



**Department of Molecular and Developmental Medicine
University of Siena**

L'appropriatezza in chirurgia ginecologica nella donna in età fertile

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CIRAOAR

**CENTRO INTERUNIVERSITARIO PER LO STUDIO DELLE BASI
MOLECOLARI DELLE MALATTIE DELLA RIPRODUZIONE**

THE PRECISION MEDICINE INITIATIVE

1

Eeguire il **corretto iter diagnostico-terapeutico**, mettendo sempre al primo posto il benessere delle pazienti

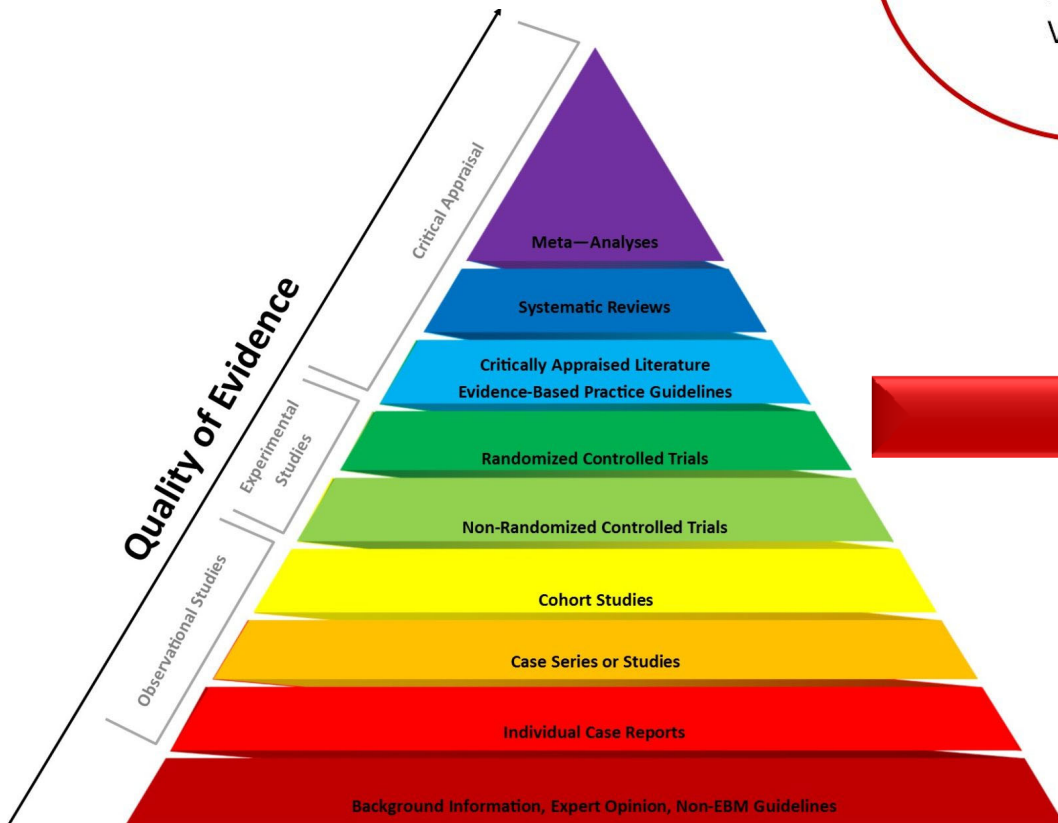
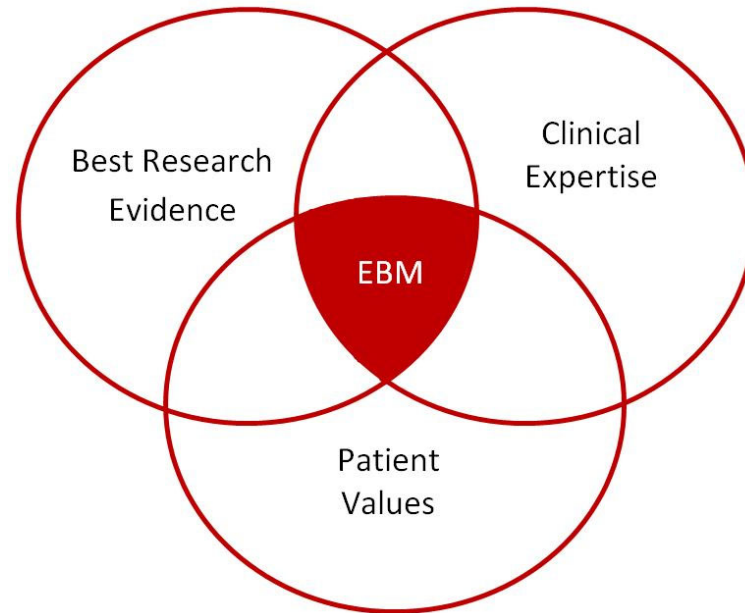
2

Evitare **terrorismo oncologico** e preservare la **fertilità** nella pz con patologia benigna e maligna ed evitare chirurgia inutile, soprattutto se inadeguata

3

Necessaria la **massima personalizzazione della cura**: offrire la soluzione clinica più appropriata per ciascuna paziente

Appropriatezza chirurgica in ginecologia



Prevalenza patologia maligna vs benigna



203 casi/anno di tumori ginecologici tra 15-39 anni

1/35.000 casi

Fibromi uterini
3 milioni

Endometriosi
3 milioni

Cisti dermoidi
800



Appropriatezza chirurgica in ginecologia



✓ La chirurgia **conservativa** ai fini della preservazione della fertilità è **razionale solo** se la donna, affetta da patologia benigna o maligna ha una **buona prognosi riproduttiva!!**

✓ La chirurgia demolitiva è **razionale solo** se la donna, affetta da patologia benigna ha una **distanza dalla menopausa uguale o superiore a 5 anni!!**

Non esisteva (fino a ieri) un marker ideale per la valutazione dell'età ovarica :



- ✓ Universalmente accettato e riproducibile
- ✓ Facilmente interpretabile
- ✓ Applicabile sulla popolazione generale

Broer et al. Hum Reprod Update 2014

Symptoms are related to hypoestrogenism such as spontaneous menopause

Early symptoms

Hot flushes, Night sweats, Tachycardia,
Palpitation, Anxiety, Depression,
Sleep disorders, Vulvar itching

Intermediate onset symptoms

Pollakiuria
Recurrent cystitis, Urinary incontinence
Dyspareunia

Surgical treatment is not recommended in teens and young women who are searching pregnancy and are asymptomatic

Personalizzazione della cura: importanza dell'età ovarica



OvAge® è un metodo brevettato di misurazione multi-modale, in cui inserendo in ingresso variabili note e specifiche per singola paziente, si ottiene in output un dato singolo, definito appunto età ovarica, espresso in anni



Per conoscere l'età ovarica, è sufficiente eseguire un prelievo di sangue per il dosaggio di FSH, Estradiolo e AMH e una ecografia 3D delle ovaie per la valutazione automatizzata dei follicoli antrali (AFC) e della vascolarizzazione ovarica (VI e FI), durante il ciclo mestruale. Ottenuti i risultati, OvAge li elaborerà grazie al suo algoritmo matematico brevettato e fornirà la risposta esatta, espressa in anni

Fornisce:

- ✓ l'età ovarica tramite un numero
- ✓ maggiore accuratezza diagnostica
- ✓ aiuta il chirurgo a scegliere la strategia terapeutica ottimale

OvAge: validazioni scientifiche

Venturella et al. *Journal of Ovarian Research* (2015) 8:21
DOI 10.1186/s13048-015-0149-z



Open Access

RESEARCH

OvAge: a new methodology to quantify ovarian reserve combining clinical, biochemical and 3D-ultrasonographic parameters

Roberta Venturella^{1*}, Daniela Lico¹, Alessia Sarica², Maria Pia Falbo³, Elio Gulletta³, Michele Morelli¹, Errico Zupi⁴, Gabriele Cevenini⁵, Mario Cannataro² and Fulvio Zullo¹



Wide excision of soft tissues adjacent to the ovary and fallopian tube does not impair the ovarian reserve in women undergoing prophylactic bilateral salpingectomy: results from a randomized, controlled trial

Roberta Venturella, M.D.,^a Michele Morelli, M.D., Ph.D.,^{a,b} Daniela Lico, M.D.,^a Annalisa Di Cello, M.D.,^a Morena Rocca, M.D.,^a Angela Sacchinelli, M.D.,^a Rita Mocchiato, M.D.,^a Pietro D'Alessandro, M.D., Ph.D.,^a Antonio Maiorana, M.D.,^c Salvatore Gizzo, M.D.,^d and Fulvio Zullo, M.D., Ph.D.^{a,b}

Fertility and Sterility.

Original Article

3 to 5 Years Later: Long-term Effects of Prophylactic Bilateral Salpingectomy on Ovarian Function



Primary and secondary outcomes measures.

Parameter	Standard salpingectomy, group A (n = 91)	Wide salpingectomy, group B (n = 95)	P value
ΔAMH (ng/mL)	-0.09 ± 0.24	-0.07 ± 0.22	.54
ΔFSH (mIU/mL)	0.47 ± 0.86	0.37 ± 0.84	.40
ΔAFC (n)	-0.33 ± 0.73	-0.26 ± 0.61	.44
ΔVI (%)	-0.10 ± 0.31	-0.11 ± 0.25	.85
ΔFI (0-100)	-0.74 ± 2.02	-0.61 ± 1.54	.60
ΔVFI (0-100)	0.08 ± 0.23	0.06 ± 0.21	.61
ΔOvAge (y)	0.03 ± 0.12	0.04 ± 0.11	.59
Operative time (min)	13.70 ± 5.70	15.01 ± 5.23	.10
ΔHb (g/dL)	1.52 ± 0.79	1.35 ± 0.83	.17
Postoperative hospital stay (d)	2.07 ± 0.70	2.14 ± 0.66	.48
Postoperative return to normal activity (d)	9.20 ± 3.30	8.73 ± 3.30	.33
Complication rate (%)	0	0	-

All data are expressed as mean ± SD.
Venturella. Wide salpingectomy: a safe technique. *Fertil Steril* 2015.

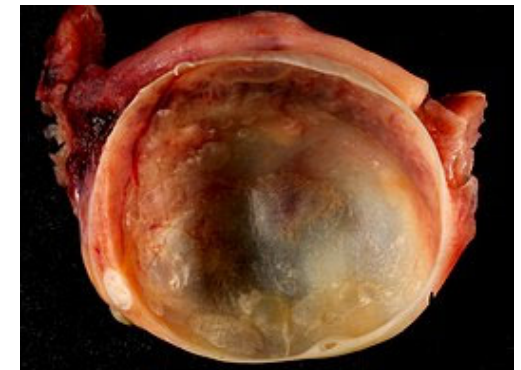
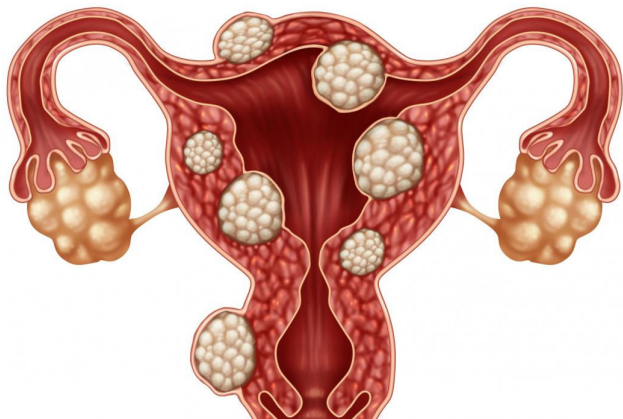
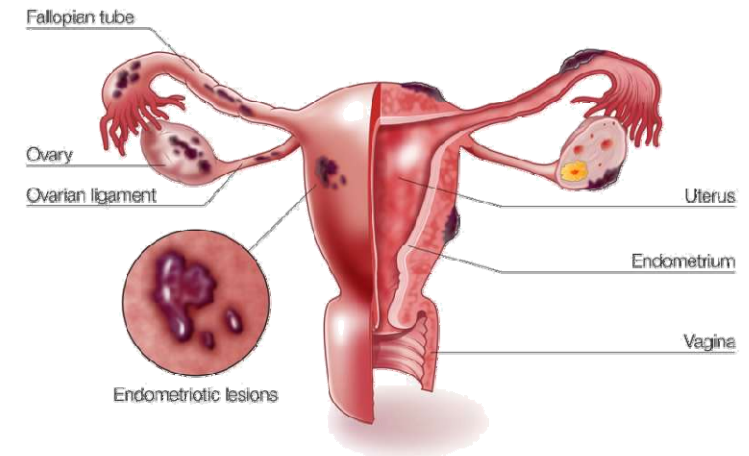
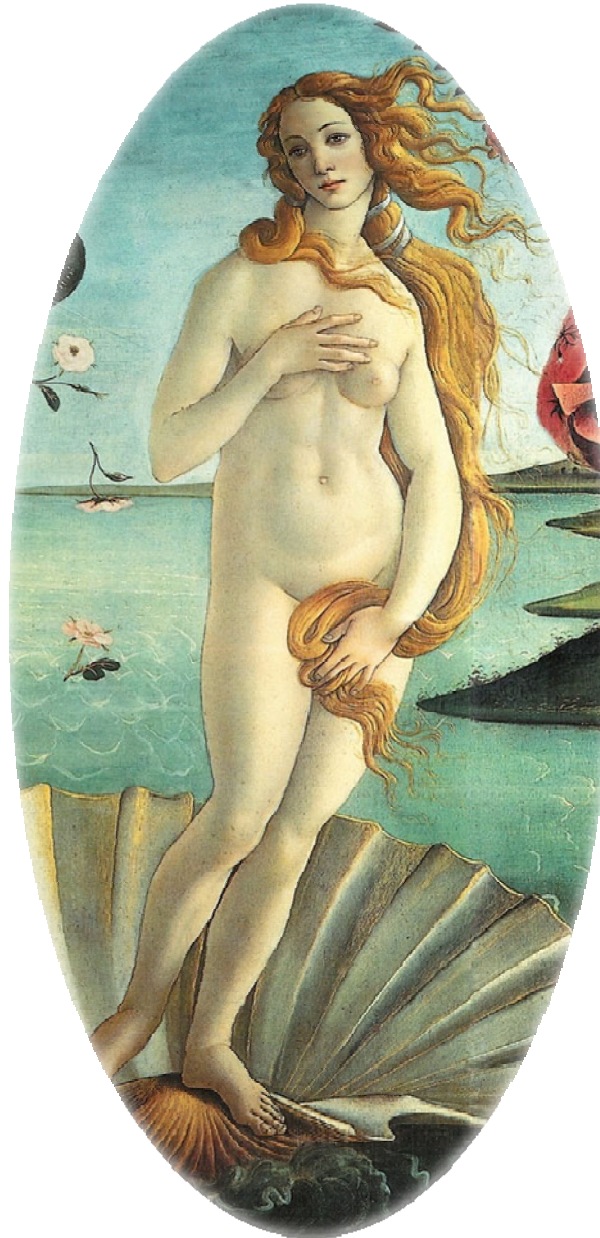
Table 1

Descriptive statistics of enrolled women

Parameters	Mean values ± SD
Age at surgery (years)	45.85 ± 2.40
Age at follow-up (years)	49.61 ± 2.15
OvAge at follow-up (years)	49.34 ± 2.12
FSH at follow-up (mIU/mL)	43.02 ± 19.92
AMH at follow-up (ng/mL)	0.12 ± 0.20
3D AFC at follow-up (n.)	1.91 ± 1.28
VI at follow-up (%)	2.80 ± 5.32
FI at follow-up (1-100)	19.37 ± 5.88
VFI at follow-up (1-100)	0.56 ± 1.12

3D = 3-dimensional; AMH = antimüllerian hormone; FI = flow index; FSH = follicle-stimulating hormone; SD = standard deviation.

