

Surgical Reduction of a Fibroid Uterus – Robotic Myomectomy

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Financial Disclosure

- **I have no financial relationships with industry**
- **Receive honoraria**
 - **Editor-in-Chief Journal of Minimally Invasive Surgery**
 - **Section Editor- Up-To-Date**

***At the conclusion of this lecture,
the participant will be able to***

- Identify appropriate candidates robotic myomectomy
- Discuss how to control and manage blood loss should it occur
- Plan appropriate port placement and surgical technique
- Discuss tissue extraction techniques

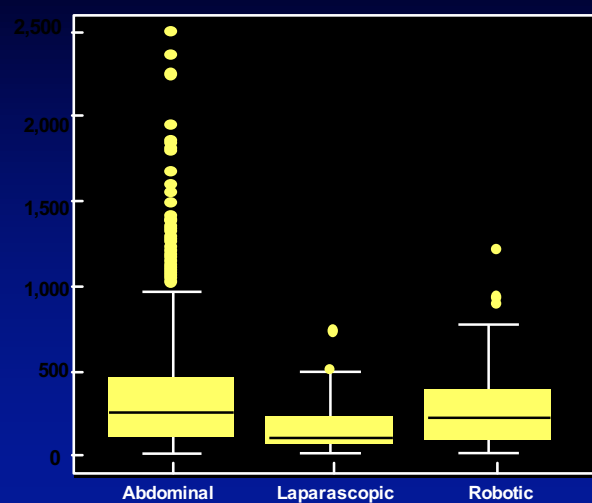
Steps in successful outcome

- Indication
- Surgical approach
 - Laparotomy, laparoscopy, robotics
- Dissection of fibroid
- Minimize blood loss
- Closure
- Tissue extraction

Enucleation & Closure: Can the robot make a difference in Surgical Outcome?



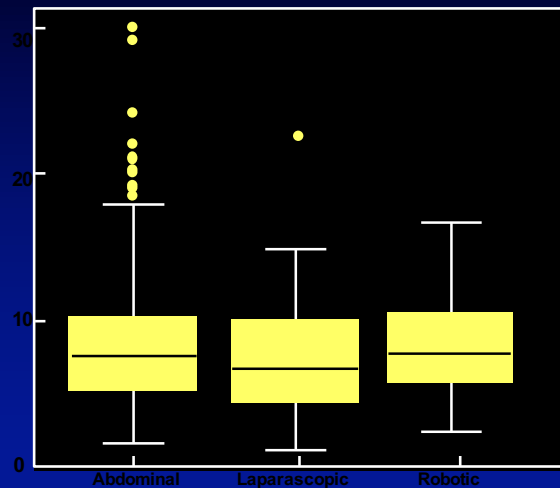
Weight of the Resected Myomas (in grams) by Surgical Approach



Overall
 $P < 0.001$

RM vs LM
 < 0.001

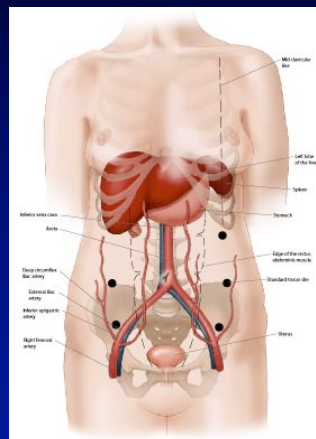
Maximum Diameter of the Resected Myoma (in cm) by Surgical Approach



(P=0.036)

