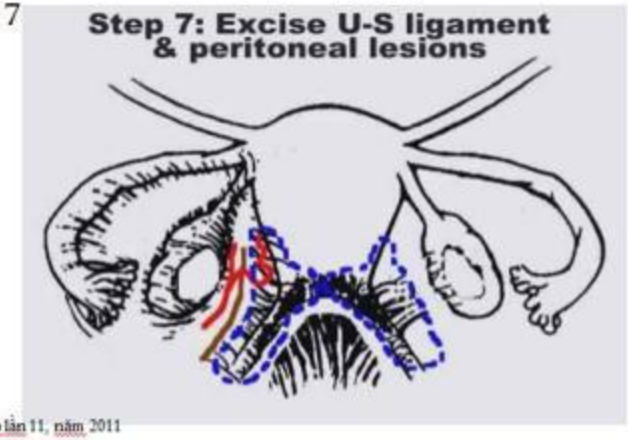
Advanced pelvic endometriosis

- Techniques to resolve advanced pelvic endometriosis – step 5-6



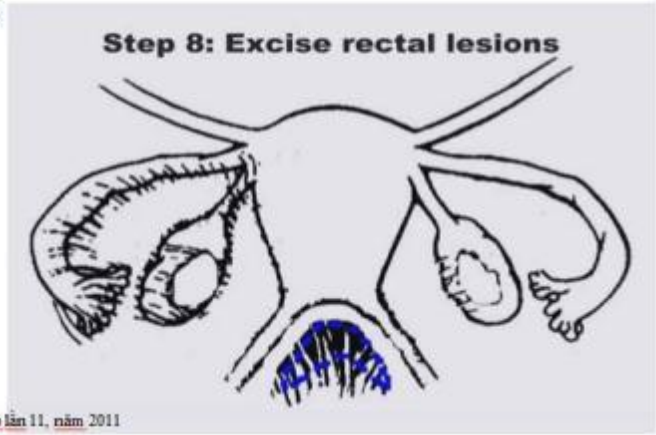
Advanced pelvic endometriosis

- Techniques to resolve advanced pelvic endometriosis – step 7

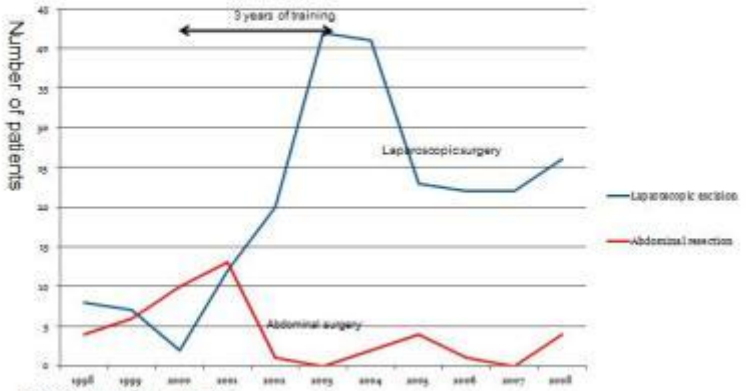


Advanced pelvic endometriosis

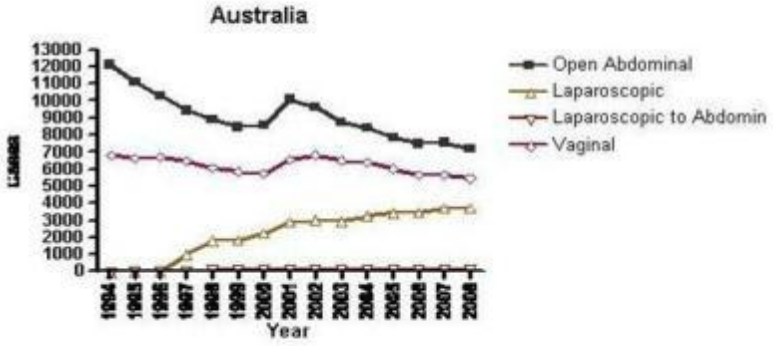
- Techniques to resolve advanced pelvic endometriosis – step 8



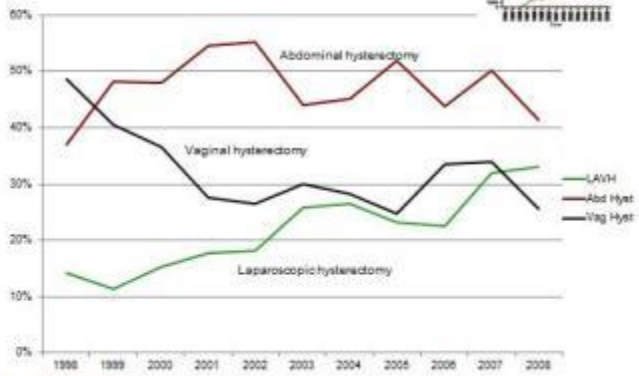
Laparoscopic resection of endometriosis versus abdominal endometriosis surgery in Liverpool Hospital