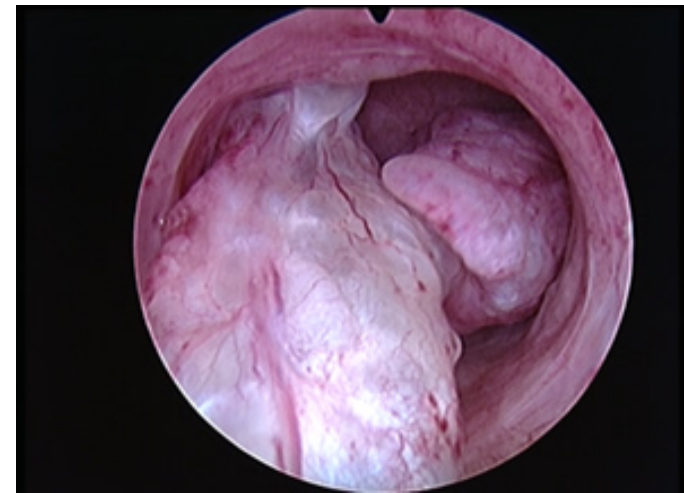
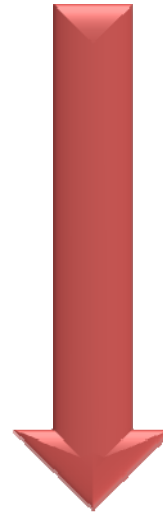
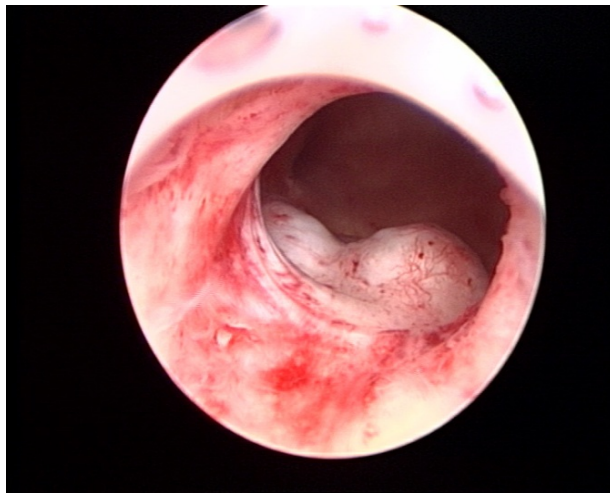
Appropriatezza chirurgica in ginecologia: polipi, fibromi, cisti ovariche e endometriomi



Appropriatezza chirurgica in ginecologia: polipi endometriali



Solo lo 0.03% di tutti i poli endometriali in donne di età < 45 anni è associato ad un aumentato rischio di trasformazione maligna



Per diagnosticare 1 K endometriale in donne in epoca premenopausale dovrebbero essere eseguite almeno 3.300 polipectomie inutili



Evitare “strage dei polipi innocenti”



Appropriatezza chirurgica in ginecologia: polipi endometriali



Tabella 1.1

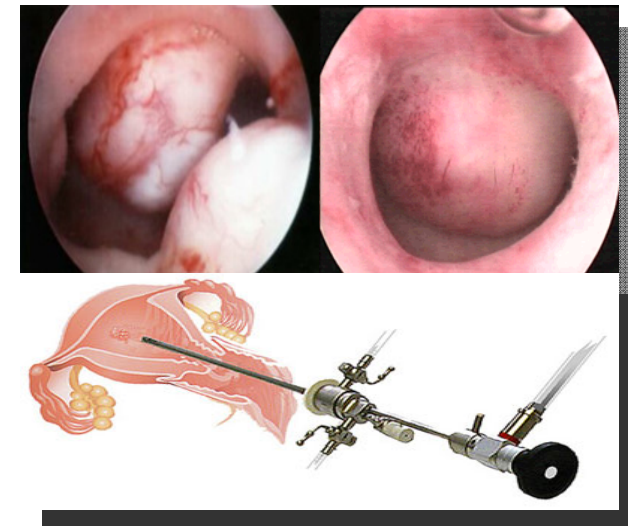
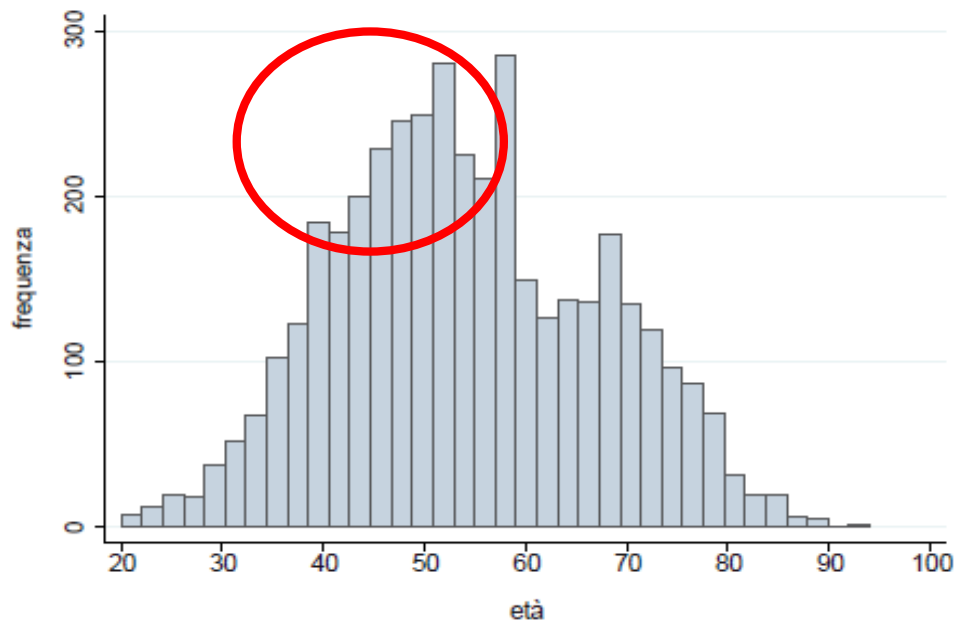
Tassi di ricovero per patologia di polipo endometriale e di intervento per 100.000 donne residenti in Toscana, anni 2009-2016 - Standardizzazione per età

Anno	Tasso di ricovero per patologia	Tasso d'intervento
2009	203,7	175,7
2010	227,3	193,0
2011	243,3	209,1
2012	265,7	228,3
2013	249,4	215,4
2014	241,5	223,7
2015	243,2	230,9
2016	235,1	215,1



TASSI DI RICOVERO E INTERVENTO PER LE DONNE RESIDENTI IN TOSCANA

Figura 1.1
Distribuzione della popolazione femminile residente in Toscana con ricovero ospedaliero per polipo endometriale, anno 2016



Appropriatezza chirurgica in ginecologia: polipi endometriali



Tabella 1.2
Distribuzione degli interventi effettuati in donne con diagnosi di polipo endometriale in ospedali toscani anni 2009-2016. Suddivisione per modalità di rimozione

Anno	Rimozione operativa sottovisione	Rimozione alla cieca	Rimozione orientata	Totale
	N (%)	N (%)	N (%)	N (%)
2009	2.603 (88,8)	134 (4,5)	192 (6,5)	2.929 (100)
2010	2.962 (90,8)	116 (3,5)	181 (5,5)	3.259 (100)
2011	3.267 (92,4)	92 (2,6)	176 (4,9)	3.535 (100)
2012	3.582 (94,3)	63 (1,6)	152 (4,0)	3.797 (100)
2013	3.469 (96,2)	28 (0,7)	107 (2,9)	3.604 (100)
2014	3.696 (95,7)	30 (0,7)	134 (3,4)	3.860 (100)
2015	3.806 (95,8)	23 (0,5)	142 (3,5)	3.971 (100)
2016	3.582 (97,2)	26 (0,7)	76 (2,0)	3.684 (100)
Totale	26.967 (94,16)	512 (1,79)	1.160 (4,05)	28.639 (100)

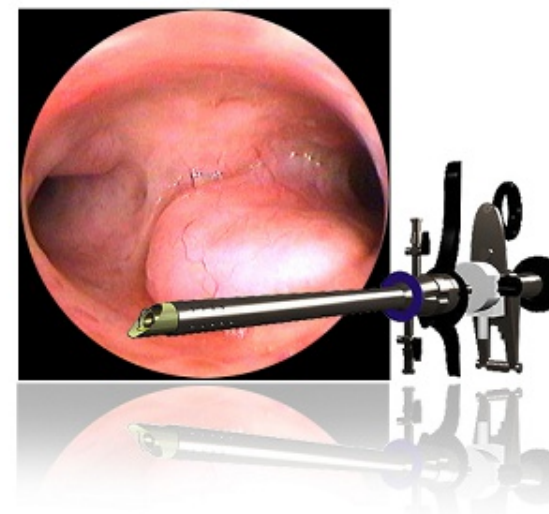
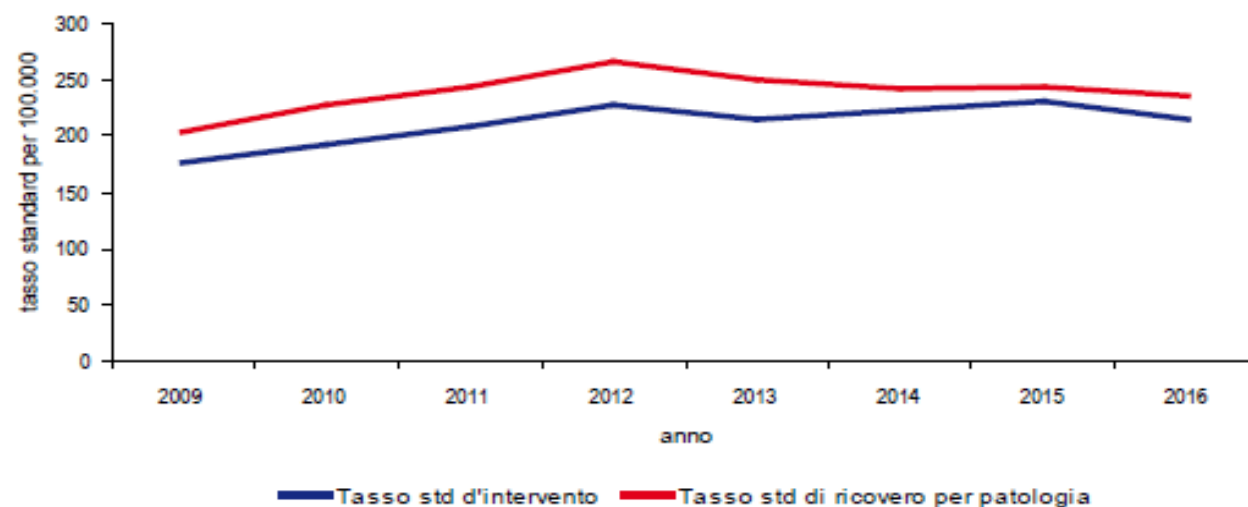


Figura 1.2
Andamento temporale del tasso di ricovero per patologia di polipo endometriale e di intervento per 100.000 donne residenti in Toscana, anni 2009-2016 - Standardizzazione per età