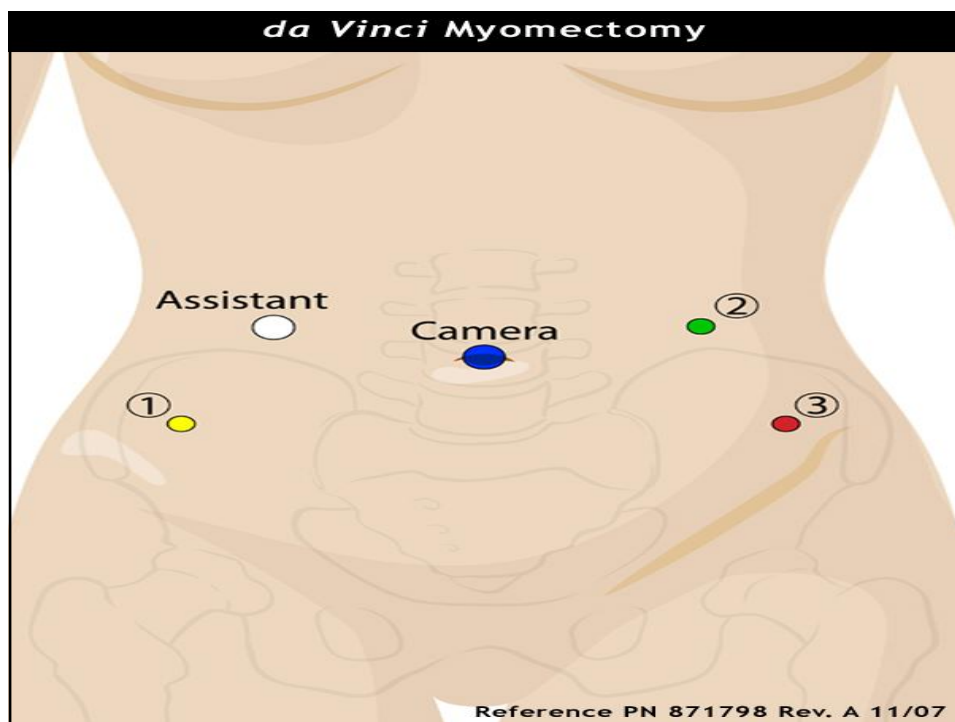
General technical observations

- Mean distance from symphysis pubis to the umbilicus less than 16 cm- so many patients require a port placement above the umbilicus.
- 8-10 cm between the endoscope and the top of the elevated uterus
- Uterine manipulator- important for injecting contrast
- Accurate myoma "mapping"
 - No tactile feedback

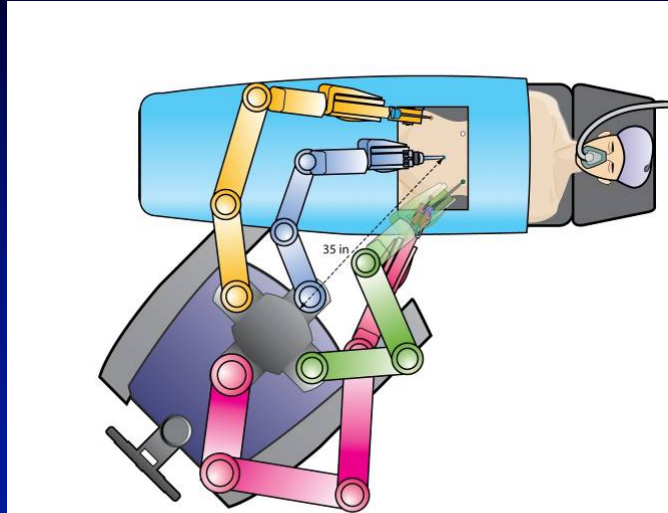


Port placement

- Should we use the third arm?
 - Usually not cost effective
- Where do we put the accessory port?



