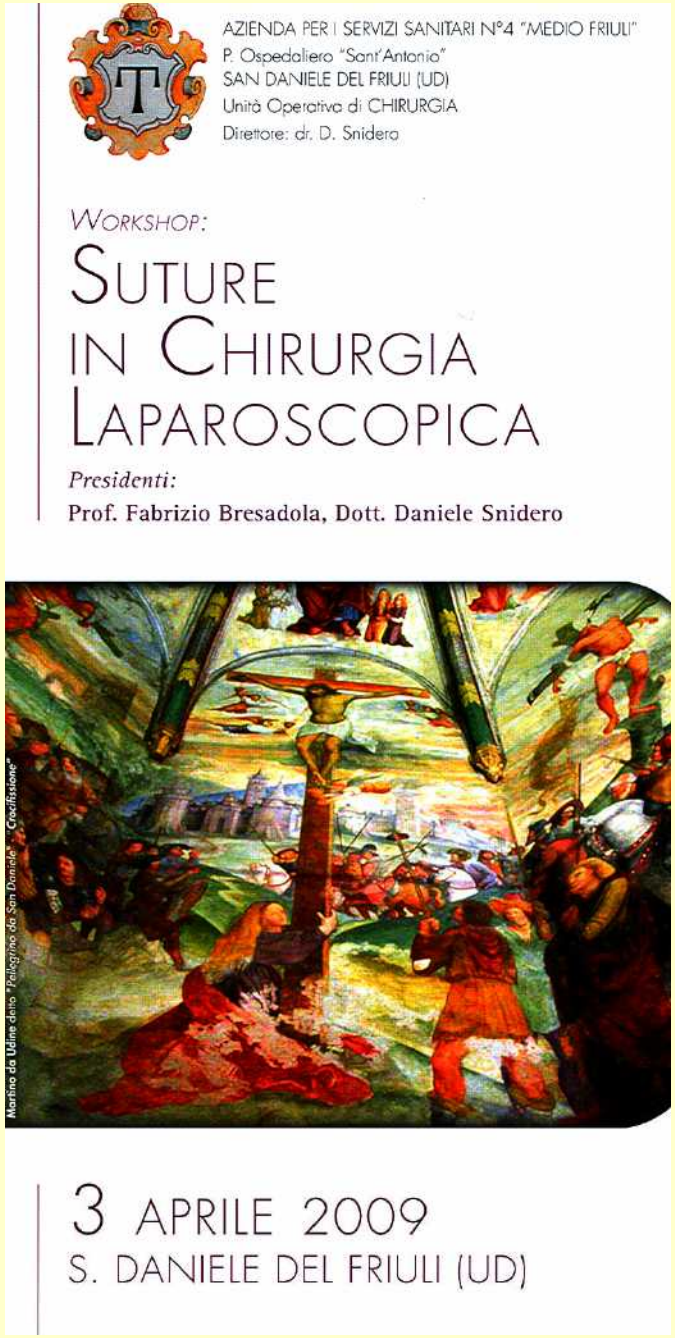


LE SUTURE IN CHIRURGIA GINECOLOGICA

Dott. Giovanni Del Frate

S.O.C. di Ostetricia e Ginecologia
San Daniele del Friuli - Udine

Lo scopo di tutte le tecniche di sutura laparoscopica è quello di legare i grossi vasi e i peduncoli tissutali, con lo stesso grado sicurezza di quello della chirurgia open

Garry R., 1999

Lo scopo di tutte le tecniche di sutura laparoscopica è quello di legare i grossi vasi e i peduncoli tissutali, con lo stesso grado sicurezza di quello della chirurgia open

Garry R., 1999

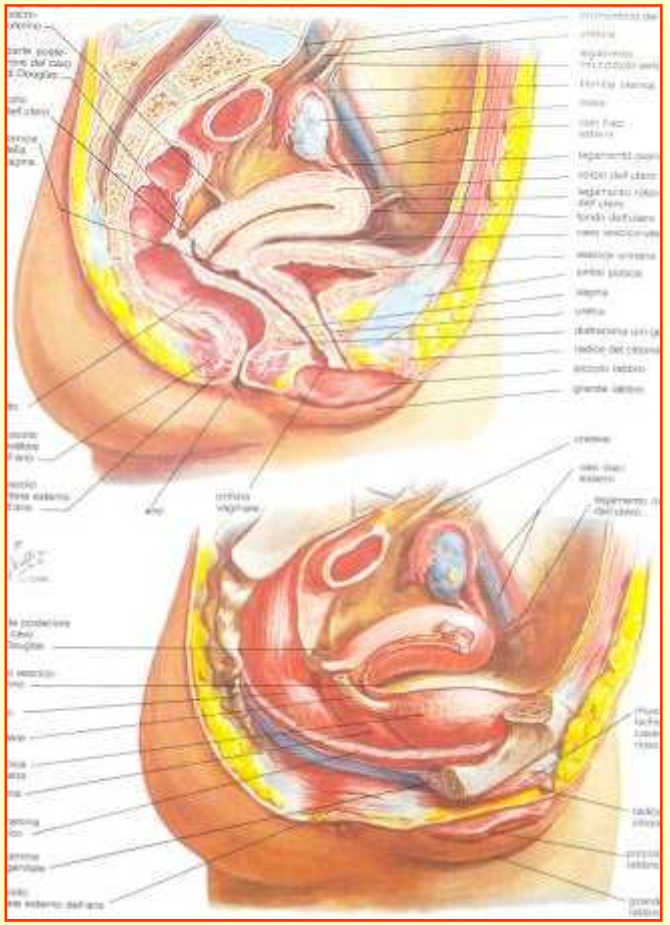
Elettrochirurgia

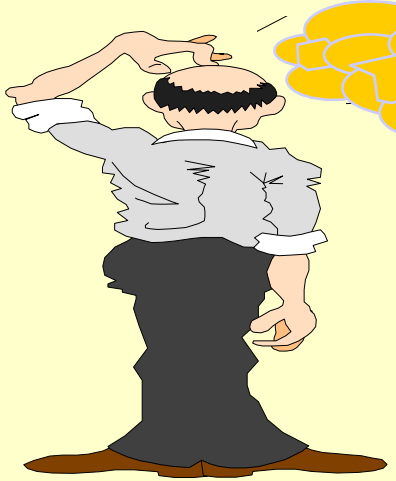
BIPOLARE

ULTRASUONI

RADIOFREQUENZA

- Ablazione/escissione laparoscopica del nervo uterosacrale
- Ablazione/escissione dell'endometriosi
- Adesiolisi
- Annessiectomia
- Cistectomia/ovariectomia
- Colposospensione/procedure di sostegno pelvico
- Isterectomia totale/subtotale
- Linfoadenectomia pelvica e/o aortica
- **Miomectomia**
- Occlusione tubarica per sterilizzazione
- Procedure per infertilità
- Salpingectomia/salpingotomia per GEU
- Reanastomosi tubarica
- Fimbrioplastica/Salpingostomia





The role of fibroids as a possible cause of infertility has been the subject of considerable debate

Uterine fibroid as the sole factor occurs in only 2 - 3 % of all infertility cases

Buttram and Reiter, 1981

Uterine fibroids may be associated with 5 - 10% of cases of infertility

The American Fertility Society Guideline for Practice, 1992

The tendency to postpone the first pregnancy to a later age makes myomectomy an increasingly common consideration for the patient and her gynaecologist because of the more frequent occurence of myomata in women over 30 years.

Sudik R., 1996

…our analysis suggests that the efficacy of conservative surgery for uterine fibroids in women with otherwise unexplained infertility was fairly good, with > 60 % of subjects becoming pregnant within a year of surgery.