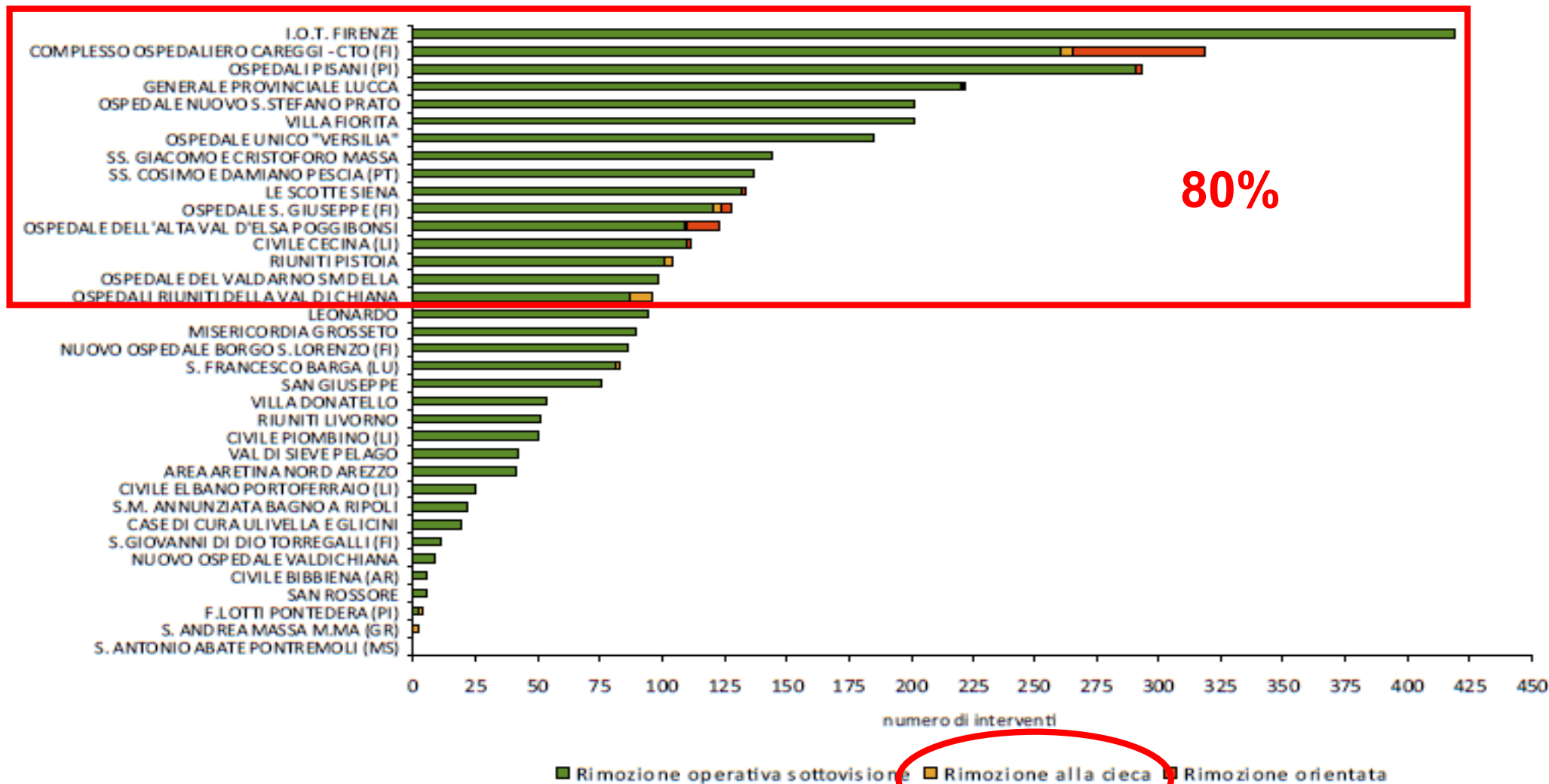


Appropriatezza chirurgica in ginecologia: polipi endometriali

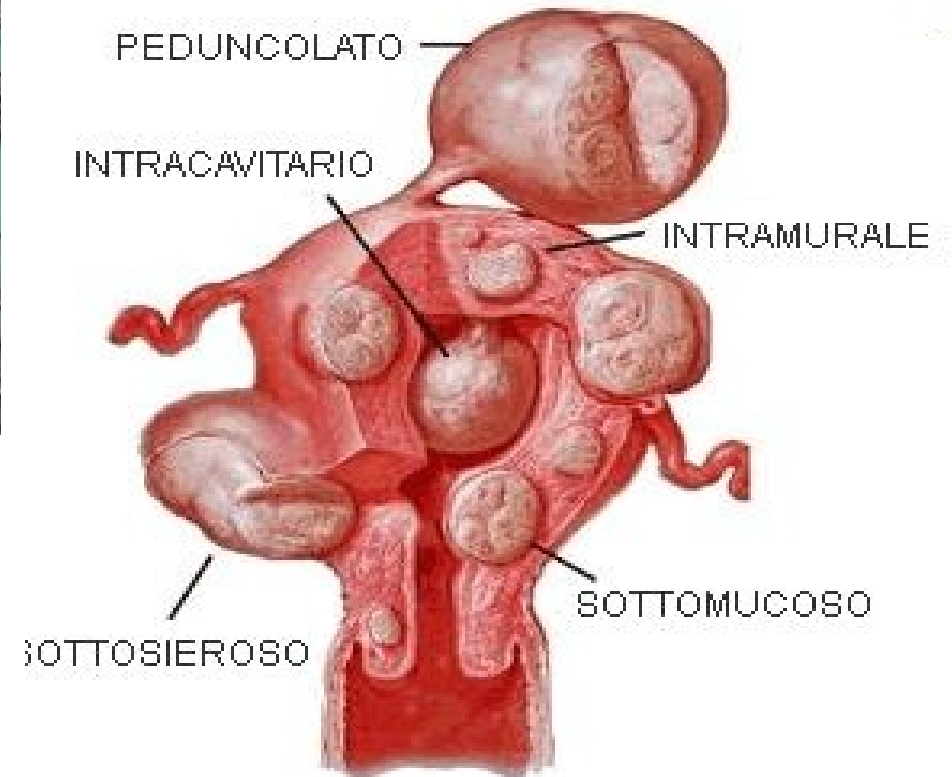


Figura 1.6

Distribuzione degli interventi effettuati in donne con diagnosi di polipo endometriale in ospedali toscani anno 2016 - Suddivisione per singolo presidio ospedaliero e modalità di rimozione



Appropriatezza chirurgica in ginecologia: Fibromi uterini



Treatment

1981



2013

Watchful waiting or surgery

Medical therapy

Von Voorthis, 2009



Small fibroids...

...may not require treatment



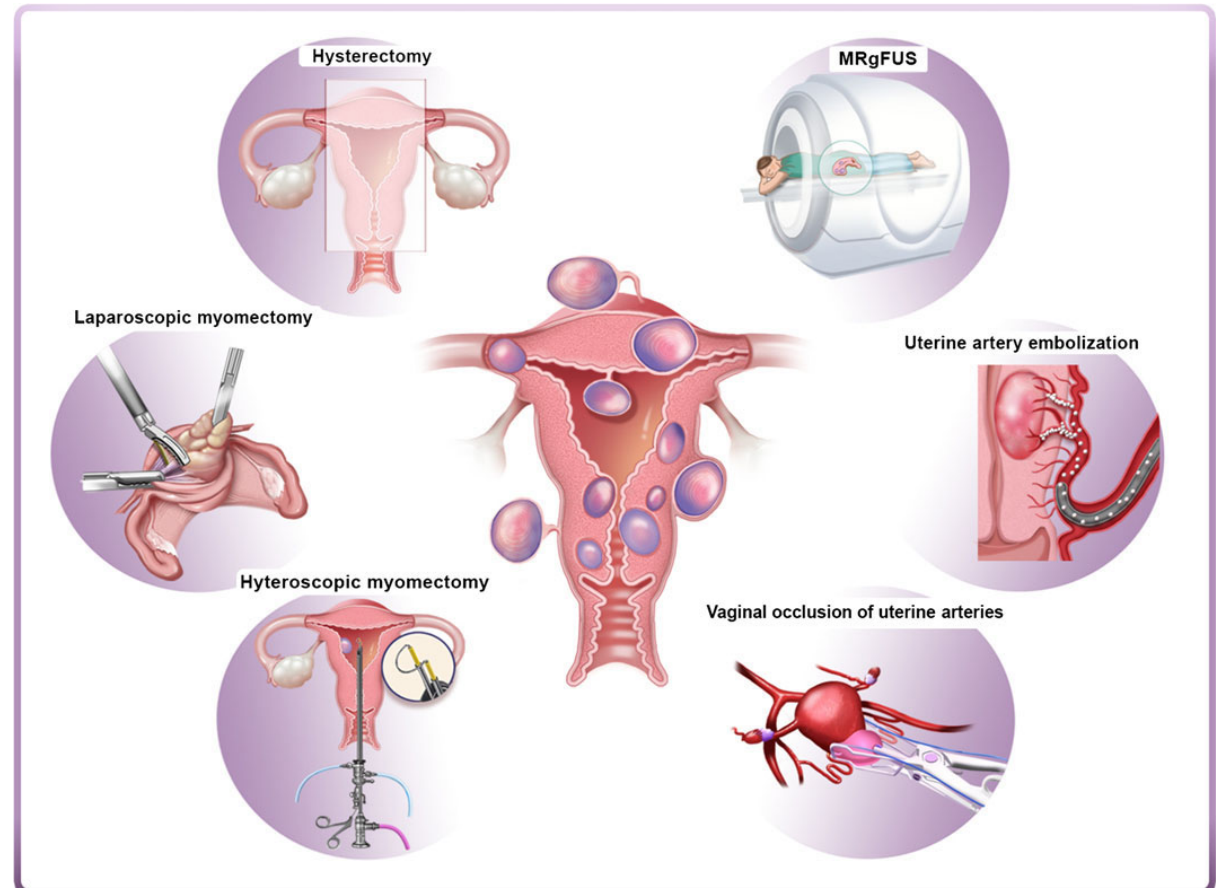
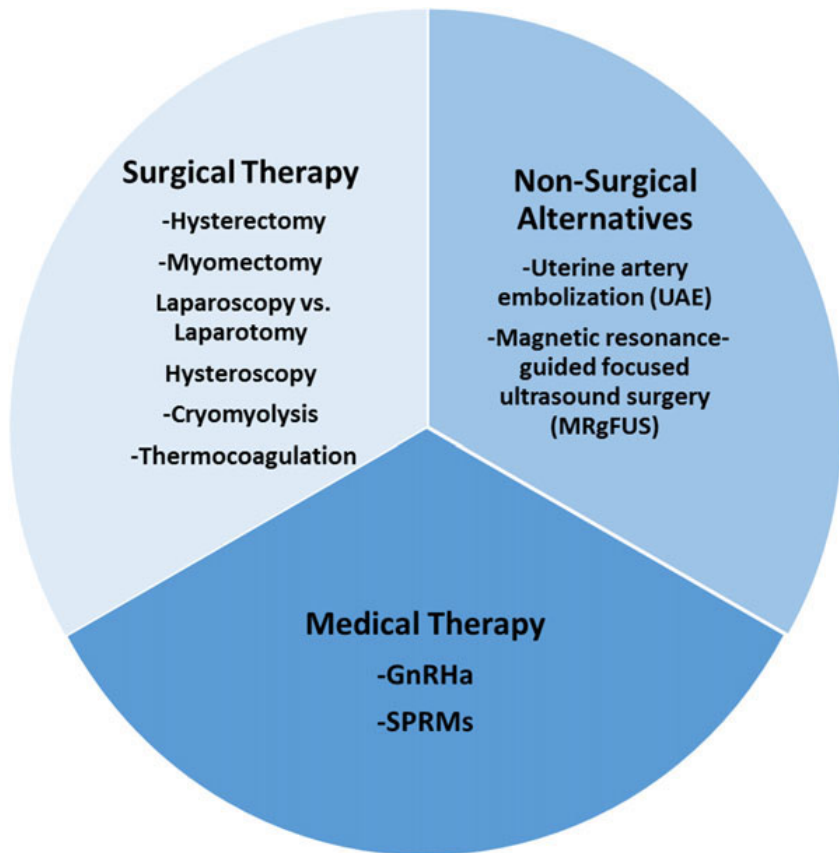
Large or symptomatic ones...

...are conventionally managed by hysterectomy or myomectomy

Therapy for the management of fibroids: the current armamentarium



Hysterectomy, laparoscopic myomectomy and hysteroscopic myomectomy are the most widely used surgical interventions for myomas

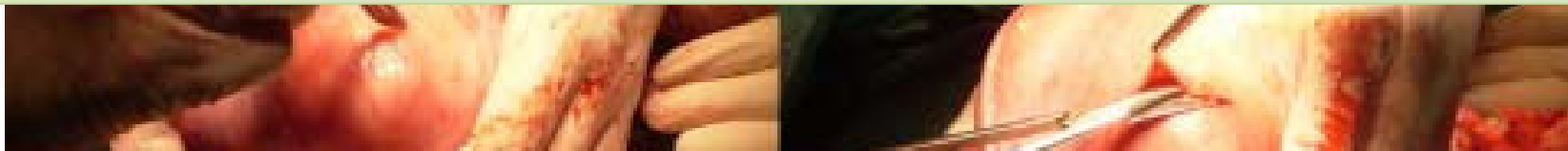


Alternatives to surgical intervention include uterine artery embolization (UAE), high-frequency magnetic resonance-guided focused ultrasound surgery (MRgFUS) and vaginal occlusion of uterine arteries

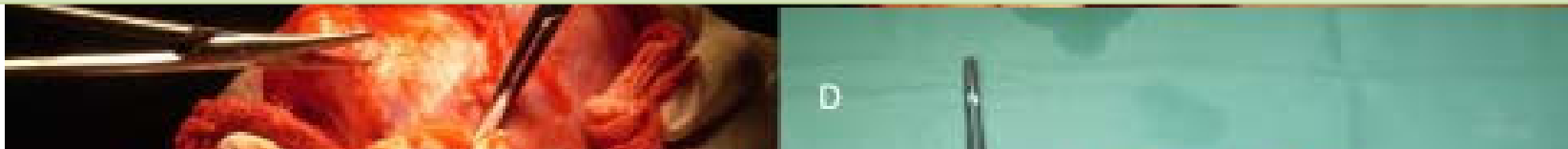
Therapy for the management of fibroids: the current armamentarium



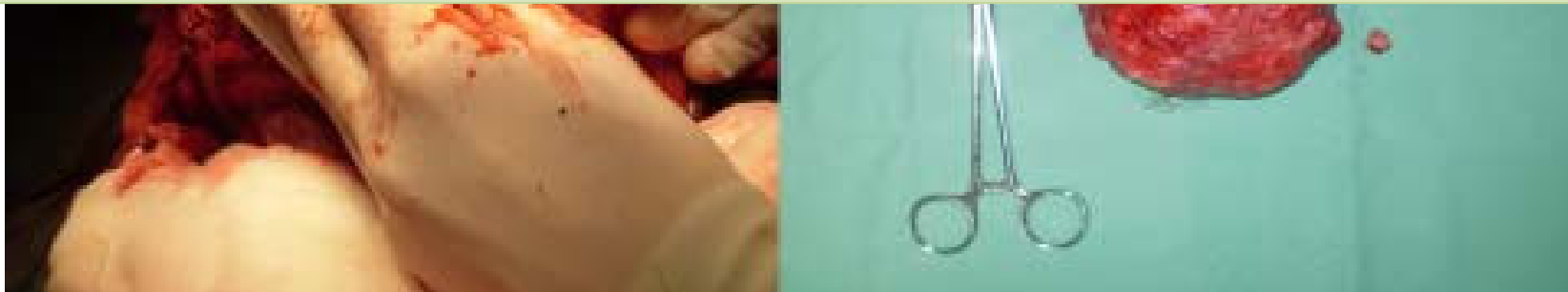
The majority of fibroids are asymptomatic, and expectant management is recommended. In young patients, fibroids cause infertility and in middleaged women, abnormal uterine bleedings



Laparoscopic myomectomy is the preferred way of surgery for IM and SS fibroids, versus hysteroscopy for SM fibroids. In both cases, the size, number of fibroids and the surgeon's experience determine the limitations of the MIGS



Medical treatments provide only temporary tumor reduction and symptom alleviation