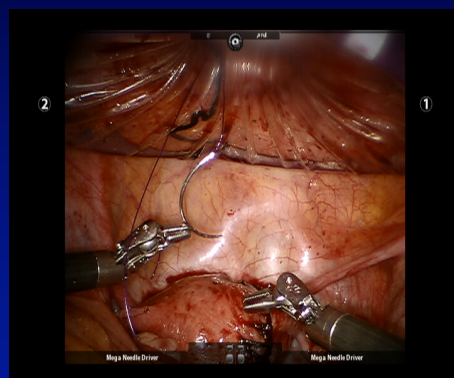
Side Docking – 4 arm





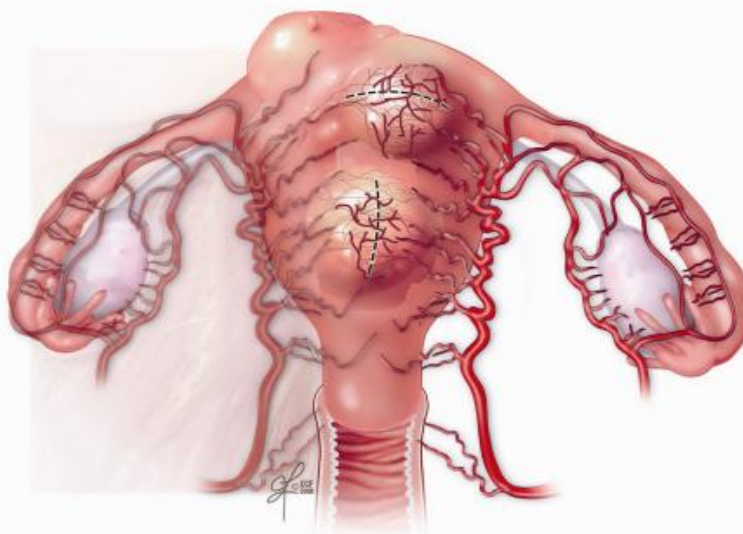


**If mini-lap: (extension of the
laparosocpy incision: umbilicus or
suprapubically**

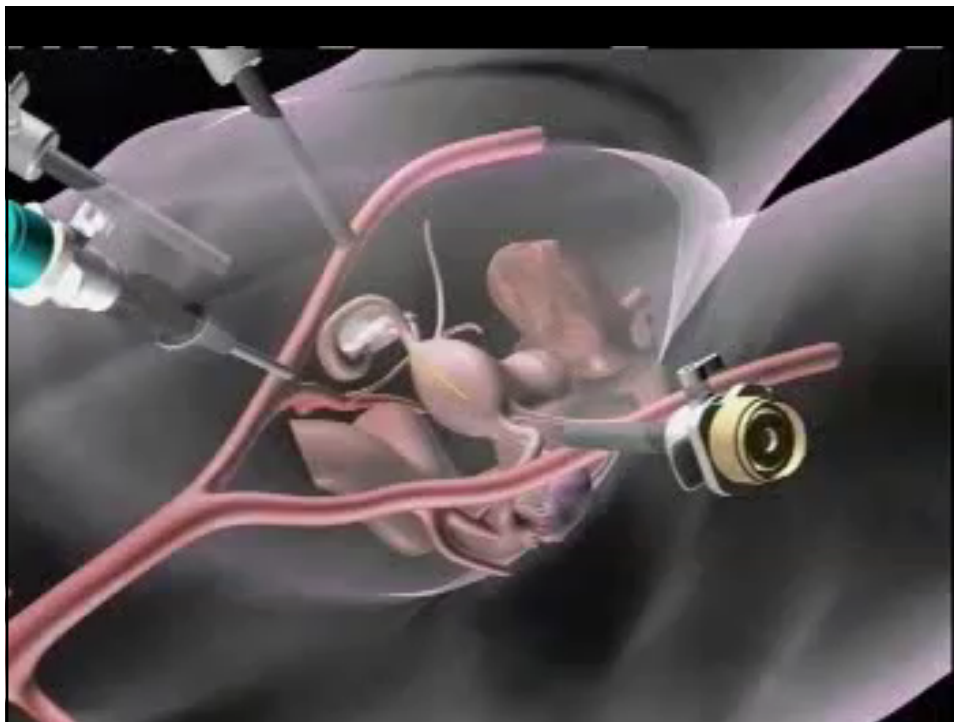
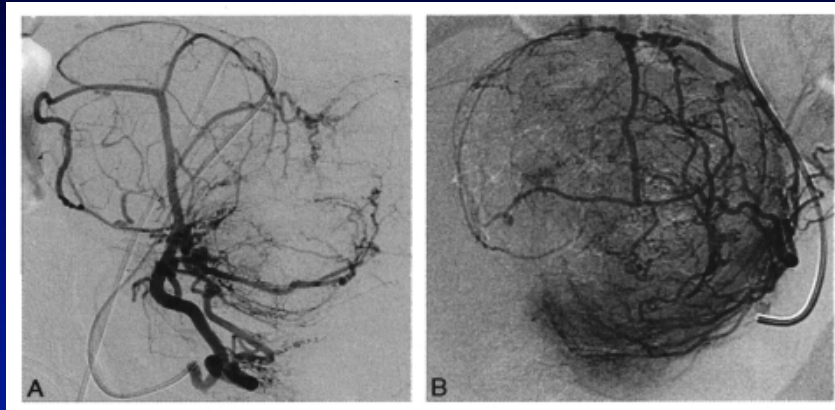