Vercellini P., 1998

Uterine fibroids and infertility

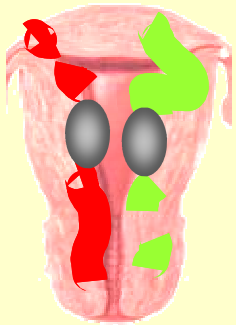
THESE THEORIES ARE PLAUSIBLE, ALTHOUGH SEVERAL ARE GENERALLY UNPROVEN

Fibroids distort the uterus

Damege of the overlying endometrium

- Endometrium vascular disturbance
- Inflammation
- Ulceration
- Thinning and atrophy
- Altered biochemical environment

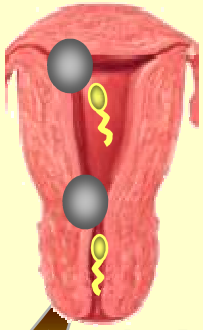
- Impair implantation

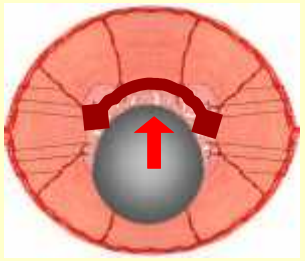


Uterine function

- May cause dysfunctional and altered uterine contractility

- Hinder gamete transport and embryo implantation





Anatomy

- Can enlarge and elongate the cavity
- Alter the contour and surface area of the cavity
- Obstruct tubal ostia or the cervical canal
- Displace the cervix in vagina

- Impede migration of sperm, ovum or embryo
- Impair implantation

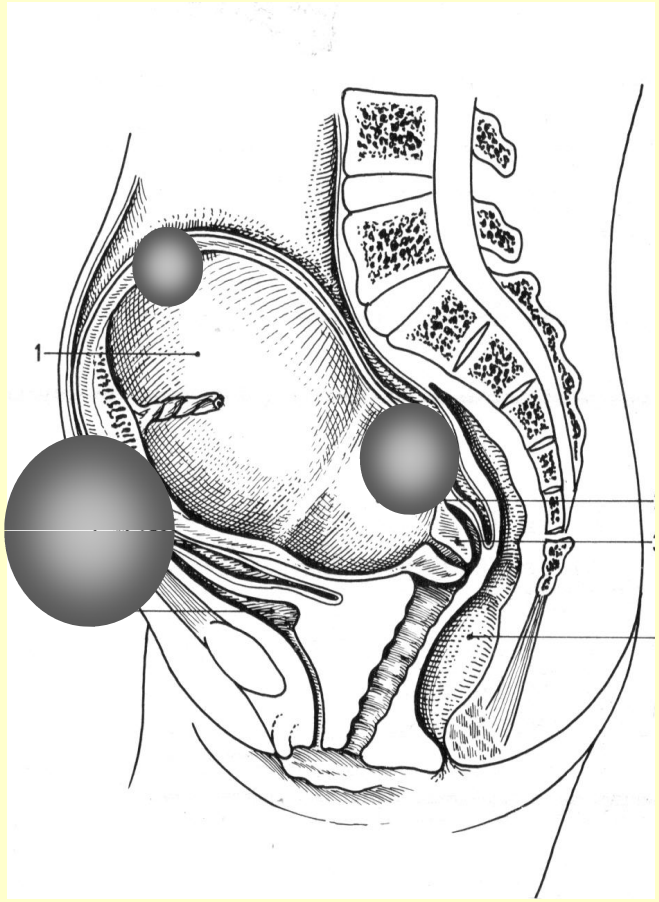
- Deglidish, 1970
- Coutinho, 1971
- Farrer-Brown, 1971
- Hunt, 1974
- Forssman, 1976
- Buttram, 1981;
- Iosif, 1983
- Manyonda, 2004

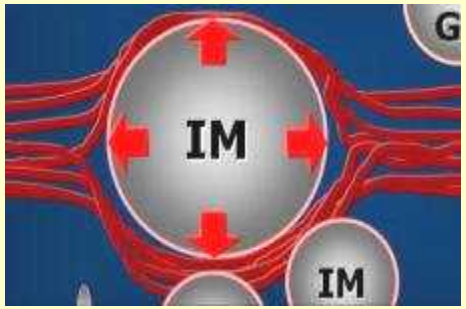
Miscarriag

Abruptio placentae

Placentation and placenta interferences

IUGR





Abnormal uterine contractility in labor

Localization Previa

Space occupation

Distocya

Postpartum haemorr.

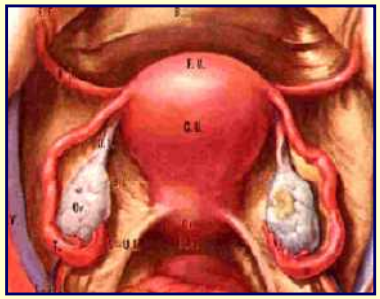
Disregulation of uterine contractility

Pregnancy	Postpartum

Preterm delivery

SCOPO DELLA CHIRURGIA ?

- Enucleazione del mioma
- Ripristino dell'anatomia dell'utero
- Trattamento delle patologie associate

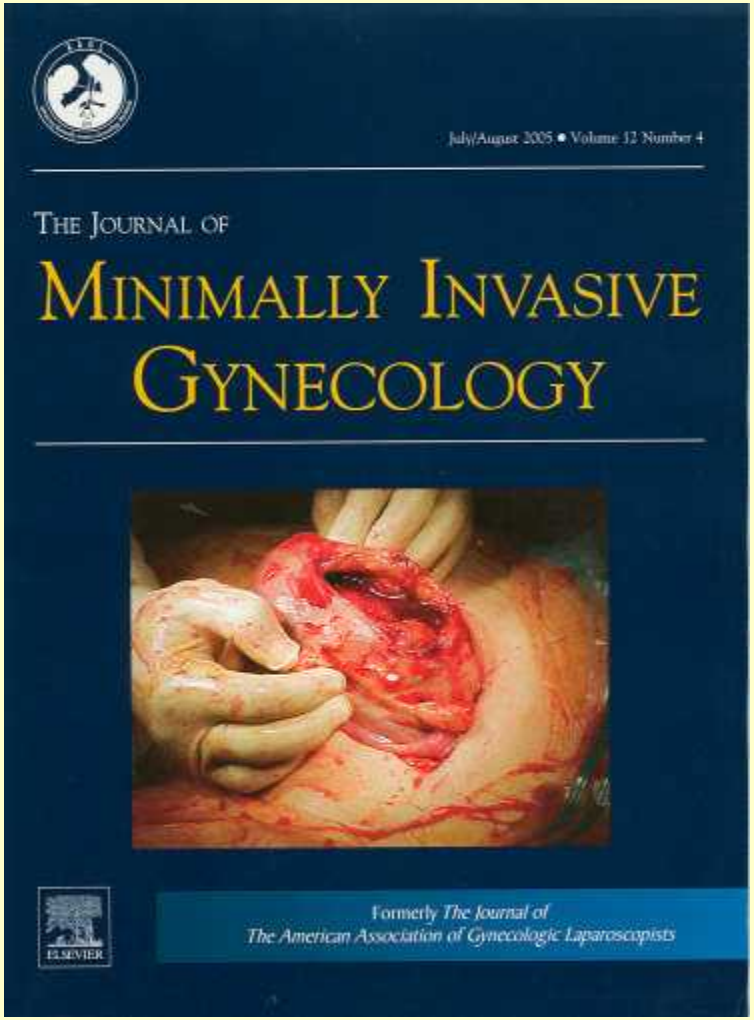


RISCHI DELLA CHIRURGIA ?

- **CREAZIONE DI ADERENZE POSTOPERATORIE**
- **ROTTURA D'UTERO**

Uterine rupture after laparoscopic myomectomy

THE INCIDENCE IS DIFFICULT TO DETERMINE, AS MOST OF THE REPORTS DO NOT DESCRIVE THE INCIDENCE PER NUMBER OF PROCEDURES PERFORMED



- **Uterine rupture was defined as a complete separation of the wall of the pregnant uterus with or without expulsion of the fetus, endangering the life of the mother or fetus**
- **The scars checked during the Caesarean section is also classed as:**
  - **invisible**
  - **thick (visible but with no distinct depression in the myometrium)**
  - **thin (when the myometrium was thinner at the scar site without discontinuity)**
  - **dehiscent (discontinuity of the scar, without symptoms)**

Pregnancy outcome and deliverie following laparoscopic myomectomy

Dubuisson JB, et al. Hum Reprod vol.15, no.4, pp 869-873, 2000

Reference	Myoma Type	Size (mm)	Location	Hysterotom sutured	Uterine cavity opened	Gestational age (weeks)	Labour	Infant outcome
Pelosi 97	Subserous	50	Fundal	No	No	33	No	Death
Friedman 96	Intramural	50	Fundal	NR	Yes	28	No	Good
Mecke 95	Intramural	NR	NR	NR	Yes	30	No	Good
Dubuisson 95	Intramural	30	Posterior	Yes	No	32	No	Good
Harris 92	NR	30	Posterior	Yes	NR	34	No	Good

RISK OF UTERINE RUPTURE RELATED TO LM SCAR

1.0% (95% CI 0.0-5.5%)