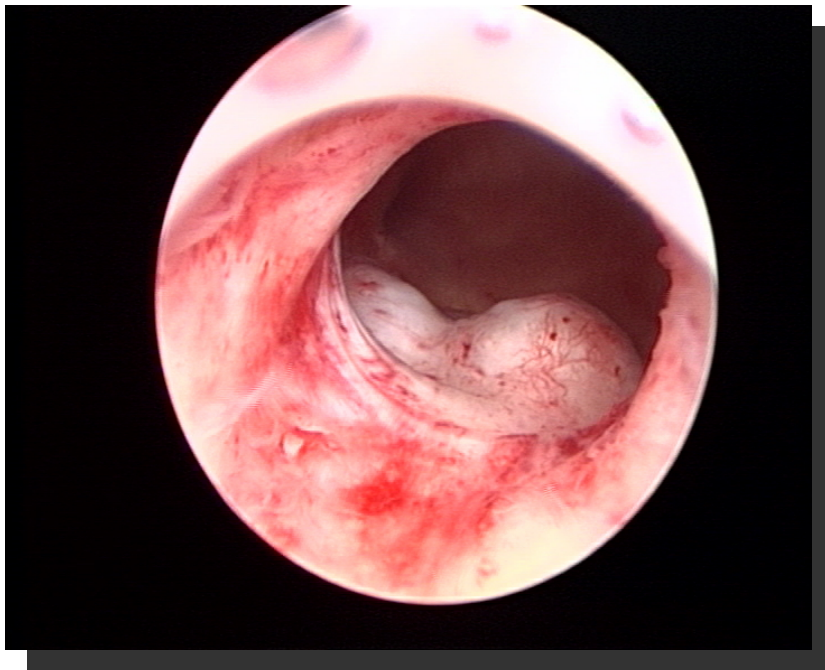
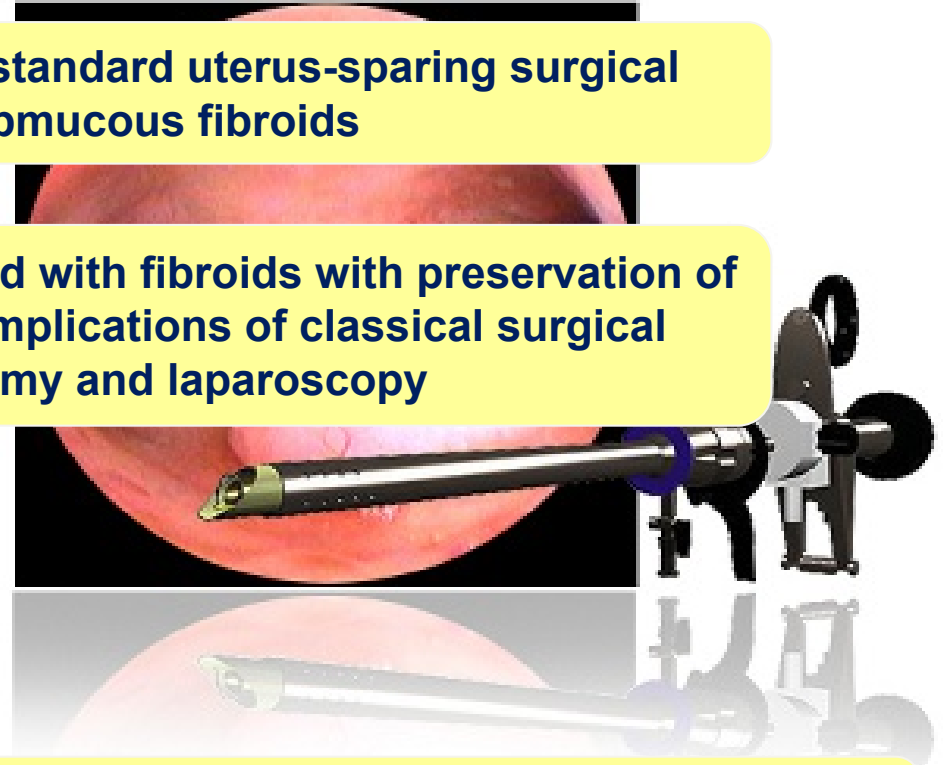


Treatment for submucous fibroids



Hysteroscopic myomectomy is now the standard uterus-sparing surgical procedure for treating submucous fibroids

Not only improves the symptoms associated with fibroids with preservation of fertility but also avoids unnecessary complications of classical surgical procedures such as laparotomy and laparoscopy



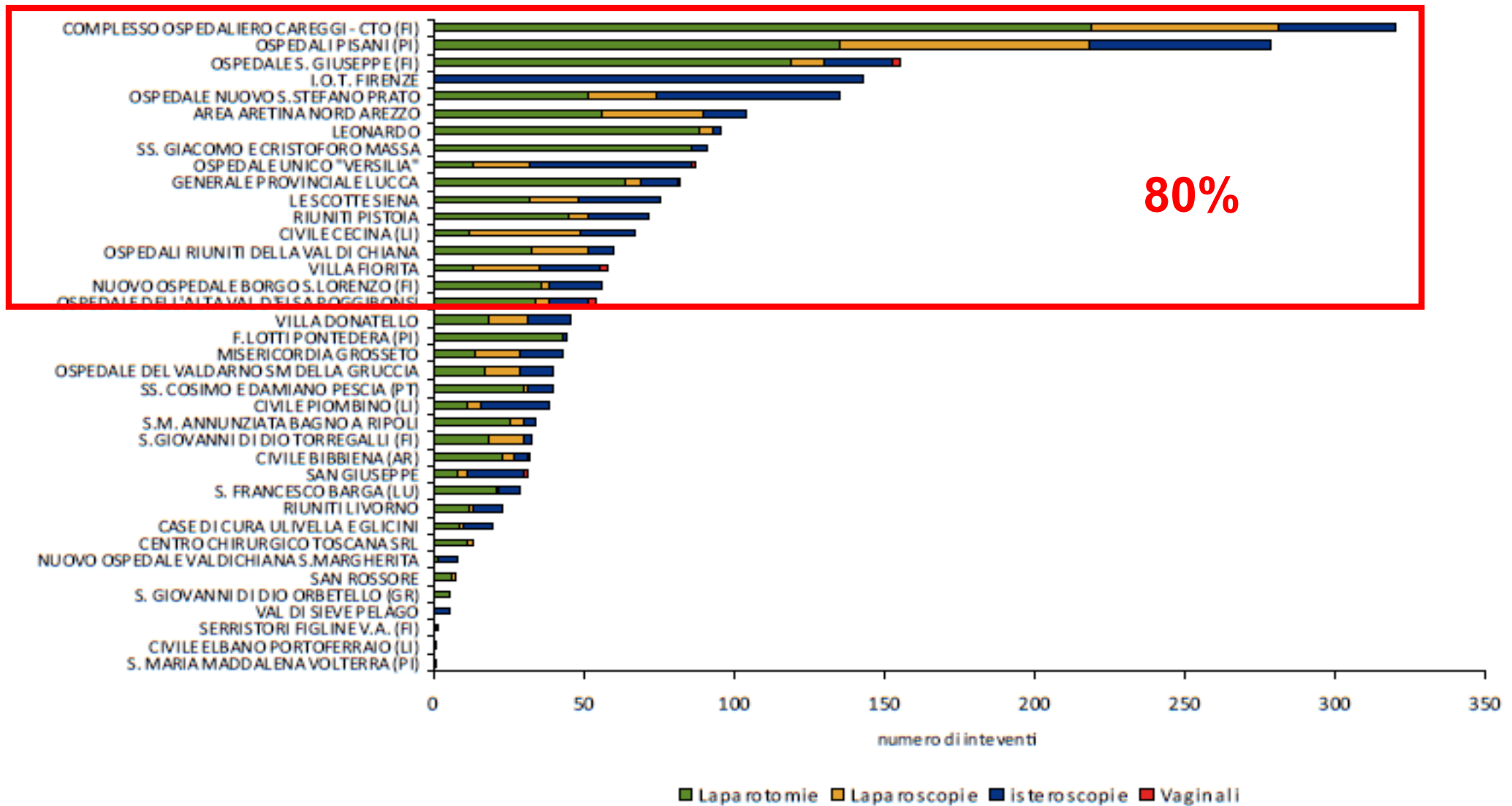
Obstetric outcome is not altered after resectoscopic removal of submucous fibroids

Uterine rupture in pregnancy never has been reported after uncomplicated hysteroscopic myomectomy

Appropriatezza chirurgica in ginecologia: interventi di miomectomia



Distribuzione degli interventi effettuati in donne con diagnosi di leiomioma dell'utero in ospedali toscani anno 2016 - Suddivisione per singolo presidio ospedaliero e via d'accesso



Interventi di miomectomia suddivisi per via d'accesso e tipo di intervento

Tabella 2.3
Distribuzione degli interventi effettuati in donne con diagnosi di leiomioma dell'utero in ospedali toscani anni 2009-2016 - Suddivisione per via d'accesso laparoscopica e laparotomica e tipo di intervento

Anno	Laparotomie		Laparoscopie	
	Conservativi N (% per via)	Estesi N (% per via)	Conservativi N (% per via)	Estesi N (% per via)
2009	910 (59,6)	615 (40,4)	297 (61,4)	186 (38,6)
2010	1.005 (57,5)	741 (42,5)	386 (68,9)	174 (31,1)
2011	994 (58,9)	693 (41,1)	338 (68,6)	155 (31,4)
2012	846 (59,2)	583 (40,8)	386 (65,8)	201 (34,2)
2013	796 (58,4)	565 (41,6)	380 (64,4)	211 (35,6)
2014	823 (58,8)	575 (41,2)	296 (58,5)	210 (41,5)
2015	748 (56,8)	568 (43,2)	237 (55,5)	190 (44,5)
2016	750 (57,1)	563 (42,9)	250 (58,8)	175 (41,2)
Totale	6.872 (58,4)	4.903 (41,6)	2.570 (63,1)	1.502 (36,9)



Figura 2.7
Interventi conservativi ed estesi per sede del leiomioma dell'utero in ospedali toscani, anni 2009-2016

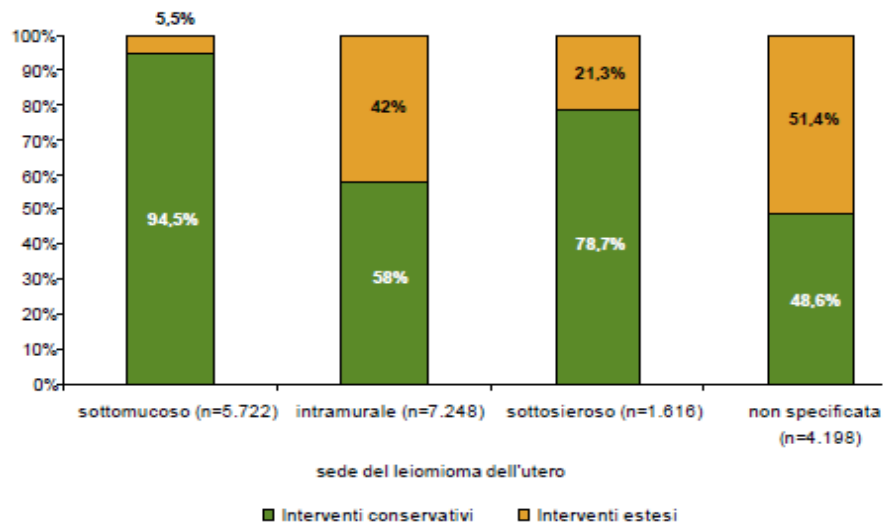
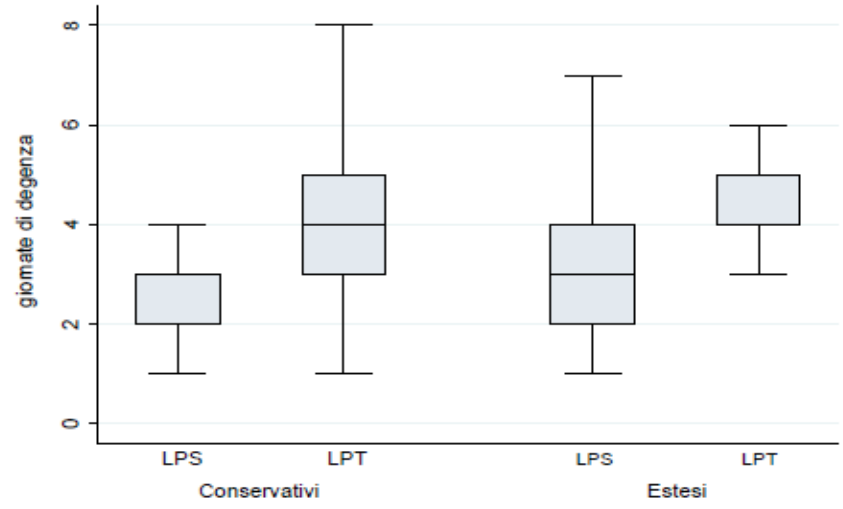


Figura 2.6
Boxplot delle giornate di degenza in ospedali toscani per via di accesso e tipo di intervento in donne con diagnosi di leiomioma dell'utero, anni 2009-2016



Trattamento farmacologico dei leiomiomi

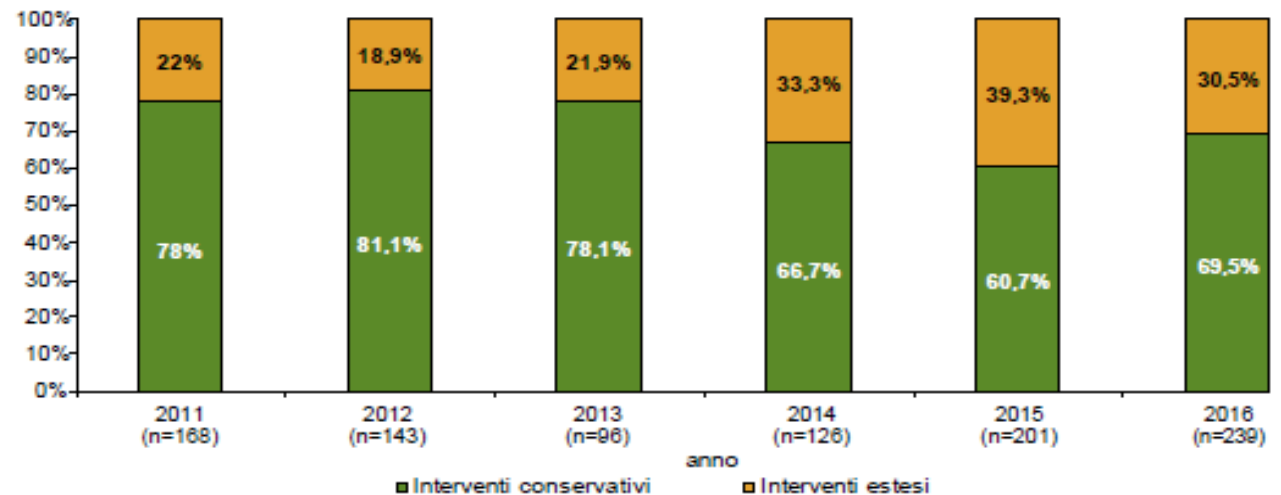


Tabella 2.4
Donne con diagnosi di leiomioma dell'utero sottoposte a trattamento farmacologico nei 12 mesi precedenti l'intervento e sottoposte a solo trattamento chirurgico - Toscana, anni 2011-2016

Anno	Farmaco e intervento N (%)	Solo intervento N (%)
2011	168 (6,1)	2.621 (93,9)
2012	143 (5,3)	2.550 (94,7)
2013	96 (3,8)	2.470 (96,2)
2014	126 (5,0)	2.427 (95,0)
2015	201(8,4)	2.204 (91,6)
2016	239 (10,0)	2.146 (90,0)
Totale	973 (6,3)	14.418 (93,7)



Figura 2.8
Donne con diagnosi di leiomioma dell'utero sottoposte a trattamento farmacologico nei 12 mesi precedenti l'intervento. Toscana, anni 2011-2016 - Suddivisione per tipo di intervento



- GnRH analogues
- GnRH antagonist
- Progestin
- Danazol
- SPRMS
- SERMS
- Aromatase inhibitors



Morcellazione classica?