Techniques to minimize blood loss

Where do you put the incision?



Where do you put the incision?

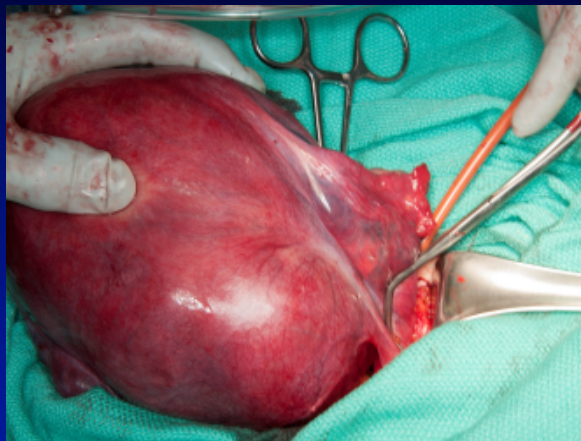
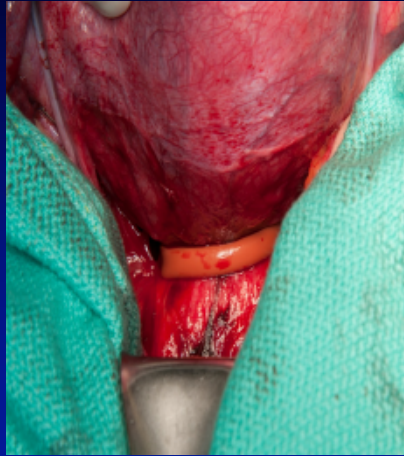
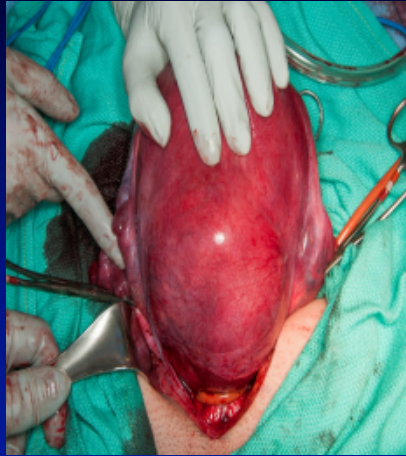


Incisions

- Improper plane of dissection
- Multiple uterine incisions vs. tunneling your way to all myomas

Preoperative GnRH agonist

- Lethaby A, Vollenhoven B, Sowter MC
 - Preoperative GnRH analogue therapy before hysterectomy or myomectomy for uterine fibroids. Cochrane database 2011 CD 000547
 - Effect size- 67 ml (95 % CI -90, -44)
 - No difference in rate of transfusion



Laparoscopic bulldog clamps



Interventions to reduce hemorrhage during myomectomy

- Cochrane review-Kongnyuy EJ, Wiysonge CS Cochrane database Syst Rev 2011 CD005355 2011
 - Bupivacaine plus epinephrine vs. placebo- not clinically different
 - Oxytocin no difference
 - No data on normal saline alone

Cochrane review

- **Misoprostol versus placebo**
 - Significant reduction in blood loss;
no effect on blood transfusion rate.