Mode of delivery (n=100)	
Spontaneous vaginal delivery	36
Forceps delivery	22
Cesarean section during labour	14
Cesarean section before labour	28

Elective Caesarean section for uterine scar	16 (38.1%)
Failed trial of labour	14 (33.3%)
Maternal or fetal pathology	6 (14.3%)
Breech presentation	3 (7.1%)
Suspected uterine rupture	3 (7.1%)

Reference	Myoma Type	Size (mm)	Location	Hysterotom sutured	Uterine cavity opened	Gestational age (weeks)	Labour	Infant outcome
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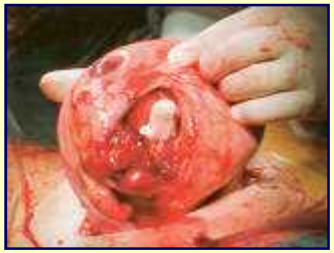
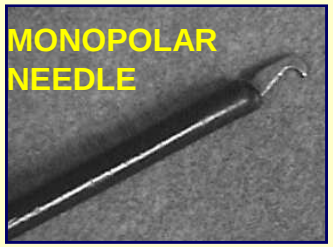
Dubuisson 95	Intramural	30	Posterior	Yes	No	32	No	Good
Harris 92	NR	30	Posterior	Yes	NR	34	No	Good
Oktem 01	Subserous	40	Cornual	No	No	17	No	Death
Hasbargen 02	Pedun. (2)	10	Posterior	NR	No	29	No	Good
Asakura 04	Intramural	NR	Anterior F.	NR	No	34	Yes	Good
Lieng 04	Pedun.	40	Posterior	No	No	35	No	Good
Grande 05	Intramural	45	Posterior	NR	NR	27	No	Death



The lack of suture, or suturing only the superficial layers of the myometrium, resulted in thin or dehiscent scars.

Inappropriate use of electrocautery may sometimes have induced in-deph necrosis of the myometrium with an adverse effect on healing.

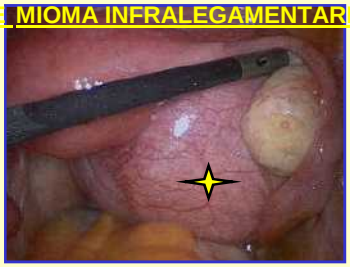


The suture must take up the whole deph of the edges of the hysterotomy in order to ensure that the whole of the myomectomy bed is brought into contact, so that secondary formation of a haematoma in the myometrium is avoided