Morcellazione mediante endobag?

Laparotomia?

CRITERI DI RISCHIO (fattori anamnestici e fattori biochimici)

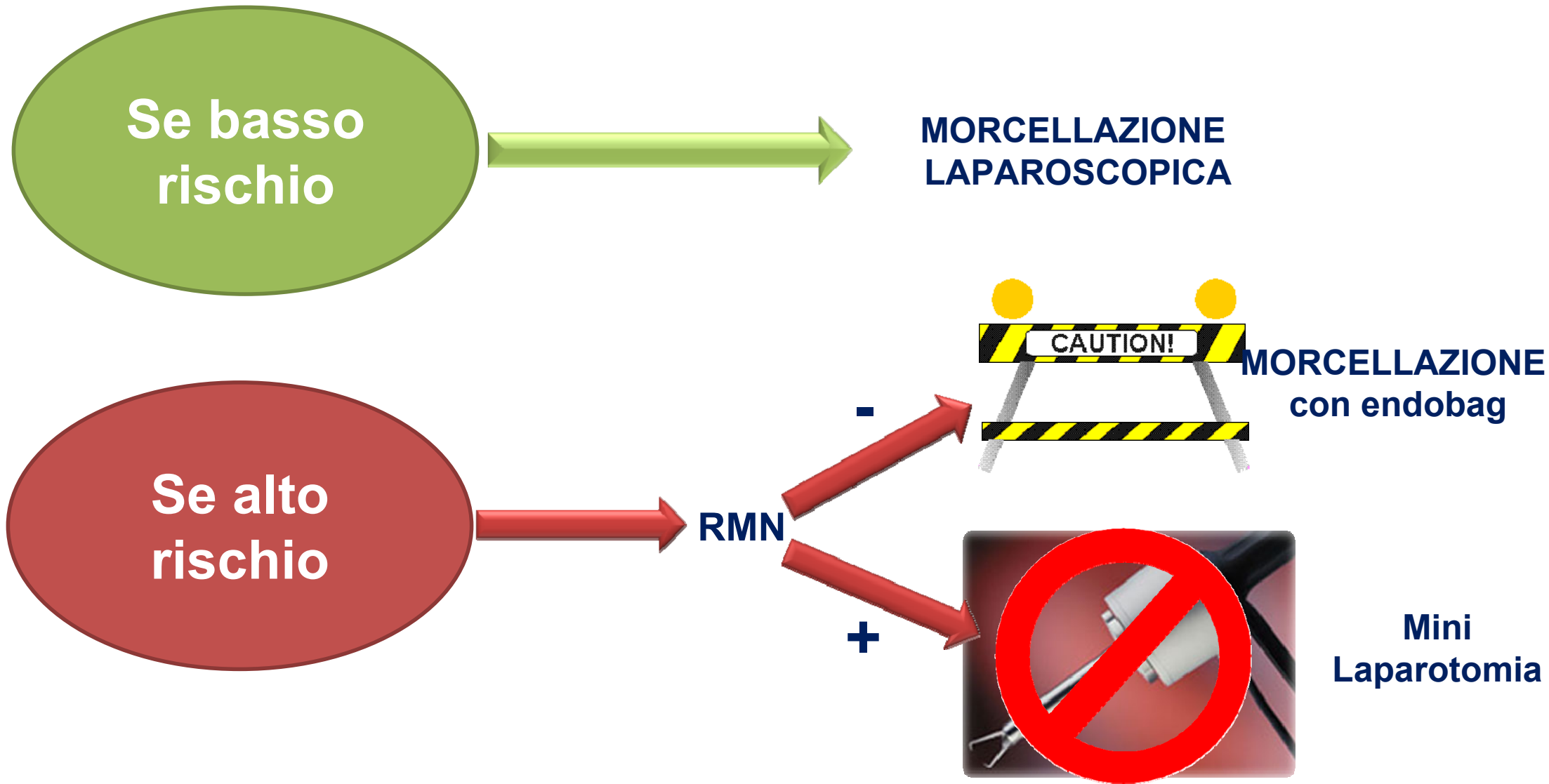
- Età > 35 anni
- Rapida crescita uterina (>30% in 3 mesi)
- Uso di tamoxifene o radiazioni pelviche
- Condizioni ereditarie come Syndrome di Lynch/leiomiomatosi ereditaria/carcinoma a cellule renali
- Aumento LHD e isoenzima 3
- Pap test alterato
- ISC+bx alterata (in caso di AUB)



CRITERI DI RISCHIO (ecografici)

- Pattern ecografico disomogeneo con aree ad ecogenicità mista e parti ipoecogene
- Presenza di aree necrotiche, cistiche, emorragiche
- Lesione singola
- Presenza di vascolarizzazione centrale (color score 3 o 4)
- Diametro della lesione > 8cm
- Assenza di calcificazioni

Appropriatezza chirurgica in ginecologia: sarcomi uterini



Appropriatezza chirurgica in ginecologia: cisti ovariche

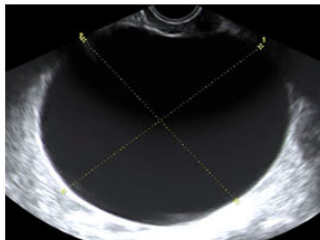


**Valutazione
ETV**

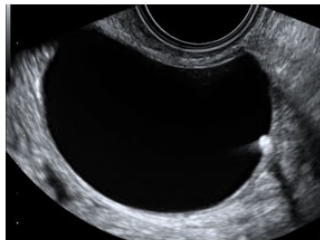


**International Ovarian
Tumour Analysis**

B1 Unilocular



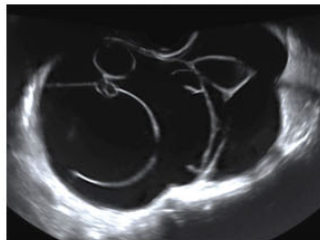
B2 Presence of solid components with largest diameter < 7 mm



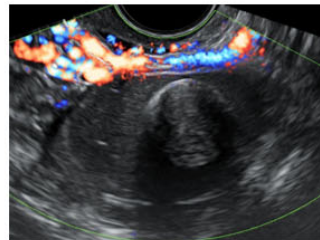
B3 Presence of acoustic shadows



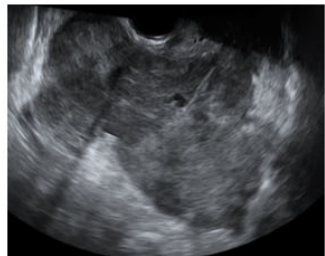
B4 Smooth multilocular tumor with largest diameter < 100 mm



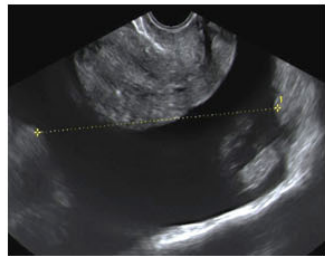
B5 No blood flow (color score 1)



M1 Irregular solid tumor



M2 Presence of ascites



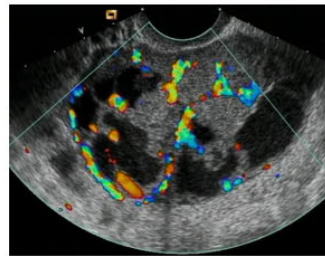
M3 At least 4 papillary structures



M4 Irregular multilocular-solid tumor with largest diameter ≥ 100 mm



M5 Very strong blood flow (color score 4)



In assenza di segni di sospetto, la vigile attesa per due e tre cicli è sempre appropriata per escludere la presenza di una cisti ovarica funzionale



Il tasso di incidenza di K ovarico diagnosticato nel corso di una laparoscopia per il trattamento di neoformazione annessiale è dello 0,4%

Per diagnosticare **1** k ovarico in donne con cisti ovariche, dovrebbero essere eseguite **250** laparotomie inutili

Nezhat F et al, AJOG 1992



Treatment of ovarian cysts with oral contraceptives or with expectant management.
Within 9 weeks all the cysts were resolved in both the treated patients and the controls

Steinkampf et al, 1990

Appropriatezza chirurgica in ginecologia: cisti ovariche



Menopause below both age 40 and 45 was associated with an increased risk of ischaemic heart disease, seeming most pronounced for women who had an early ovariectomy but also among spontaneous menopausal women. Generally HT did not reduce the risk except for the early-ovariectomised women, where no increased risk of ischaemic heart disease for HT users was found



Menopausal age definition	Age at menopause		
	<40 years, n = 380	40–45 years, n = 1967	>45 years, n = 8186
At ovariectomy			
Cases (person time)	7(610)	4(794)	3(1301)
Rate/1000	11.4(5.5–24.0)	5.0(1.9–13.4)	2.3(0.7–71.5)
Univariate	7.6(1.9–31.0)	2.3(0.5–10.3)	Ref.
Multivariate ^a	8.7(2.0–38.1)	3.1(0.7–15.1)	Ref.
Spontaneous			
Cases (person time)	9(922)	25(4301)	150(32312)
Rate/1000	9.8(5.1–18.8)	5.8(3.9–8.6)	4.8(3.7–6.3)
Univariate	2.4(1.2–4.8)	1.3(0.8–2.1)	Ref.
Multivariate ^a	2.2(1.0–4.9)	1.2(0.7–2.0)	Ref.
At HT start			
Cases (person time)	3(513)	33(5565)	52(10775)
Rate/1000	5.9(1.9–18.1)	5.9(4.2–8.3)	4.6(4.0–5.4)
Univariate	1.4(0.5–4.5)	1.3(0.9–1.9)	Ref.
Multivariate ^a	1.3(0.4–4.1)	1.2(0.8–1.9)	Ref.
All			
Cases (person time)	19(2045)	62(10660)	205(44388)
Rate/1000	9.3(5.9–14.6)	5.8(4.5–7.5)	4.6(4.0–5.3)
Univariate	2.4(1.5–3.8)	1.4(1.1–1.8)	Ref.
Multivariate	2.1(1.3–3.5)	1.3(1.0–1.8)	Ref.

Menopausal age is defined through age of ovariectomy, age of spontaneous occurrence or age of HT start and for all merged.

Appropriatezza chirurgica in ginecologia: cisti ovariche



Premature surgical menopause was associated with long-term negative effects on cognitive function, which are not entirely offset by menopausal HT.

The potential long-term effects on cognitive function should form part of the risk/benefit ratio when considering ovariectomy in younger women



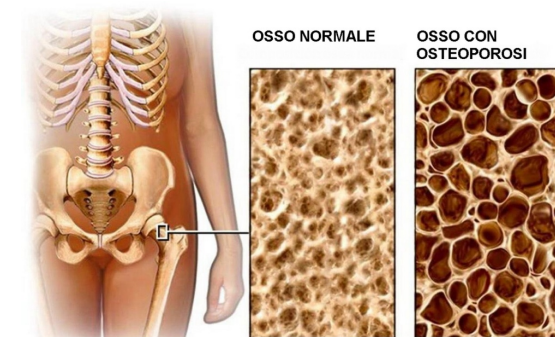
Table 2. Multivariable logistic regression models for the association between age at menopause and cognitive performance (n = 4868)

Age at menopause (years)	n	Verbal fluency Isaacs ≤40		Visual memory BVRT ≤10		Psychomotor speed TMTA ≥68		Executive function TMTB ≥135		Global function MMSE < 26	
		OR (95%CI)	P	OR (95%CI)	P	OR (95%CI)	P	OR (95%CI)	P	OR (95%CI)	P
Minimally-adjusted model*											
After 50	2005	Reference		Reference		Reference		Reference		Reference	
45-50	1871	1.06 (0.91-1.23)	0.48	1.05 (0.91-1.21)	0.51	1.05 (0.90-1.22)	0.53	1.10 (0.94-1.28)	0.23	1.04 (0.88-1.24)	0.64
41-45	621	1.15 (0.93-1.42)	0.21	1.16 (0.95-1.41)	0.14	1.17 (0.95-1.43)	0.14	1.19 (0.96-1.47)	0.12	1.12 (0.88-1.42)	0.36
40 or before	371	1.51 (1.18-1.95)	0.001	1.43 (1.13-1.82)	0.003	1.15 (0.89-1.49)	0.29	1.22 (0.94-1.59)	0.14	1.24 (0.93-1.65)	0.14
Multivariable adjusted model**											
After 50	2005	Reference		Reference		Reference		Reference		Reference	
45-50	1871	1.06 (0.91-1.24)	0.44	1.05 (0.91-1.21)	0.50	1.06 (0.91-1.24)	0.44	1.10 (0.95-1.30)	0.19	1.05 (0.88-1.25)	0.58
41-45	621	1.14 (0.92-1.41)	0.25	1.16 (0.95-1.41)	0.15	1.16 (0.94-1.43)	0.17	1.18 (0.95-1.47)	0.14	1.11 (0.87-1.41)	0.40
40 or before	371	1.56 (1.12-1.87)	0.004	1.39 (1.09-1.77)	0.007	1.07 (0.83-1.39)	0.59	1.16 (0.88-1.51)	0.29	1.19 (0.89-1.58)	0.25

*Models are adjusted for recruitment centre, age and education level.