Trend of hysterectomy in Australia



Trend of Hysterectomy at Liverpool Hospital



A study of the trend on the factors affecting the choice of hysterectomy

Shao, J. and F. Wong (2001). "Factors influencing the choice of hysterectomy." Australian and New Zealand Journal of Obstetrics and Gynaecology **41(3): 303-306.**

The choice of hysterectomy laparoscopy vs abdominal

Factors influencing	Factors not influencing
• Training of doctors – laparoscopists versus general gynaecologists	• Age, BMI, parity
• Indications for hysterectomy	• Types of hysterectomy
•Pathology of the diseases	

Many difficult surgeries are performed by abdominal hysterectomy

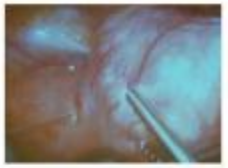
- Large uterus
- Massive adhesions
- Advanced endometriosis
- Radical cancer surgery

To share the

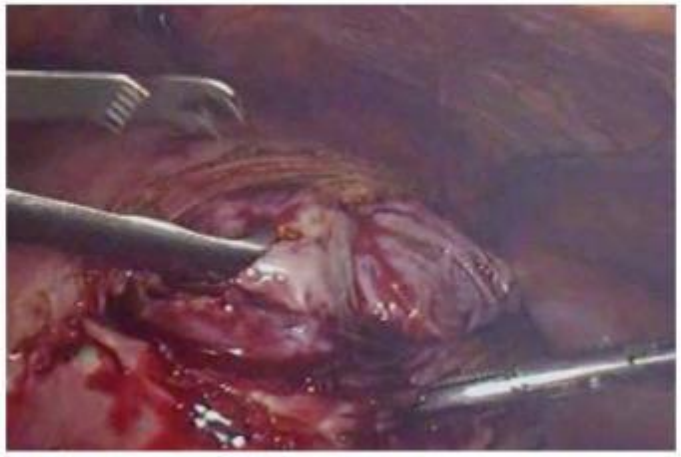
techniques to resolve the hurdle of difficult laparoscopic hysterectomy

Large fibroid uterus

- Laparoscopic morcellation in situ
- Vaginal morcellation of uterus after control of blood supply



Laparoscopic morcellation of in situ fibroid(s)



Morcellation in situ - Pushing the limit

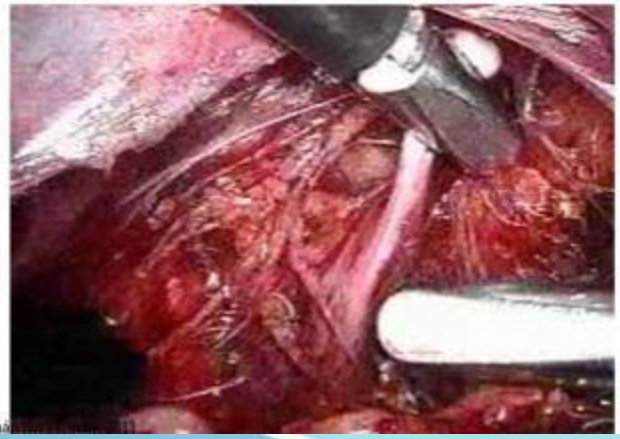
Laparoscopic removal of very large myomas

Patients: 51 with fibroid(s) = or > 9cm, max 21 cm
- Weight of fibroids: mean 698 g (210 – 3400 g)
- Mean op time: 136 min (80-270)
- Blood loss: mean 322 ml (100-2100 ml)
- Complications: one broad ligament hamatoma, one emergency hysterectomy