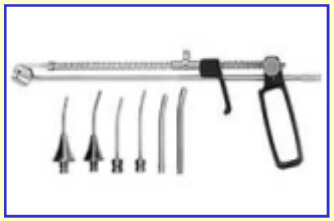
Surgeon's lake of experience

MIOMECTOMIA

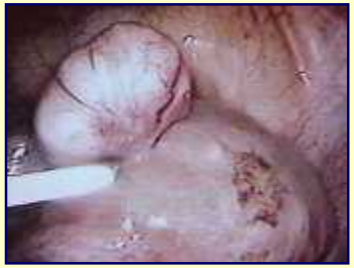
VISIONE D'INSIEME DELL'UTERO



CROMOSALPINGOGRAFIA



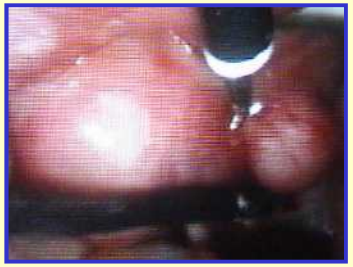
MIOMI PEDUNCOLATI



ENDO LOOP

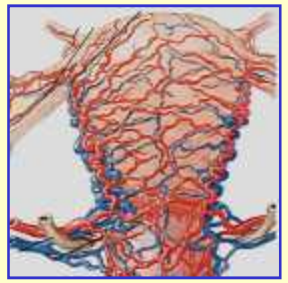
MIOMECTOMIA

INCISIONE DELLA SIEROSA

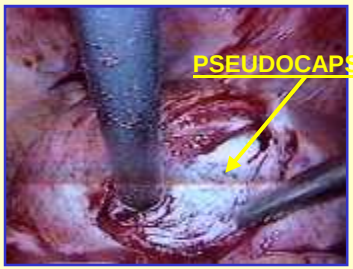


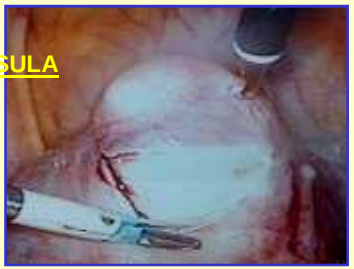
UNCINO AD ULTRASUONI

- Evita il danno termico
- Non dà fumo, solo bollicine d'acqua micronizzate

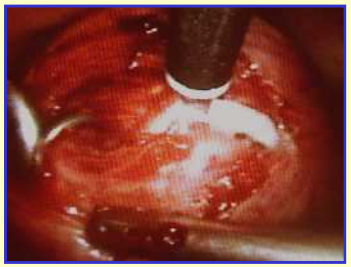


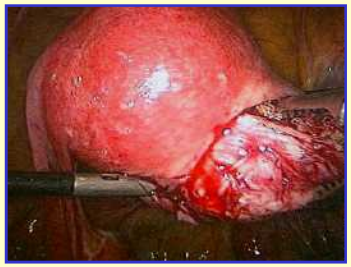
INDIVIDUAZIONE PSEUDOCAPSULA

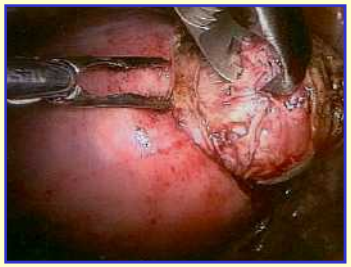


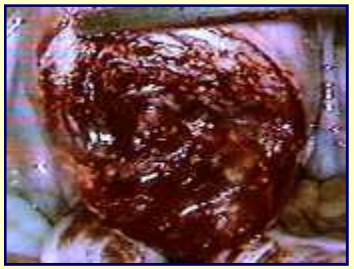


TRAZIONE ED ENUCLEAZIONE MIOMA

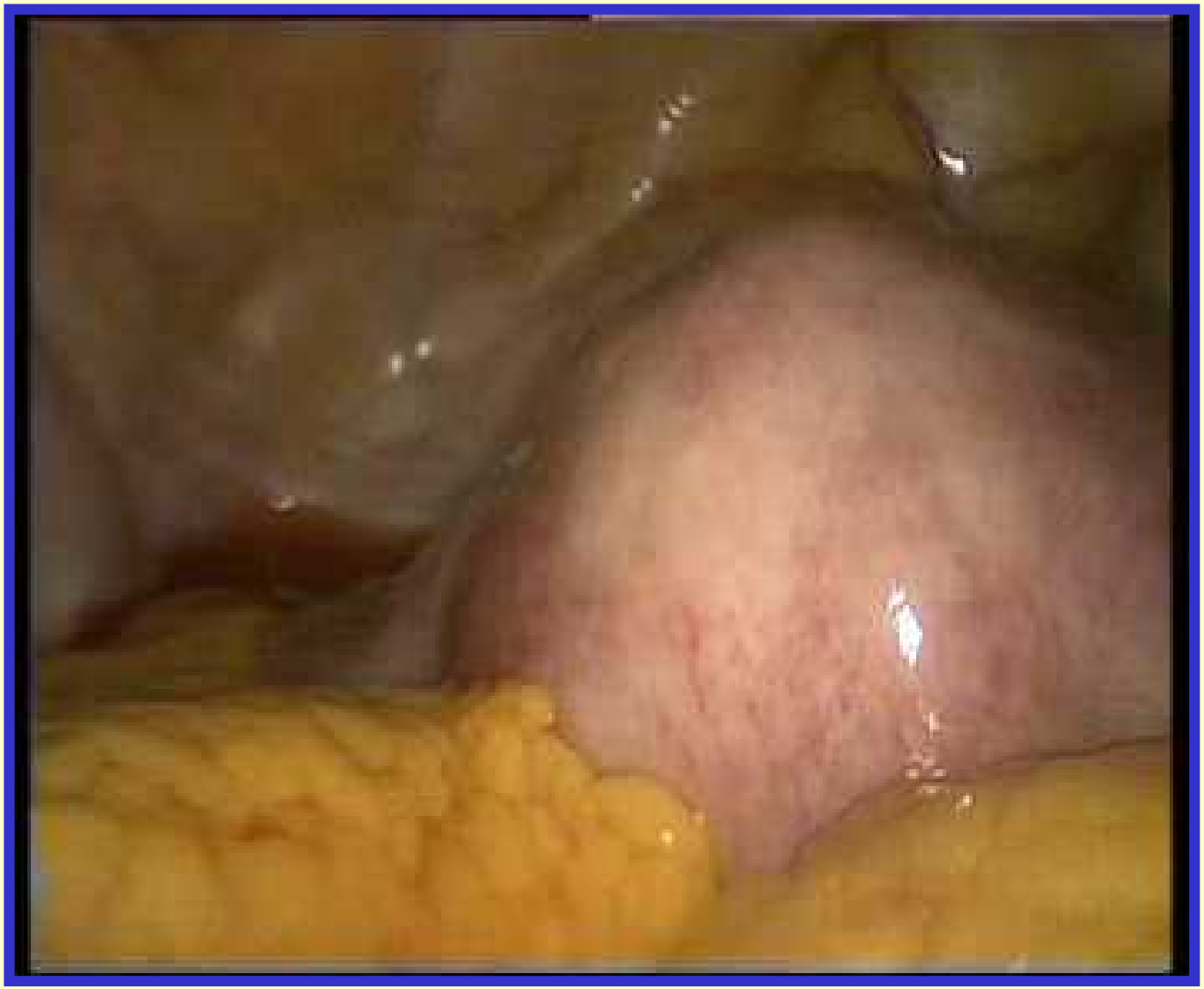








MIOMECTOMIA



SUTURA DELLA BRECCIA UTERINA

1995

… Anche in circostanze ideali, la chiusura laparoscopica della breccia è difficoltosa. L'avvicinamento dei margini dell'incisione richiede spesso una forza considerevole che per via laparoscopica è difficile da ottenere senza lacerare i tessuti. Spesso, quindi, il risultato è rappresentato da un maggior sanguinamento o dalla perdita di sostanza a livello della breccia. Questo tempo dell'intervento è particolarmente noioso e può portare alla formazione di fistole endometrio-sierose. La riparazione precisa dei diversi strati della parete è praticamente impossibile.

… IL PUNTO DI SUTURA…

La trasfissione di un tessuto con un ago e' il movimento piu' complesso da eseguire in laparoscopia

STUDIO DEGLI ANGOLI DI SUTURA FAVOREVOLI

↓

TROCAR FAVOREVOLE PER IL PORTAGHI

↓

ORIENTAMENTO DELL'AGO NEL PORTAGHI

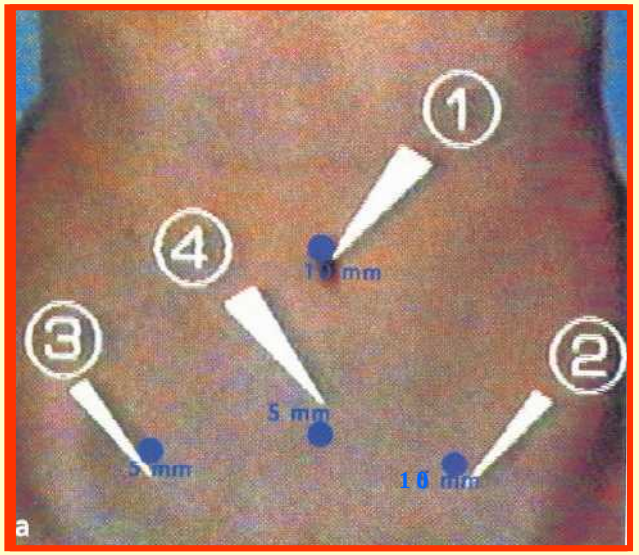
↓

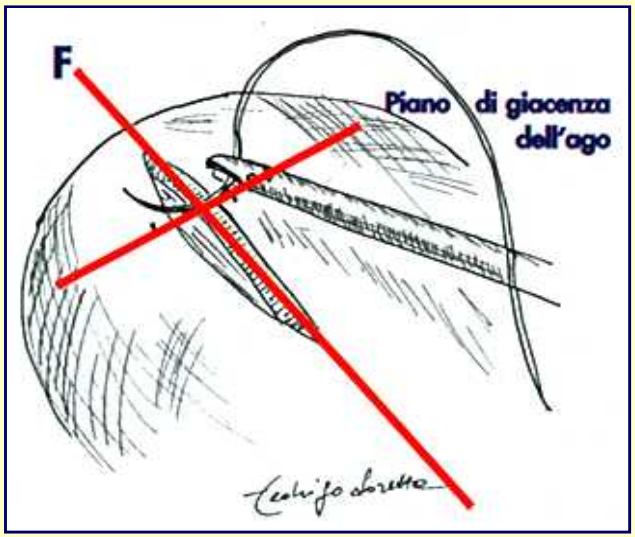
VERSO DEL PUNTO (DX-SX) – CON QUALE MANO

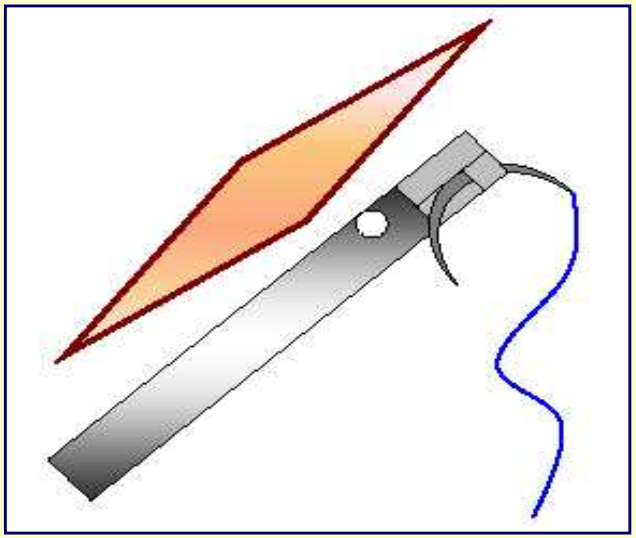
A. Romeo, 2006

STUDIO DEGLI ANGOLI DI SUTURA FAVOREVOLI

I TROCAR ANCILLARI IMPONGONO
DEGLI ANGOLI
NELL'ESECUZIONE DELLA SUTURA



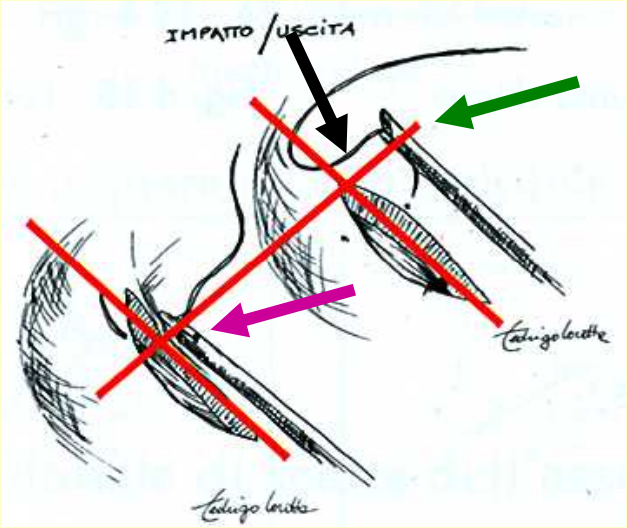




COMPLANARI AL PIANO DI SUTURA

A. Romeo, 2006

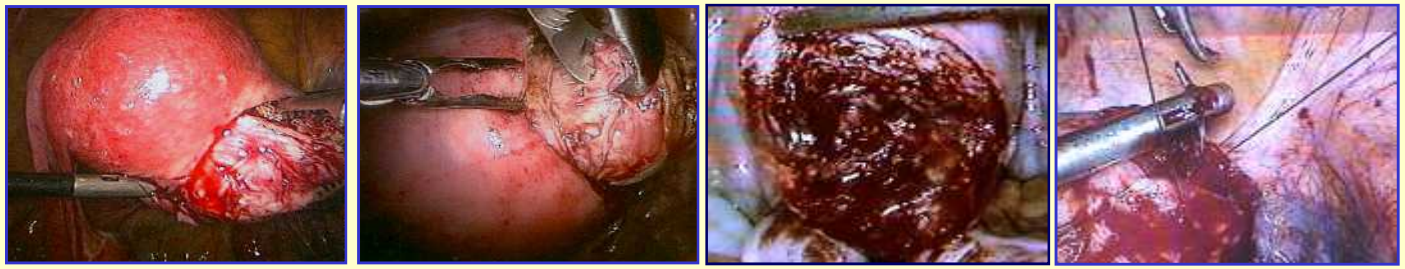
… IL PUNTO PERFETTO…



- **ANGOLO di 90° tra l'asse di ROTAZIONE del portaghi e la tangente della massima curvatura dell'ago**
- **ANGOLO di 0° tra l'asse di ROTAZIONE del portaghi e l'asse passante per il piano della rima tissutale**
- **ANGOLO di 90° tra la tangente della massima curvatura dell'ago e l'asse della rima tissutale**

A. Romeo, 2006

Come facciamo ad essere sempre paralleli alla rima tissutale ?