**Models are adjusted for recruitment centre, age, education level, physical limitations, chronic illness, depression, use of HT at the menopause and current HT use.

Bone loss has been reported to be as high as 20% during the 18 months following removal of both ovaries. Bilateral oophorectomy, particularly before the natural menopause, is associated with greater bone loss and higher rates of osteoporosis and bone fractures



Appropriatezza chirurgica in ginecologia: cisti ovariche



Figura 3.7

Andamento temporale degli interventi effettuati in donne con diagnosi di cisti ovarica in ospedali toscani, anni 2009-2016 - Suddivisione per tipo di intervento

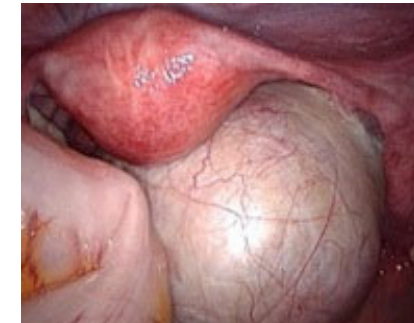
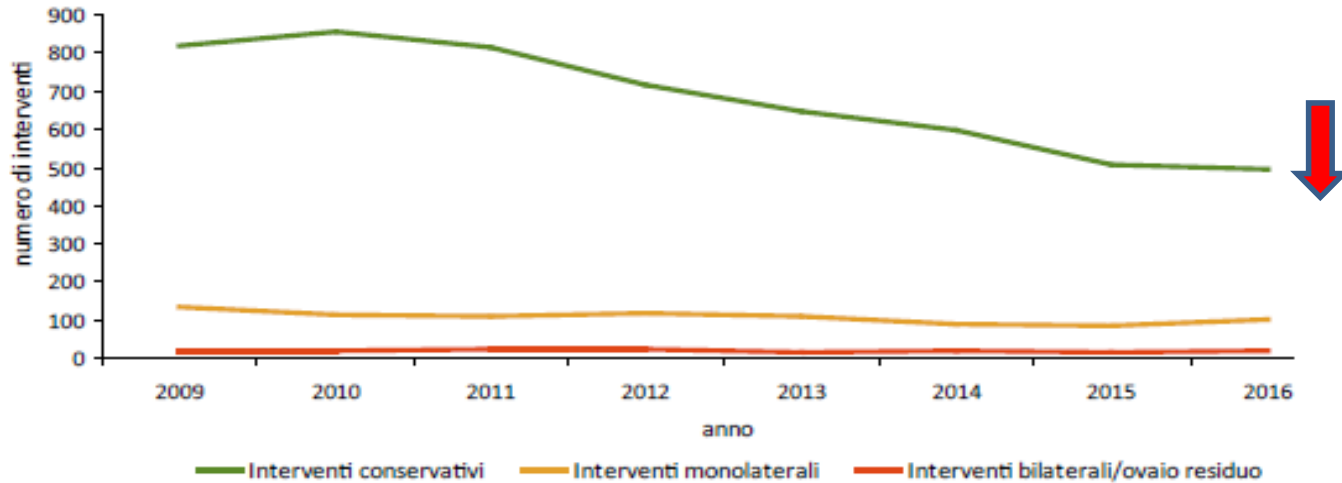


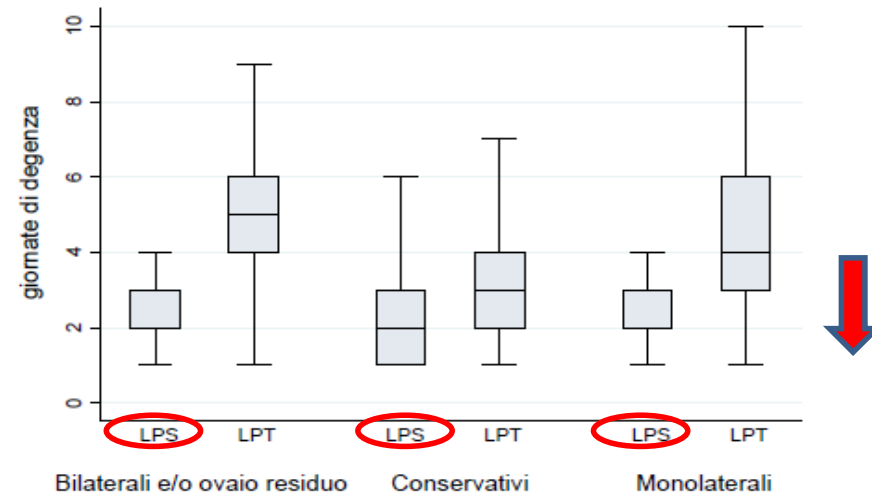
Tabella 3.5

Interventi effettuati in donne con diagnosi di cisti ovarica in ospedali toscani, anni 2009-2016 - Suddivisione per via d'accesso e reparto di dimissione

Reparto di dimissione	LPS		LPT	
	N	%	N	%
Ostetricia e ginecologia	5278	93,5	684	87,8
Chirurgia generale	347	6,1	91	11,7

Figura 3.9

Boxplot delle giornate di degenza in ospedali toscani per via di accesso e tipo di intervento in donne con diagnosi di cisti ovarica, anni 2009-2016



Appropriatezza chirurgica in ginecologia: cisti ovariche



Tabella 3.3

Distribuzione degli interventi effettuati in donne con diagnosi di cisti ovarica in ospedali toscani anni 2009-2016 - Suddivisione per via d'accesso laparoscopica e laparotomica e tipo di intervento

Anno	Laparotomie			Laparoscopie		
	Conservativi N (% per via)	Monolaterali N (% per via)	Bilaterali e ovaio residuo N (% per via)	Conservativi N (% per via)	Monolaterali N (% per via)	Bilaterali/ ovaio residuo N (% per via)
2009	134 (73,6)	38 (20,8)	10 (5,4)	681 (86,4)	96 (12,1)	11 (1,4)
2010	95 (71,9)	27 (20,4)	10 (7,5)	761 (88,5)	86 (10,0)	12 (1,4)
2011	86 (66,6)	31 (24,0)	12 (9,3)	722 (89,0)	78 (9,6)	11 (1,3)
2012	53 (53,0)	36 (36,0)	11 (11,0)	660 (87,4)	83 (10,9)	12 (1,5)
2013	63 (71,5)	20 (22,7)	5 (5,6)	581 (85,0)	91 (13,3)	11 (1,6)
2014	46 (69,7)	18 (27,2)	2 (3,0)	552 (85,8)	71 (11,0)	20 (3,1)
2015	38 (70,3)	11 (20,3)	5 (9,2)	470 (84,5)	73 (13,1)	13 (2,3)
2016	46 (69,7)	15 (22,7)	5 (7,5)	447 (81,7)	86 (15,7)	14 (2,5)
Totale	561 (68,7)	196 (23,9)	60 (7,3)	4.874 (86,4)	664 (11,8)	104 (1,8)

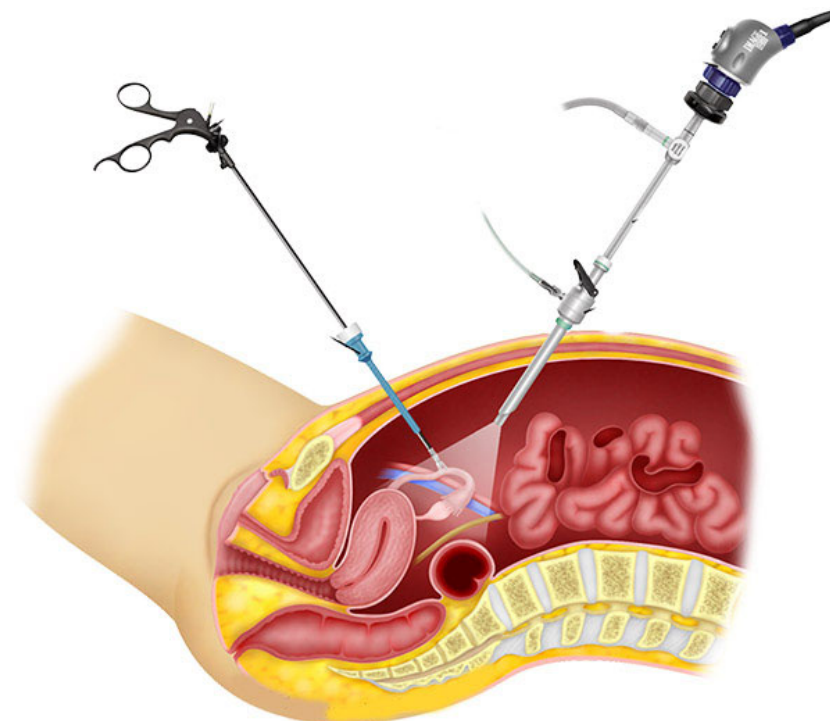


Tabella 3.4

Età media e mediana delle donne con diagnosi di cisti ovarica per tipo di intervento, anni 2009 e 2016

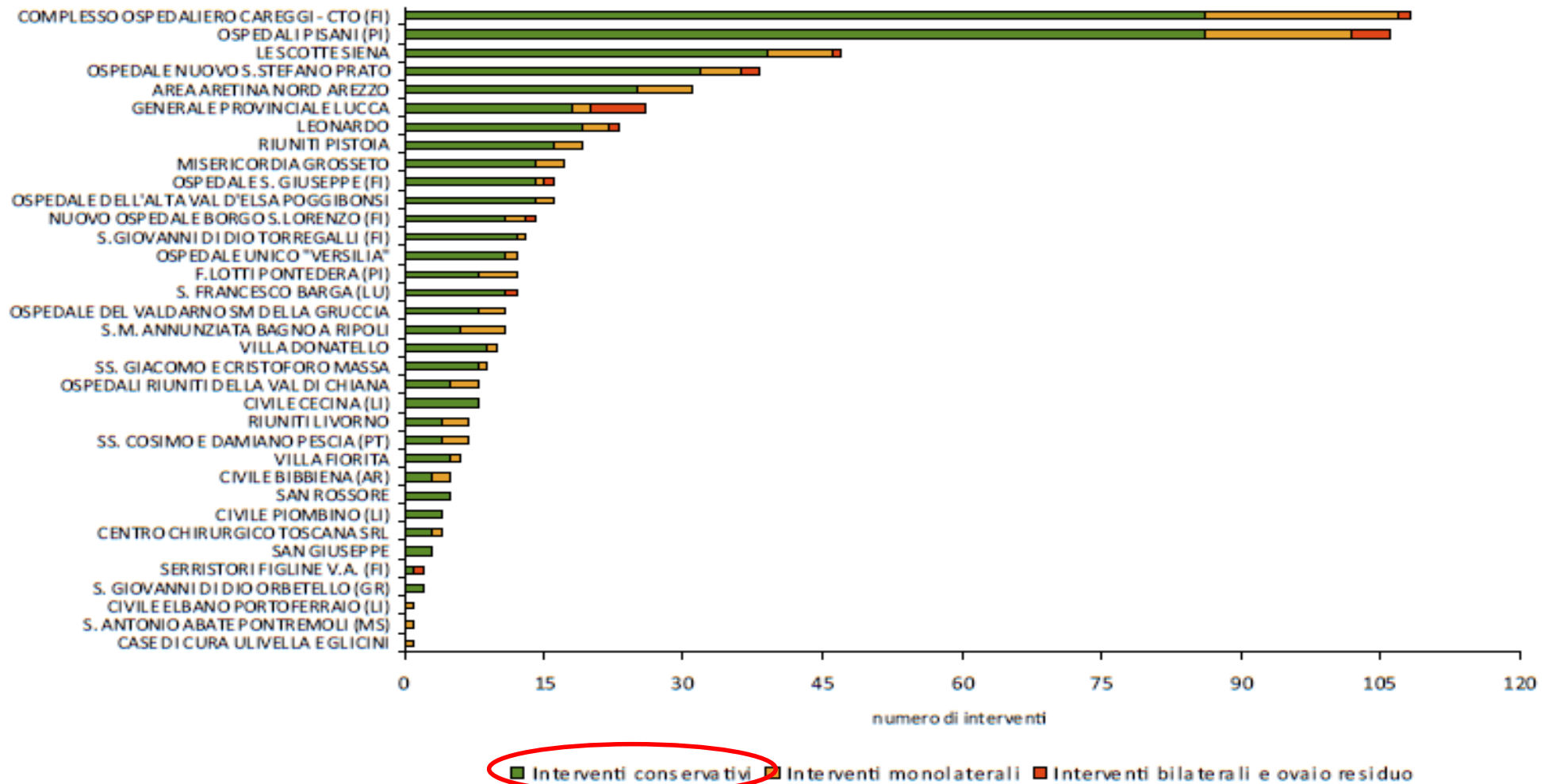
Tipo intervento	2009		2016	
	età media	età mediana	età media	età mediana
Interventi conservativi	33,5	34	33,9	35
Interventi monolaterali	36,4	39	37,3	39
Interventi bilaterali/ovaio residuo	38,8	41	42,4	44

Appropriatezza chirurgica in ginecologia: cisti ovariche



Figura 3.8

Distribuzione degli interventi effettuati in donne con diagnosi di cisti ovarica in ospedali toscani anno 2016 - Suddivisione per singolo presidio ospedaliero e tipo di intervento