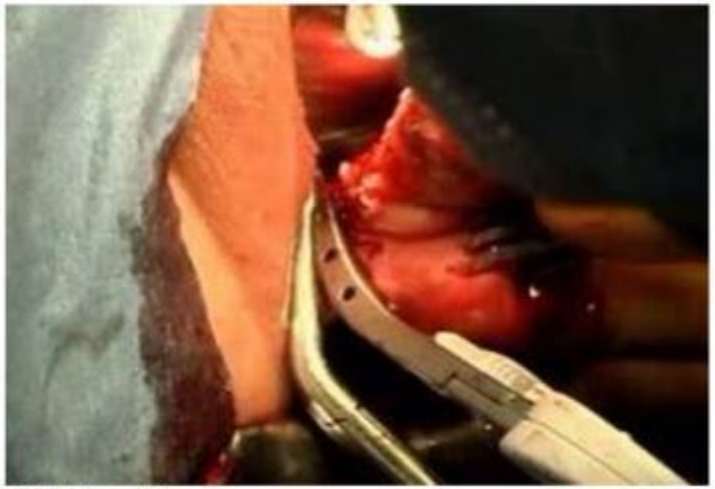
Sinha R, Hegde A, Warty N, Patil N. Journal of the American Association of Gynecologic Laparoscopists. 10(4):461-8, 2003 Nov

Techniques to perform LAVH with reduced bleeding

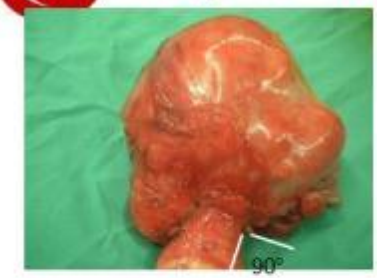
Ligation of bilateral uterine arteries prior to hysterectomy



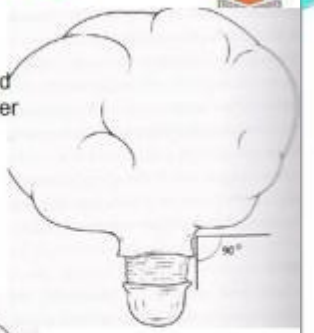
The use of new instruments



Shape of large uterus



Difficult
Failed to descend
Distortion of ureter
Inaccessible



Easier
Accessible
Normal anatomy

Dr Eric Lee's technique to perform LAVH with large fibroid uterus

- LAVH completed by vaginal morcellation with a paper roll technique

Report on our paper roll technique

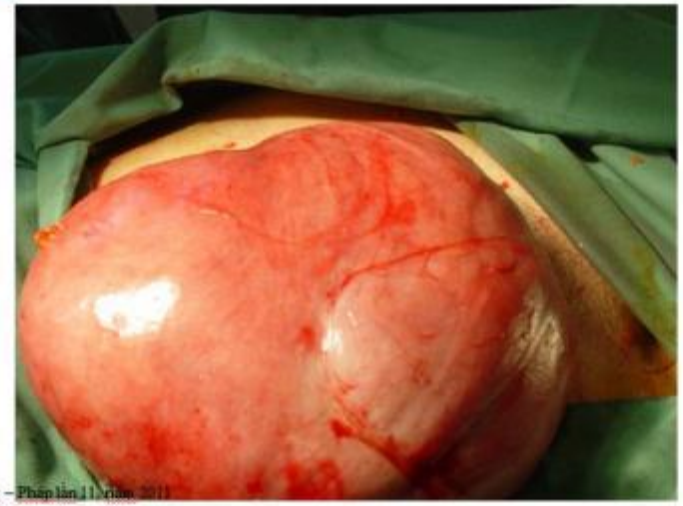
Instruments and Techniques

Novel Vaginal "Paper Roll" Uterine Morcellation Technique for Removal of Large (>500 g) Uterus

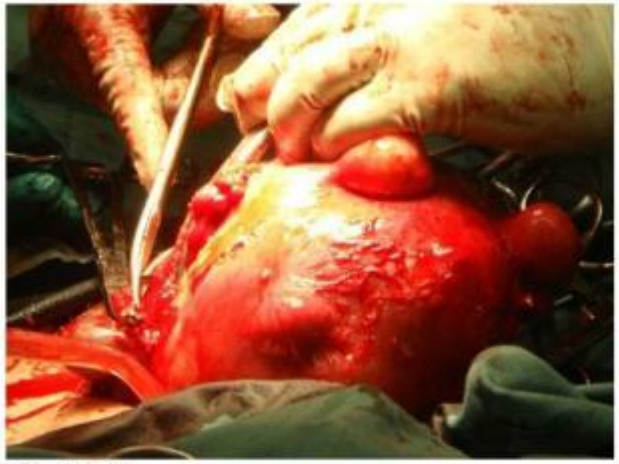
Wu Shun Pekit Wong, MBBS, MMed, MD, FRCOG, FRANZCOG, FHKCOG, FHKAM,
Tat Chee Eric Lee, MBBS, MRCOG, FRCOG, FHKAM, FHKCOG,
and Chi Rung Danforn Lim, MBBS, BSc, BMedSc, MMed, MAppMgt, MAppSc*