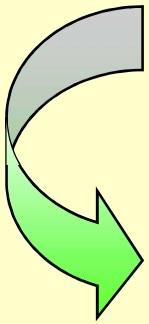


- **Spostamento dell’utero utilizzando il manipolatore uterino**
- **Facendo trazione sui lembi di sutura con il controportaghi**
- **Variando il trocar d’ingresso del portaghi**

- **Modificando la posizione dell’ago sul portaghi**

Piano dell'incisione non corrispondente al piano di sutura

➔ **Dopo l'asportazione del mioma la breccia uterina può apparire su un piano differente da quello dell'incisione**



"CAPACITA' PROSPETTICA"

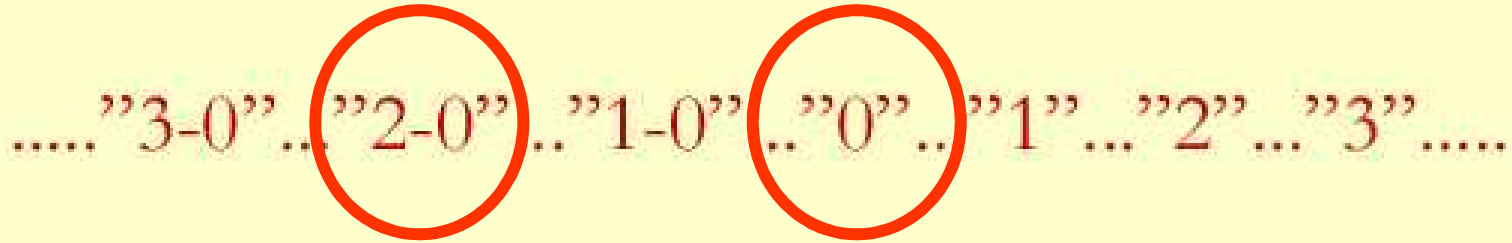
posizione della rima di sutura quando il volume del mioma verrà a mancare

Orientamento dell'ago e verso del punto

ORIENTAMENTO DELL'AGO	MANO SINISTRA	MANO DESTRA
Curvatura in basso punta a sinistra 	Punto rovescio verso destro-sinistro	Punto dritto verso destro-sinistro
Curvatura in basso punta a destra 	Punto dritto verso sinistro-destro	Punto rovescio verso sinistro-destro
Curvatura in alto punta a destra 	Punto rovescio verso destro-sinistro	Punto dritto verso destro-sinistro
Curvatura in alto punta a sinistra 	Punto dritto verso sinistro-destro	Punto rovescio verso sinistro-destro

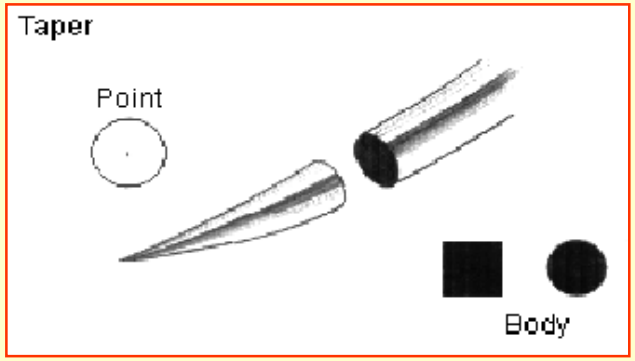
Che filo di sutura ?

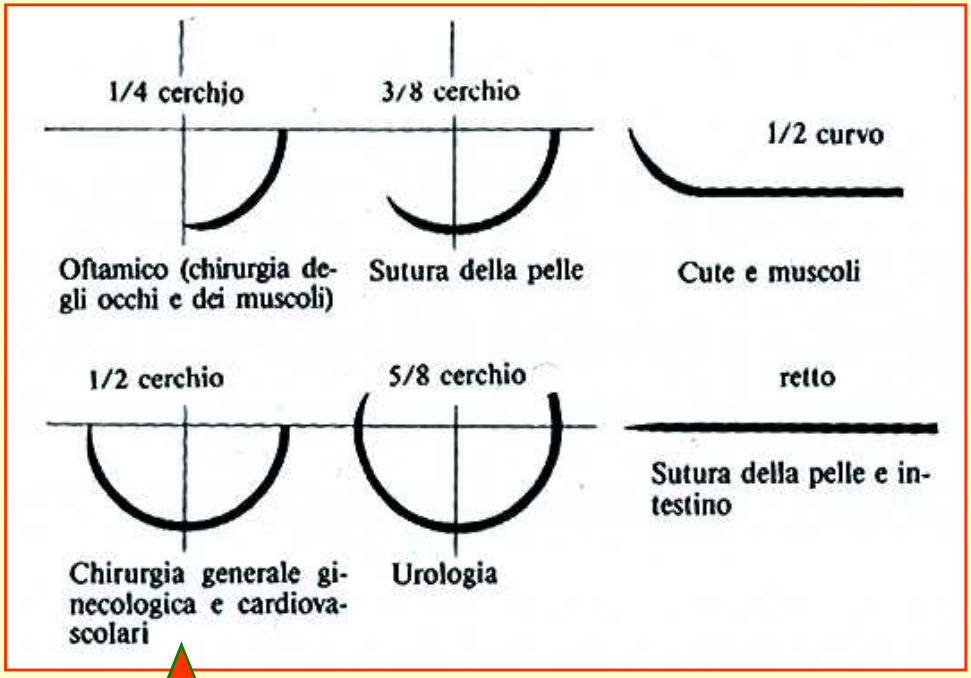
- **MONOFILAMENTI**
- **PLURIFILAMENTI INTRECCIATI RIVESTITI**



DIPENDE DALLA SCUOLA CHIRURGICA

Che ago ?



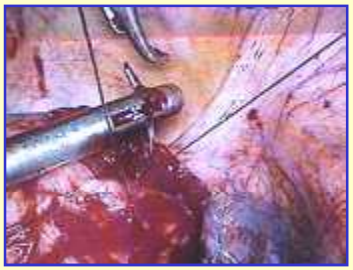
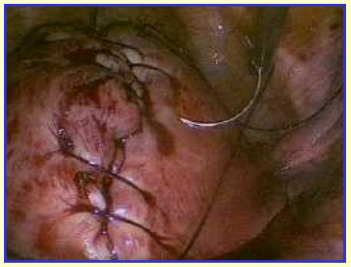


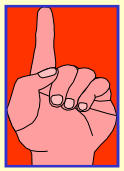
- 27 mm
- 30 mm
- 36 mm

DIPENDE DALLA SCUOLA CHIRURGICA
DIPENDE DALLE DIMENSIONI

MIOMECTOMIA

SUTURA DELLA BRECCIA UTERINA

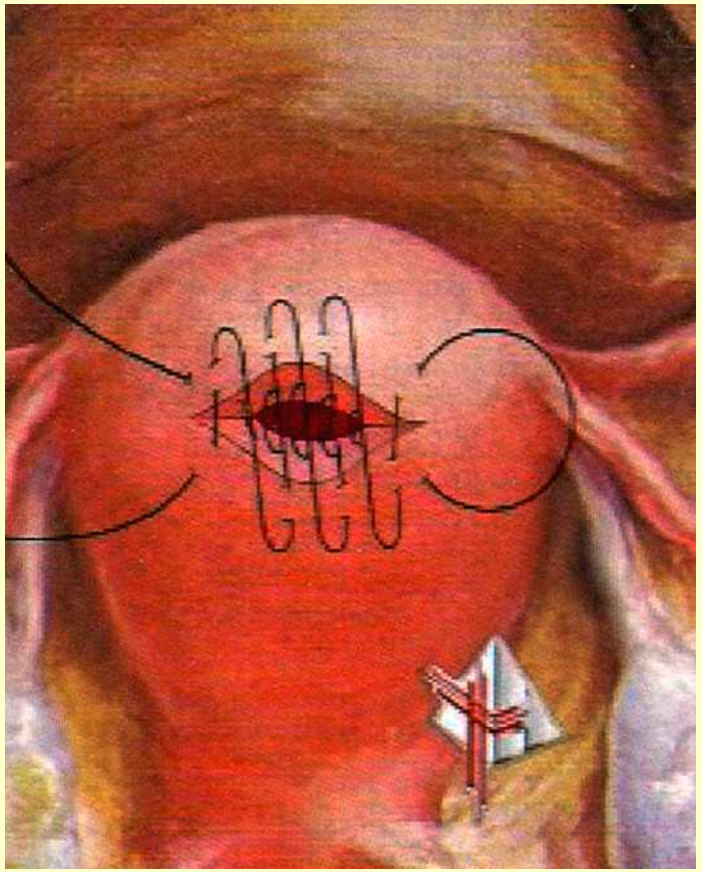
La sutura deve sempre coinvolgere completamente la fovea dell'isterotomia e determinare una completa apposizione delle pareti del miometrio.