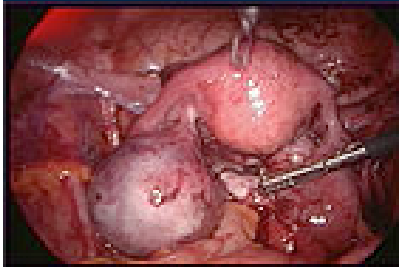


Appropriatezza chirurgica in ginecologia: Endometriosi

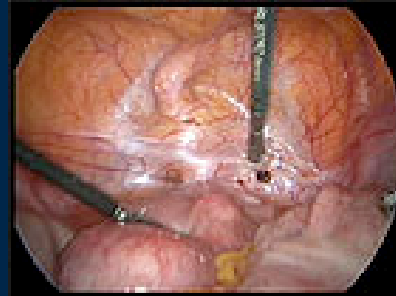


Laparoscopia

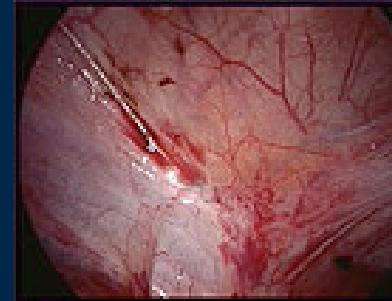
ENDOMETRIOSI
OVARICA



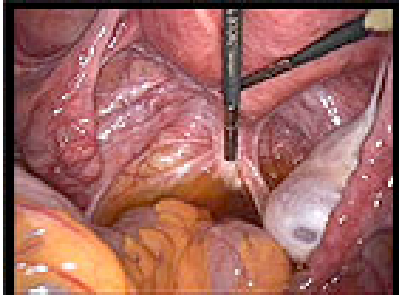
ENDOMETRIOSI PERITONEALE
SUPERFICIALE



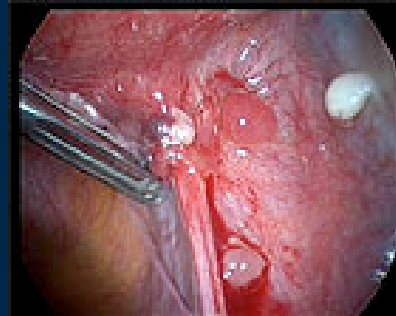
ENDOMETRIOSI
PERITONEALE SUPERFICIALE



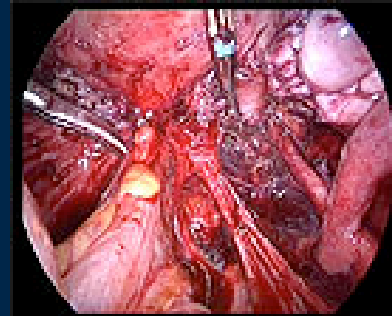
ENDOMETRIOSI SETTO
RETTO-VAGINALE



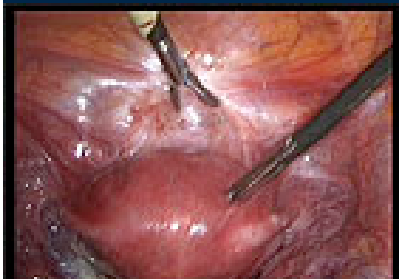
ENDOMETRIOSI DEL
LEGAMENTO UTERO-SACRALE



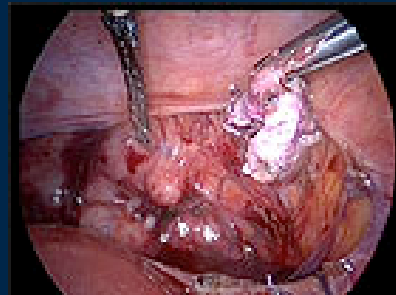
ENDOMETRIOSI
INTESTINALE



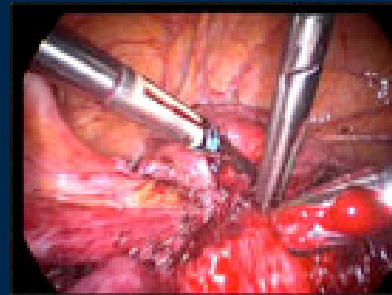
ENDOMETRIOSI
VESCICALE



ENDOMETRIOSI
VESCICALE



ENDOMETRIOSI
VESCICALE

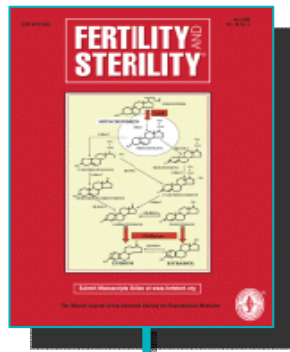


What is the role of surgical treatment?



1927

John
Albertson
Sampson



1985

ASRM
Staging of
Endometriosis



2005

ESHRE
Clinical
guidelines



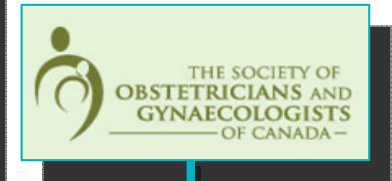
2006

ASRM
Clinical
guidelines



2006

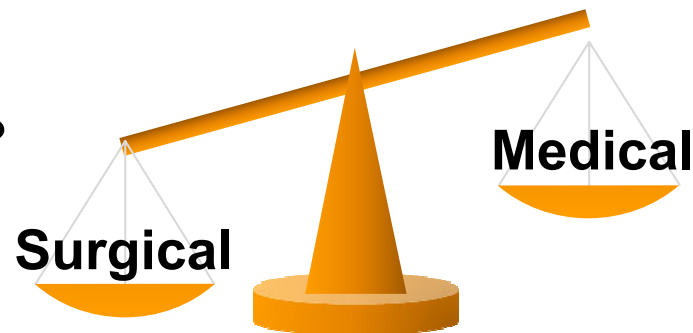
RCOG
Clinical
guidelines



2010

SOGC
Clinical
guidelines

Which
treatment?



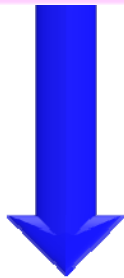
ASRM=The American Society for Reproductive Medicine; ESHRE=European Society of Human Reproduction and Embryology; RCOG=Royal College of Obstetricians and Gynaecologists; SOGC=Society of Obstetricians and Gynaecologists of Canada.

What is the role of surgical treatment?



Surgical treatment for endometriosis-associated pain

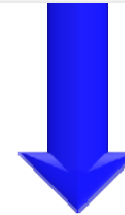
Surgery is the primary approach for symptomatic endometriomas



- Improve pain
- Improve quality of life
- Prevent endometriosis progression

Surgical treatment in endometrioma-associated infertility

*In case of ovarian endometrioma-associated infertility surgery must be considered as **'first-line' treatment** to give patients the best chance of conceiving naturally*



- Improvement of access to follicles
- Improve ovarian response to endogenous stimulation
- Prevent endometriosis progression

What is the role of surgical treatment?



“Endometriosis should be viewed as a chronic disease that requires a life-long management plan with the goal of maximizing the use of medical treatment and avoiding repeated surgical procedures”

ASRM Fertil Steril 2008

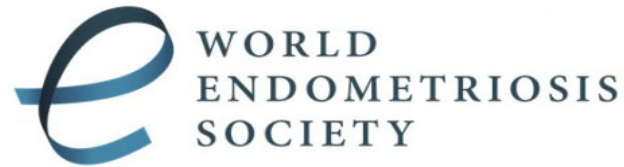
**Probably we should not talk of *endometriosis*. We should talk about *this* particular patient, with *these* findings, who received *those* previous treatments, in *that* center, in *that* period, with *these* results...
Each patient is “unique”**



Management of endometriosis



2010



2013



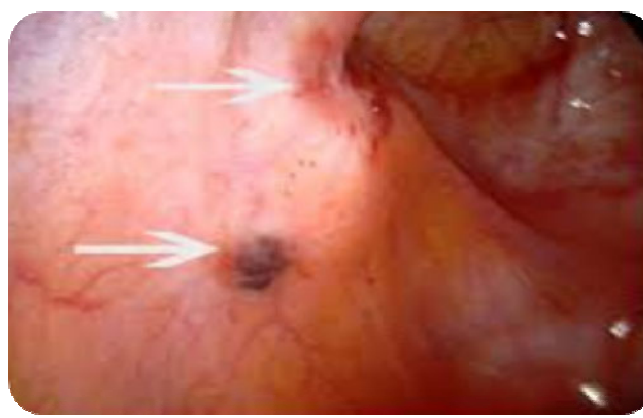
2014

Empirical medical treatment for painful symptoms should be considered either prior to or without laparoscopic confirmation of endometriosis

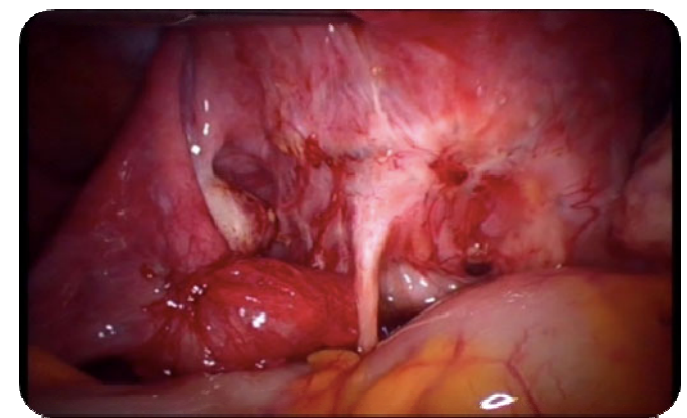
OMA



SUP



DIE



What is the role of surgical treatment?



Italian Journal of **Gynæcology & Obstetrics**

June 2018 - Vol. 30 - N. 2 - Quarterly - ISSN 2385 - 0868



Guidelines for diagnosis and treatment of endometriosis

These Recommendations are addressed to all professionals who deal with the diagnosis and treatment of the diseases covered by these guidelines

Objective of this document is to provide Italian gynecologists a useful tool in clinical practice, based on updated evidences

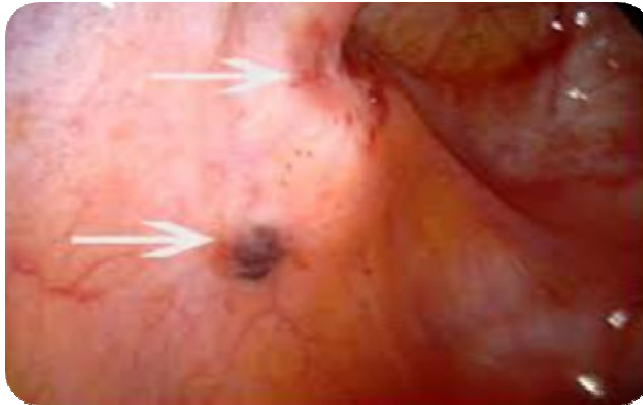
When and which is the role of surgical treatment?



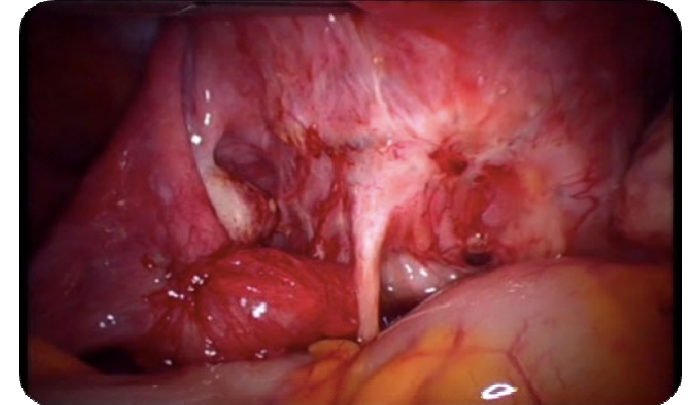
OMA



SUP



DIE



When ?

Surgical treatment of endometrioma is indicated if symptoms are or become not responder to medical therapy, or the endometrioma increases in volume or is greater than 3 cm in diameter in infertile patients

Which ?

Laparoscopy is the gold standard for the treatment of endometriosis, due to faster recovery, better post-operative outcome and reduced hospital costs

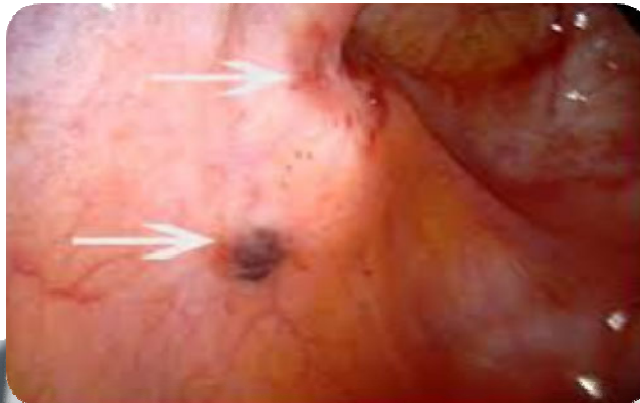
Management of endometriosis: the surgical choice



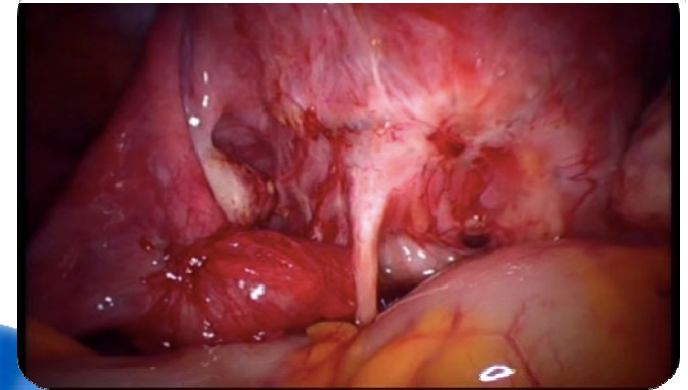
OMA



SUP



DIE

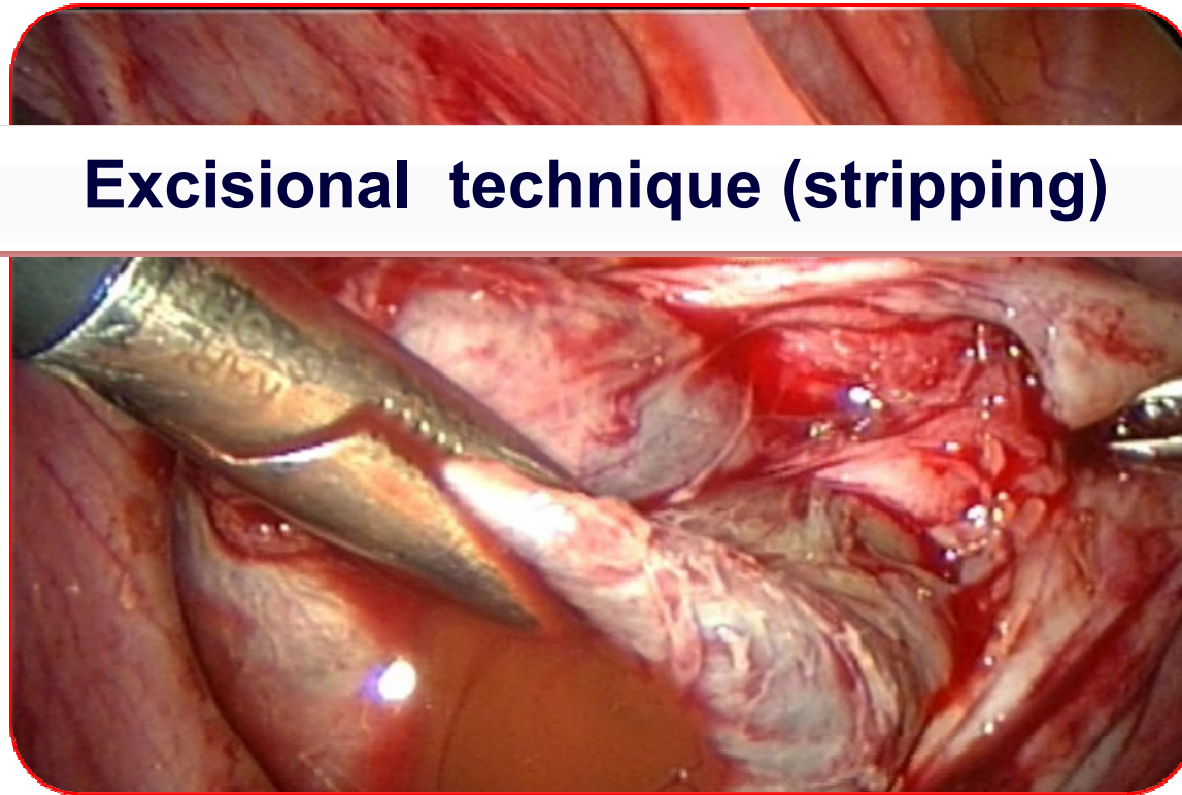


Adequate first surgery

Minimally invasive surgery

Surgical technique

Excisional technique (stripping)