Changes and new developments in abdominal surgery

Abdominal hysterectomy is acceptable in very large uterus – general consensus



Uterus larger than 24 weeks



Minilaparotomy approach

- Benedetti-Panici P, Maneschi F, Cutillo G, Scambia G, Congiu M, Mancuso S. Surgery by minilaparotomy in benign gynecologic disease. *Obstetrics & Gynecology* 1996;87(3):456.
- Kohama T, Hashimoto S, Ueno H, Terada S, Inoue M. A technique of minilaparotomy-assisted vaginal hysterectomy. *Obstetrics & Gynecology* 1997;89(1):127.
- Hoffman M, Lynch C. Minilaparotomy hysterectomy. *American journal of obstetrics and gynecology* 1998;179(2):316-20
- Sharma J, Wadhwa L, Malhotra M, Arora R. Mini laparotomy versus conventional laparotomy for abdominal hysterectomy: A comparative study. *Indian Journal of Medical Sciences* 2004;58(5):196.
- Li-xia P, Ming-huo Y. Clinical evaluation of mini laparotomy intrafascial hysterectomy. *Chongqing Medicine* 2006;11.
- Muzii L, Basile S, Zupi E, Marconi D, Zullo M, Manci N, et al. Laparoscopic-assisted vaginal hysterectomy versus mini laparotomy hysterectomy: A prospective, randomized, multicenter study. *The Journal of Minimally Invasive Gynecology* 2007;14(5):610-15.

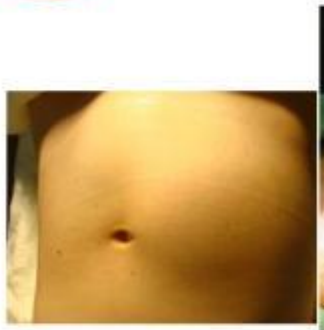
Laparoscopic hysterectomy vs modified abdominal hysterectomy – a personal series 2006-2009

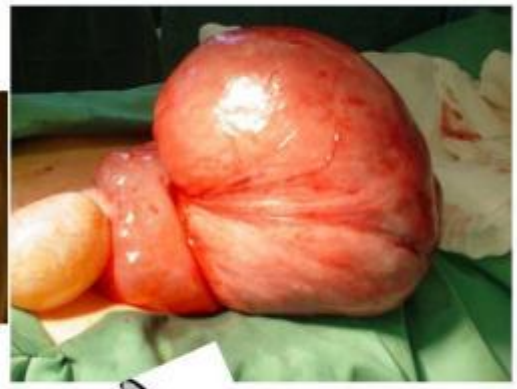
Patient characteristic	Minilaparotomy abdominal hysterectomy (MAH) (n= 146)	Laparoscopic hysterectomy (n= 160)
Age (mean ± SD) (yrs)	49.2 ±9.7	46.7±9.7
Adnexal surgery (%)	63 %	47 %
Weight of uterus (mean± SD) (g)	431.9 ± 428.4	159.8 ±125.1
Indications:		
Leiomyoma (%)	71.7 %	45.0 %
Adenomyosis (%)	21.7 %	33.3 %
Endometriosis (%)	2.2 %	3.3 %

Comparative data between Modified Abdominal and laparoscopic hysterectomy (retrospective study)

	ModifiedAbdominal hysterectomy N=146开腹	Laparoscopic hysterectomy N=160腹腔镜	P value < 0.05
Operative time (min)	45 ± 12	82 ± 11	S
Estimated cost / case AUD$	1900	4800	S
Conversion to laparotomy	16	5	S
Complications			
Fever	2.8%	3.0%	NS
Blood loss (ml)	120 ± 5.6	115 ± 5.1	NS
Bowel injury	0.7%	0.6%	NS
Visual pain score 1/10	5/10	4/10	NS
Analgesic > 2 days	13.6%	12.5%	NS
Length of stay (mean ± SD) (days)	3.4 ± 1.4	2.2 ± 1.0	S

Unknown pathology





Personally, I would prefer

Conclusion

- There is a trend of increasing laparoscopic surgery for benign gynaecological tumour because
  - Advanced technologies help – faster, safer and effective surgery
  - Many endoscopy centres push to the limit – developing new techniques
  - More training among young doctors – start early

Conclusion

At present, not all gynaecological surgeries are being replaced by laparoscopic surgeries in the management of benign tumour

e.g.

Abdominal hysterectomy versus Laparoscopy hysterectomy	Individualize each patient versus Choices of surgeons

Pathology of the tumour
Pelvic adhesion
Other relative contraindication
Time/duration

Primum, Noli Nocere – first do no harm

END

When the surgery and the patient for surgery are made safe, let now the surgeon make himself safe for his body and mind