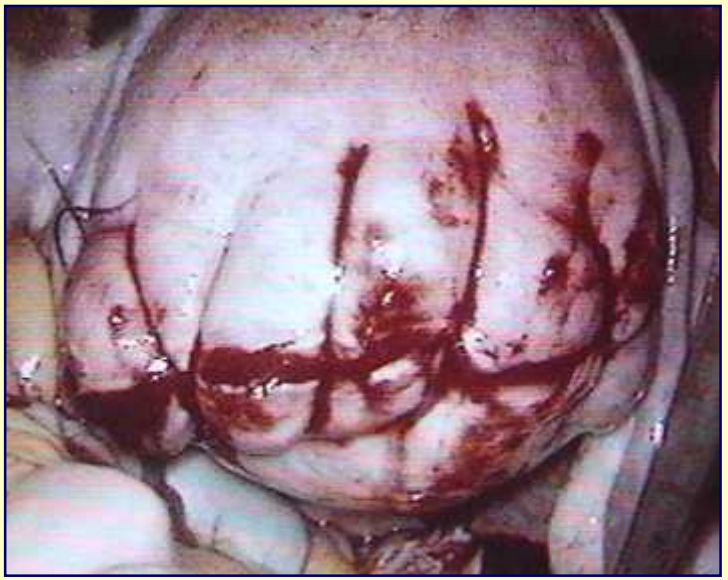
Va eseguita una sutura in uno o due strati, in relazione alla profondità dell'isterotomia

La sutura può essere eseguita:

- **in continua**
- **a punti staccati**

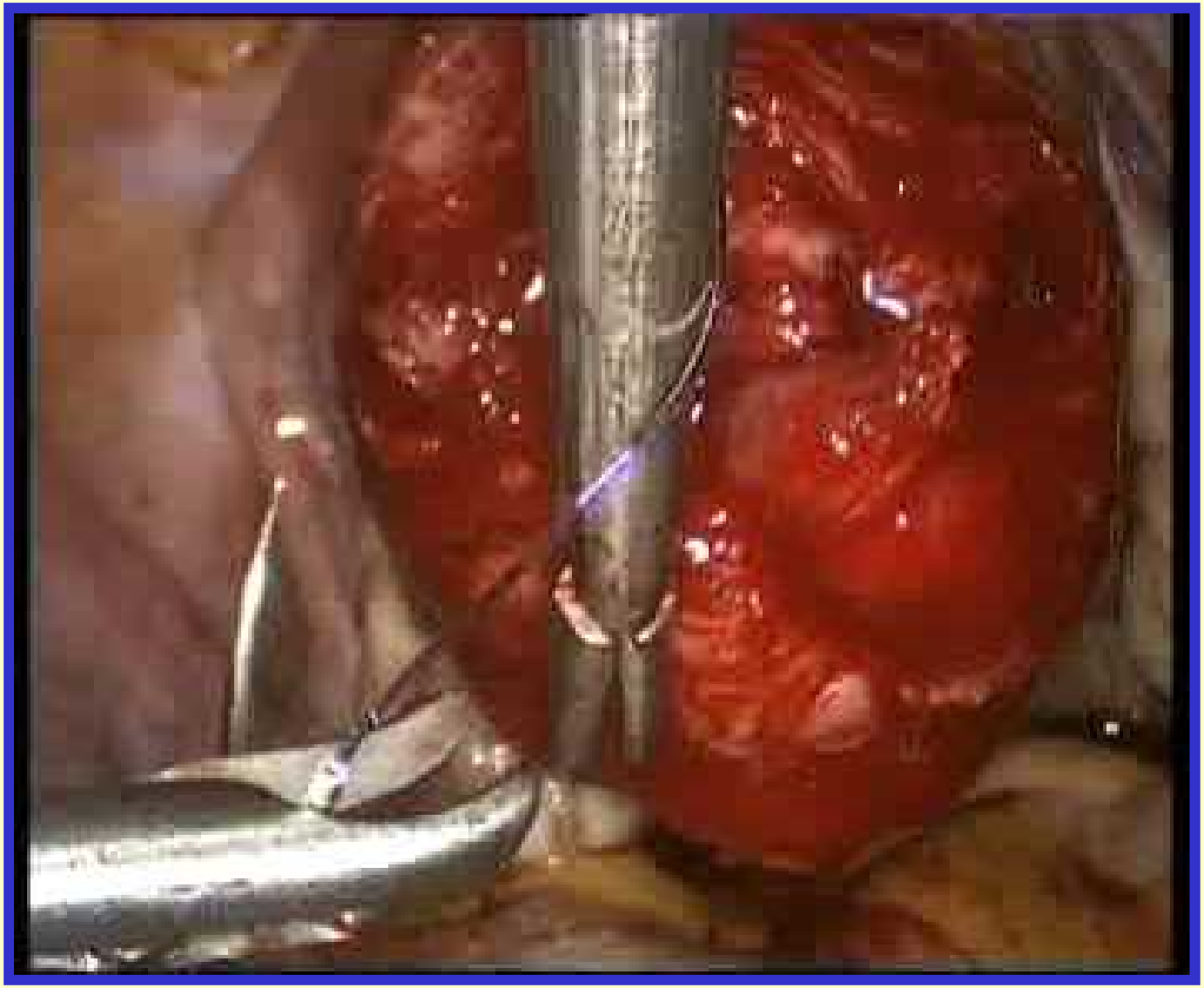
La sutura della breccia uterina
IN CONTINUA

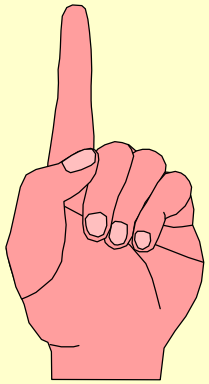




La sutura della breccia uterina

PUNTI STACCATI



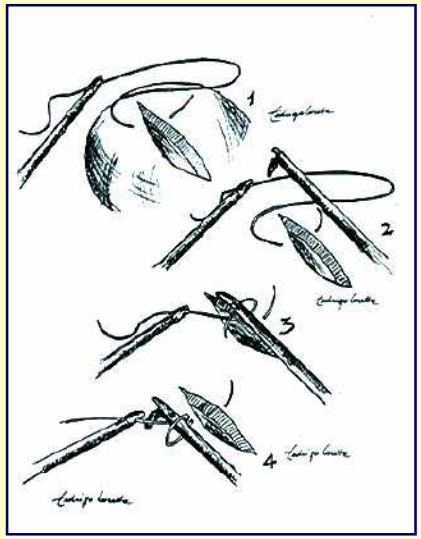


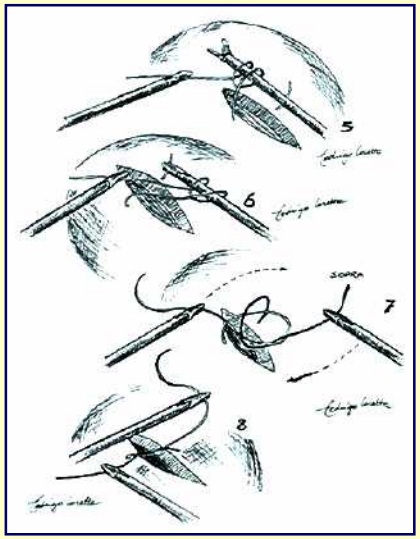
- EVITARE GLI SPAZI MORTI

- EVITARE LE AREE DI SPERITONEIZZAZIONE

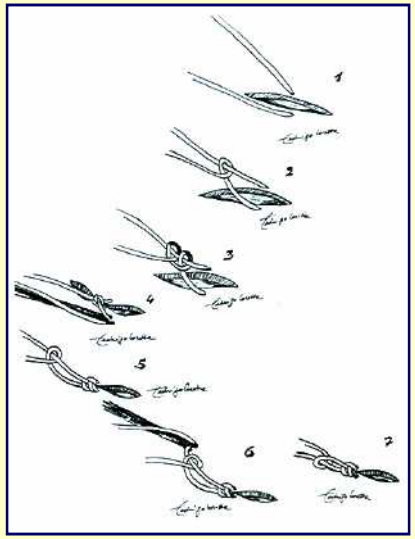
Che tecnica di annodamento ?