400mcg 1 hr before the procedure

Kongnyuy EJ, Wiysonge CS. Interventions to reduce hemorrhage during myomectomy for fibroids. Cochrane database Syst Rev 2014

Vasopressin & rectal misoprostol

- **Frederick et F&S 2013**
 - Abdominal myomectomies in Jamaica
 - RCT double blind
 - 334 ml vs. 623 mL blood loss
 - Hgb drop of 1.6 vs. 3.0
 - Rectal misoprostol (400mcg 30 minutes before surgery) & intraop vasopressin
 - Uterine weight 307-450 grams

Cochrane review

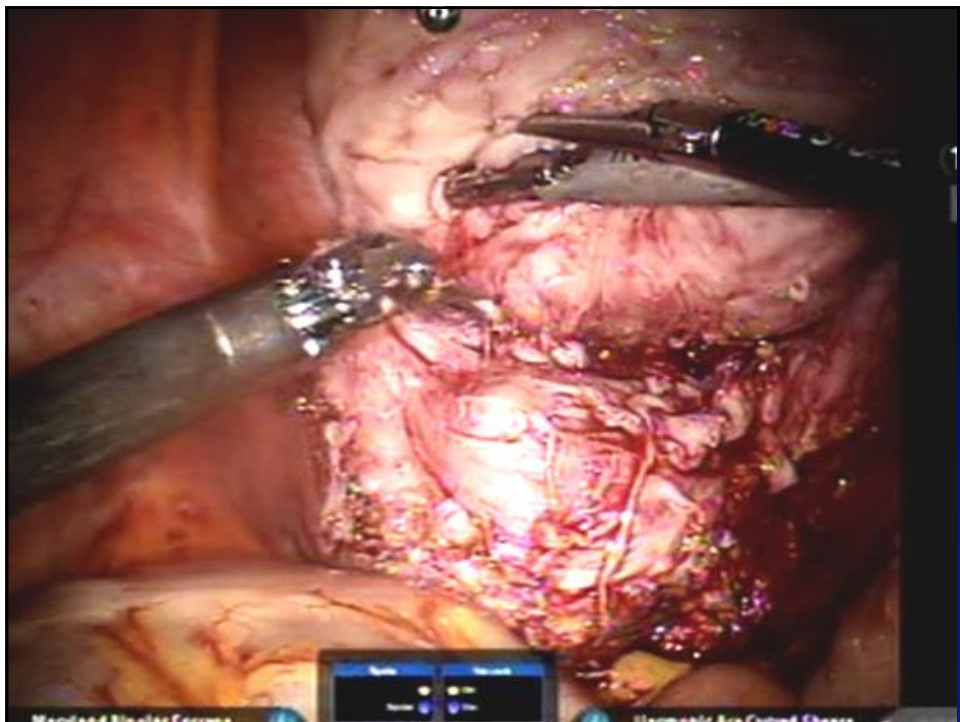
- **IV bolus of tranexamic acid (1000mg)**
- **Gelatin thrombin matrix (ex. FloSeal)**
 - **Significantly reduced blood loss at myomectomy and need for transfusion**

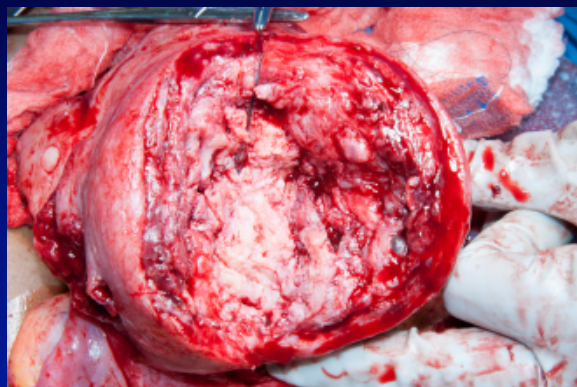
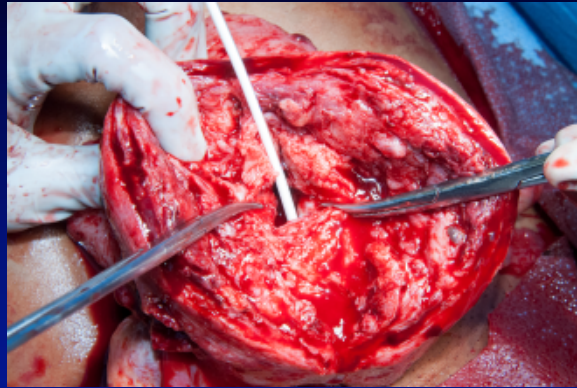
Barbed suture- Meta-analysis