- **NODI INTRACORPOREI**





- **NODI EXTRACORPOREI**



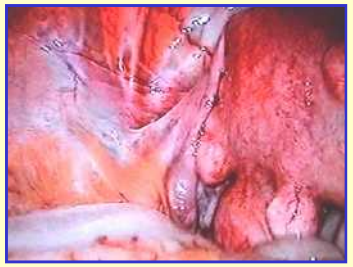
Che tecnica di annodamento ?

La scelta se eseguire nodi extracorporei o intracorporei dipende unicamente dall'orientamento e/o dalla manualità del chirurgo

… la cosa importante è saper applicare bene le tecniche d'annodamento, rapidamente, con il minor numero di movimenti, in una precisa sequenza logica ed in sincronia con l'assistente e la strumentista.

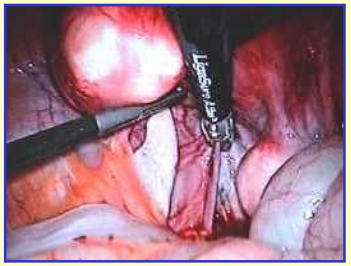
ISTERECTOMIA

VISIONE D'INSIEME UTERO E PELVI

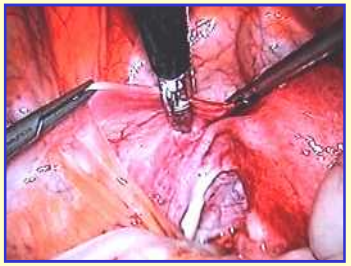


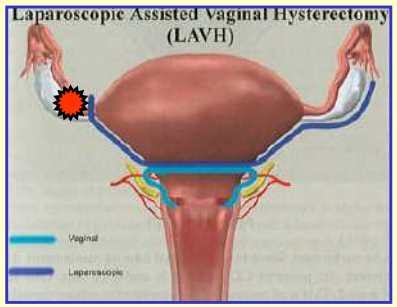
VALUTAZIONE MOBILITA' UTERO

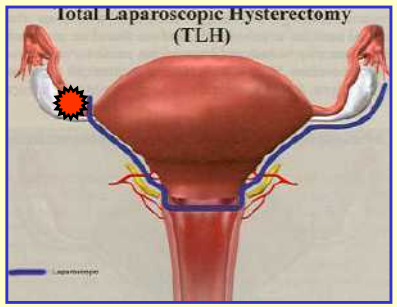
REPERE SU LIG. UTEROSACRALI



COAGULAZIONE E SEZIONE LIG. ROTONDI

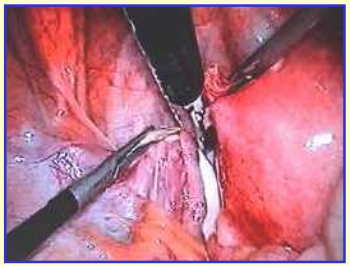


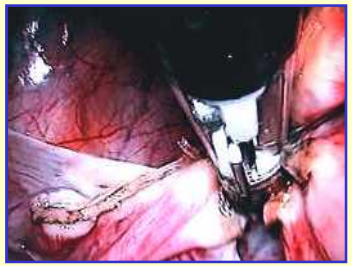


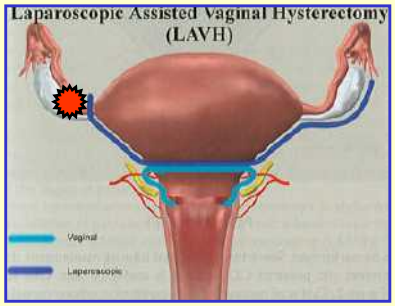


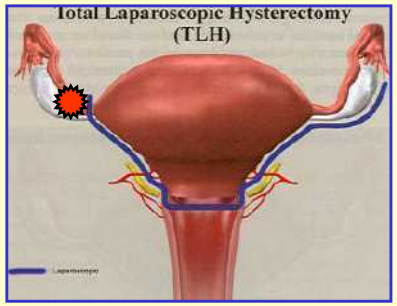
ISTERECTOMIA

COAGULAZIONE E SEZIONE LIG. UTERO OVARICO E TUBA O INFUNDIBOLO PELVICO

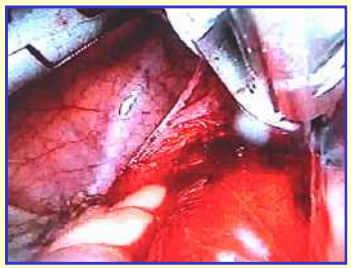


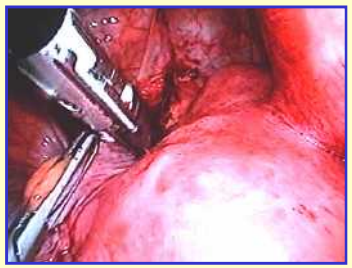


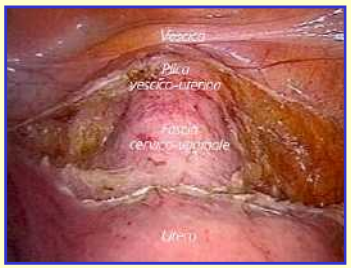




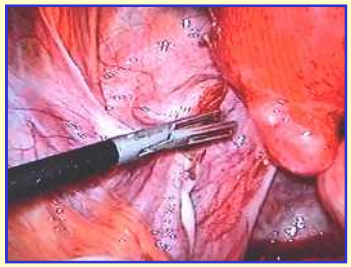
SCOLLAMENTO PERITONEO PRE-VESCICALE

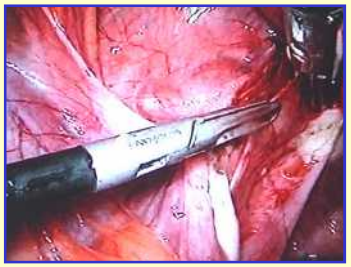






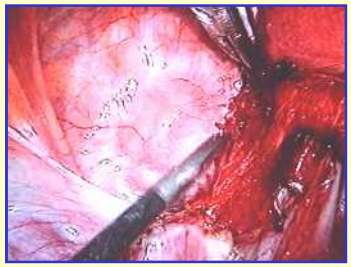
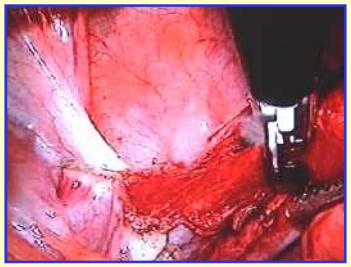
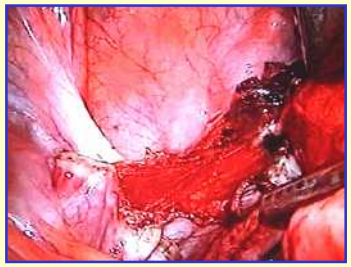
SCOLLAMENTO PERITONEO LIG LARGO

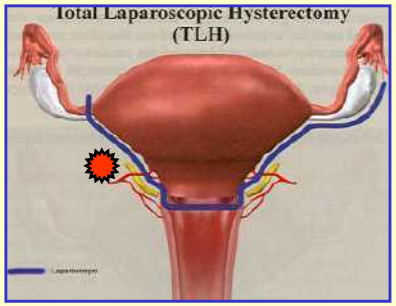


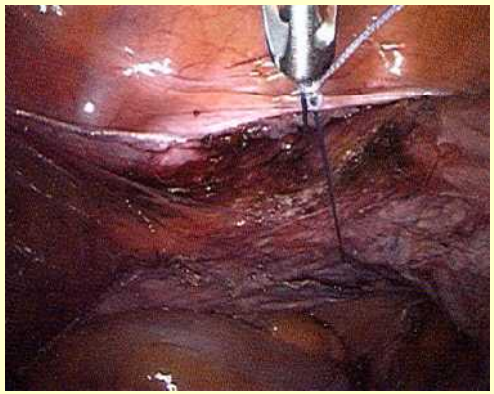


ISTERECTOMIA

COAGULAZIONE E successiva SEZIONE DEL FASCIO VASCOLO NERVOSO UTERINO





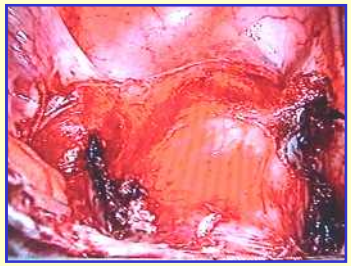
Legatura del plesso vascolare uterino con **nodo di ROEDER**

PLURIFILAMENTO “0”

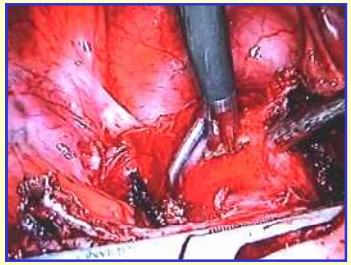
HRN 30

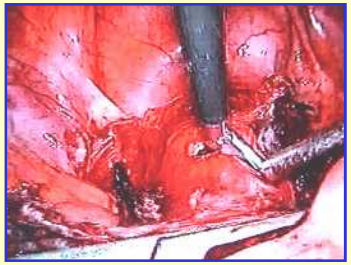
ISTERECTOMIA

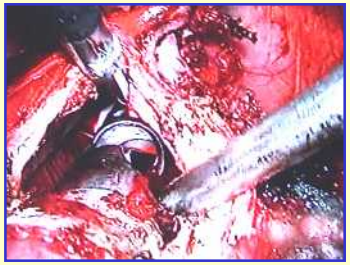
EVIDENZIAZIONE E SEZIONE DELLA CUPOLA VAGINALE

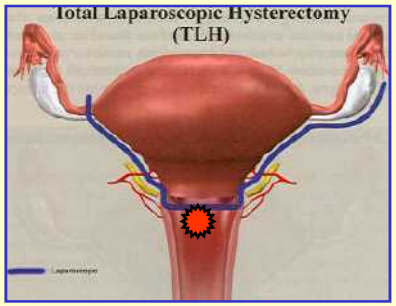


MANIPOLATORE DI MINELLI

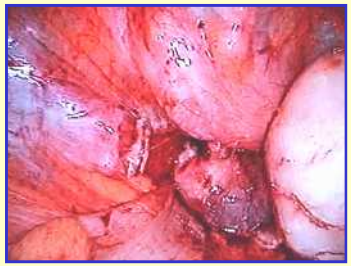


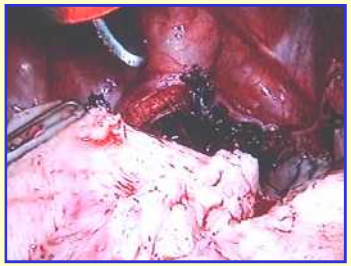


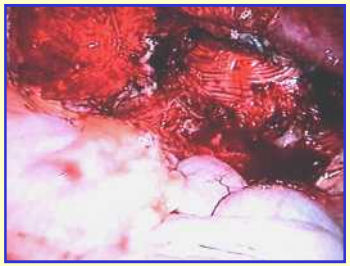




ESTRAZIONE DELL'UTERO DALLA VAGINA IN TOTO O SEZIONATO

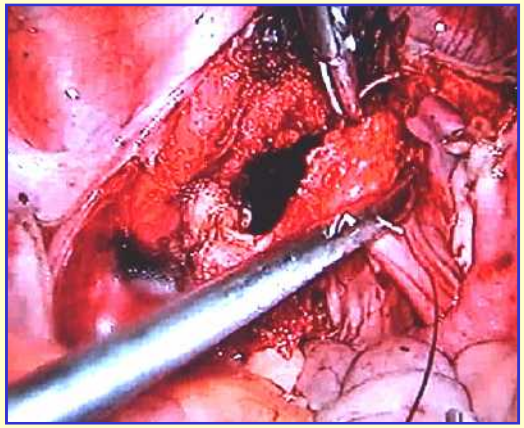
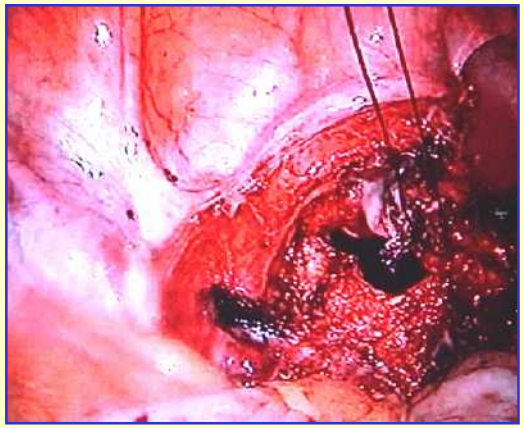
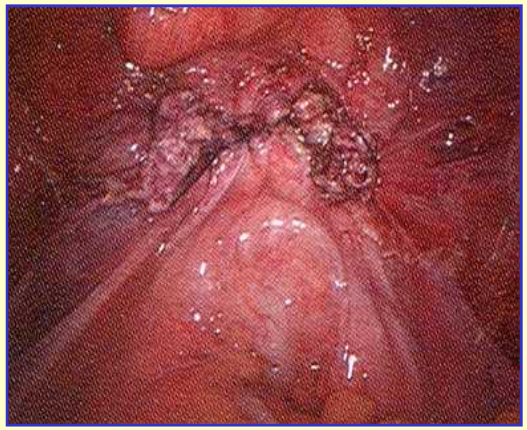






ISTERECTOMIA

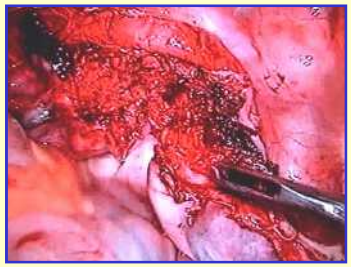
SUTURA DELLA CUPOLA VAGINALE

La sutura può essere eseguita:

- **in continua**
- **a punti staccati**

CONTROLLO ACCURATO DELL'EMOSTASI



L'acquisizione delle tecniche

ELSEVIER

2008

THE JOURNAL OF MINIMALLY INVASIVE GYNECOLOGY

The Efficacy of Viewing an Educational Video as a Method for the Acquisition of Basic Laparoscopic Suturing Skills

Mohamed N. Akl, MD*, Dobie L. Giles, MD, Jaime B. Long, MD, Javier F. Magrina, MD, and Rosanne M. Kho, MD

From the Department of Gynecologic Surgery, Mayo Clinic Arizona, Phoenix, Arizona (all authors).

ABSTRACT **Study Objective:** To estimate the efficacy of viewing an educational video in the acquisition of laparoscopic suturing skills.
Design: A prospective observational study (Canadian Task Force classification II-2).
Setting: Tertiary care academic medical institution.
Subjects: Twelve candidates interviewing for the female pelvic medicine and reconstructive surgery fellowship position at our institution.
Interventions: Candidates were evaluated in the laparoscopy laboratory before and after watching a 6-minute educational video on the basic principles of laparoscopic suturing. Each candidate evaluation included the following tasks: (1) introduction of a needle through a trocar (timed in seconds); (2) load and position a needle for suturing with a laparoscopic needle holder (evaluated by number of movements); (3) running continuous suture with 2 passes (timed in seconds); (4) intracorporeal knot tying with 2 throws (timed in seconds); and (5) extracorporeal knot tying with 2 knots (timed in seconds).
Measurements and Main Results: Wilcoxon signed rank test was used for the statistical comparison of the candidates' performance before and after viewing the video. After viewing the teaching video, the total median time to perform all timed tasks improved by 20% (115.5 seconds, $p = .009$). Significant improvement occurred in the median time of introducing the needle through a trocar, continuous suturing, and extracorporeal knot tying ($p = .02$, $p = .01$, and $p = .003$, respectively).
Conclusion: The use of an educational video appears to be an effective method for the acquisition of basic laparoscopic suturing skills. Journal of Minimally Invasive Gynecology (2008) 15, 410–413 © 2008 AAGL. All rights reserved.