- **Tulandi & Einarsson JMIG 2014**
 - **Suturing time decreased**
 - **Degree of suturing difficult was reduced**
 - **Trend towards decreased blood loss**

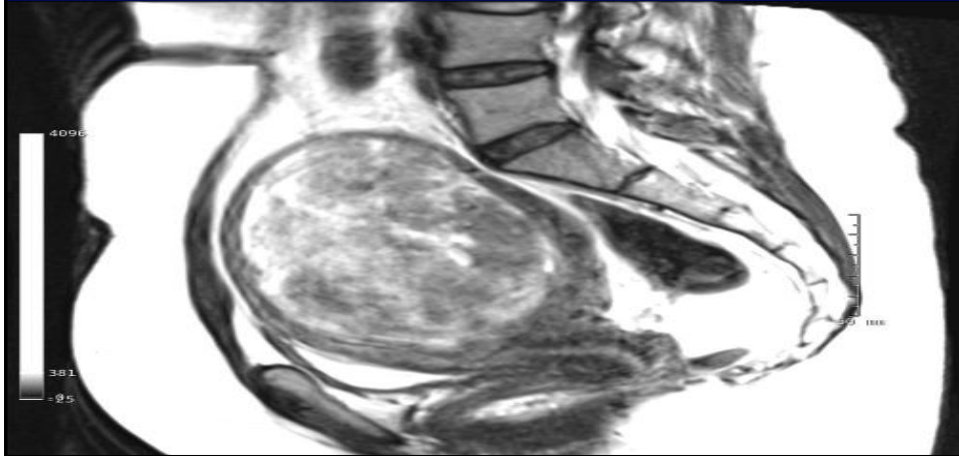
Main Worry during dissection

- Is missing entry into the cavity
- Intracavitary adhesion formation is a major problem for fertility
 - Recognize
 - Suture with 3-0 PDS- don't put suture into the cavity

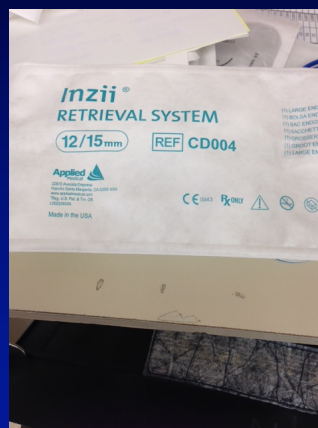




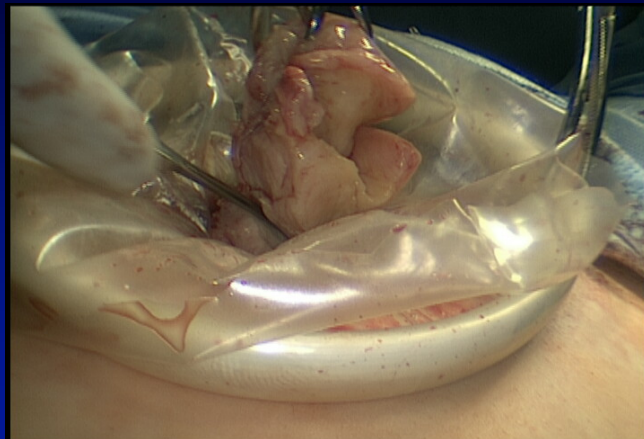
300 gram fibroid



Tissue extraction



Extracorporeal Tissue extraction at Minilap



Postoperative instructions

- How long to wait before attempting pregnancy? At least 3 months
- Mode of delivery- ?
 - No data to support the use of routine C/S

Conclusion

- **Robotic Surgery may have some advantage over conventional laparoscopic surgery for some surgeons.**
- **Robotics may help the suturing task**
- **There is a learning curve**
- **Robotic times are longer**
- **Costs ?**
- **Tissue extraction is now a political problem**