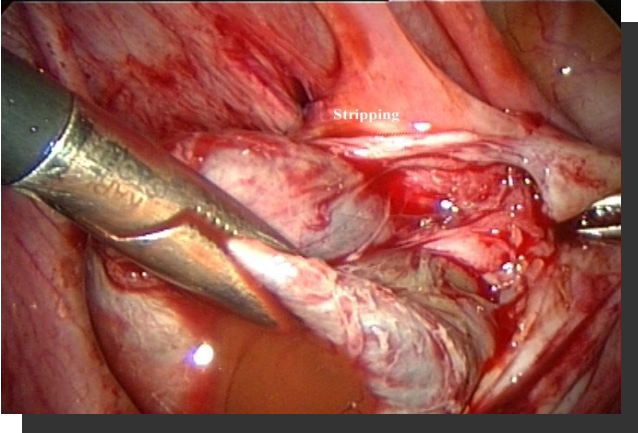
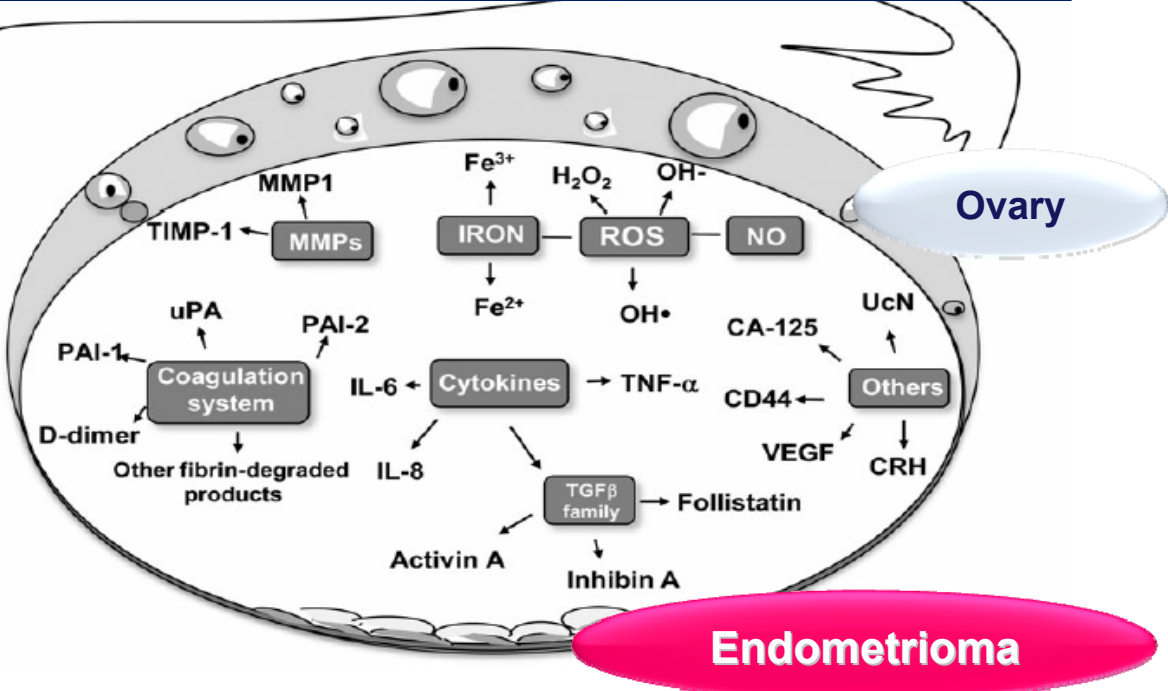
Perform cystectomy in OMA instead of drainage and coagulation or CO₂ laser vaporization, because of a lower recurrence rate and pain

Endometrioma and ovarian reserve



Ovarian reserve reduction before and after surgery

The 'toxic' network of endometrioma fluid



Previous surgery for endometrioma is a risk factor for infertility and low pregnancy rate

An endometrioma may cause per se damage to the surrounding healthy ovarian tissue

Sanchez et al, Hum Reprod Update 2014
Muzii L, Hum Reprod, 2014

Santulli et al, Hum Reprod, 2016
Maignien et al, AJOG, 2017

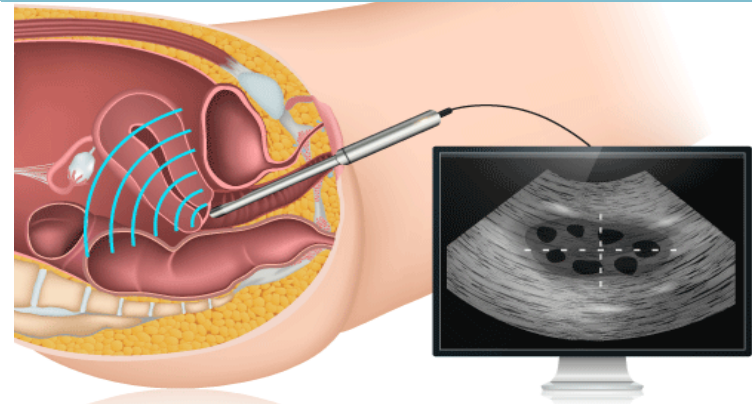
Management of endometrioma: ovarian reserve



Anti-mullerian hormone (AMH)



Antral follicle count (AFC)



Measure serum AMH levels and antral follicle count before/after surgery

Oocyte cryopreservation may be offered in as part of the treatment strategy to young women who require extensive ovarian surgery



Recurrence of pain after surgery

after 1 years of follow-up
5-50%

Recurrence of lesions after surgery

after 5 years of follow-up
10-30%

Management of endometrioma: a new approach to prevent tissue damage



Intracystic administration of medical therapies



After endometrioma aspiration

- *Ethanol sclerotherapy*

- *Recombinant IL-2*

- *Methotrexate*

Future of intracystic
approach

direct application of synthetic
progestins (LNG, danazol or SPRM) without
affecting ovarian activity.

Human Reproduction Update, Vol.21, No.3 pp. 329–339, 2015

Advanced Access publication on January 24, 2015 doi:10.1093/humupd/dmw003

human
reproduction
update

Deep endometriosis infiltrating the recto-sigmoid: critical factors to consider before management

Mauricio Simões Abrão^{1,*}, Felice Petraglia², Tommaso Falcone³, Joerg Keckstein⁴, Yutaka Osuga⁵, and Charles Chapron^{6,7,8}



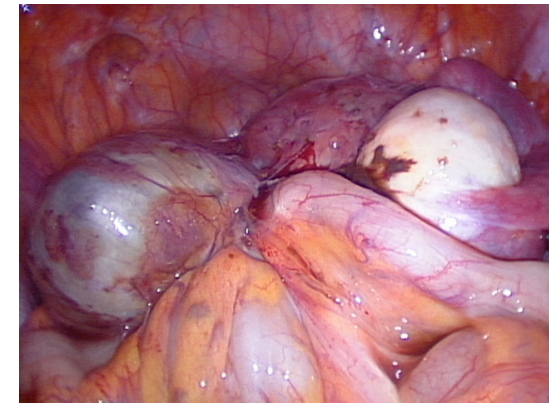
Management of DIE



Several findings show the superiority of laparoscopy vs laparotomy in the treatment of pelvic endometriosis, provided that the surgical procedure is performed in centers highly specialized in endoscopic pelvic surgery, by surgeons with high level of experience in the treatment of endometriosis (“High volume surgeons”)

It is preferable that the surgeon has a proven experience in the laparoscopic treatment of extragenital conditions, such as urological or colorectal surgical procedures (“pelvic surgeon”)

The treatment should be carried out by a multidisciplinary team (gynecologist, general surgeon, urologist) with a proven experience in the treatment of severe pelvic endometriosis



Appropriatezza chirurgica in ginecologia: endometriosi



Tabella 4.1

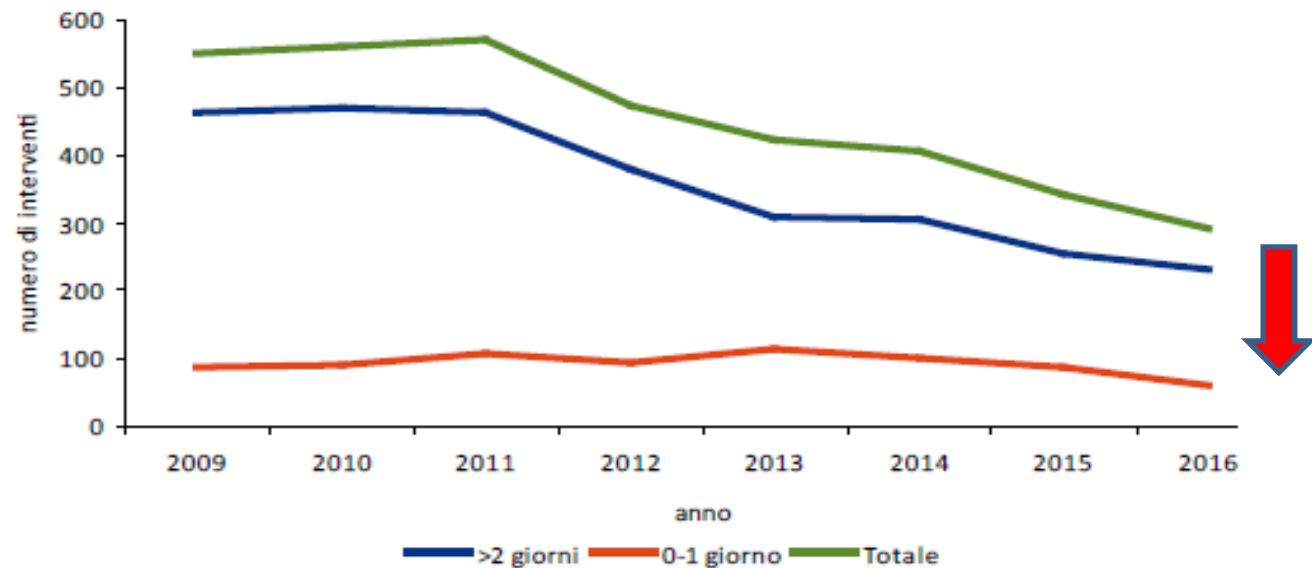
Tassi di ricovero per patologia di endometriosi e di intervento per 100.000 donne residenti in Toscana, anni 2009-2016 - Standardizzazione per età

Anno	Tasso di ricovero per patologia	Tasso d'intervento
2009	39,5	28,5
2010	39,2	29,7
2011	38,9	30,0
2012	35,5	26,5
2013	32,8	23,6
2014	30,4	23,2
2015	27,3	19,6
2016	23,8	17,1



Figura 4.5

Andamento temporale degli interventi effettuati in donne con diagnosi di endometriosi in ospedali toscani, anni 2009-2016 - Suddivisione per degenza: ≥ 2 giorni e 0-1 giorno



Appropriatezza chirurgica in ginecologia: endometriosi



Figura 4.10
Distribuzione degli interventi effettuati in donne con diagnosi di endometriosi in ospedali toscani, anni 2009-2016 - Suddivisione per tipo di intervento e sede

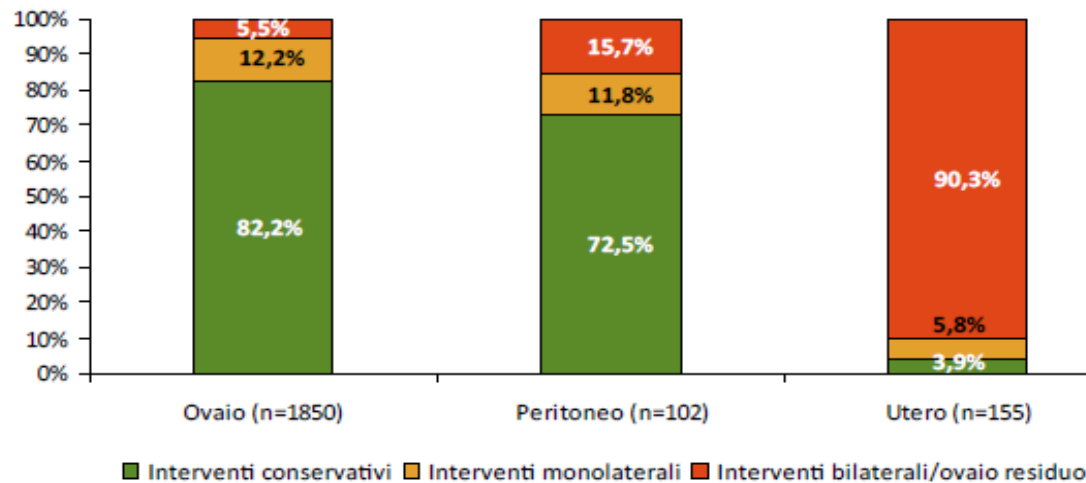


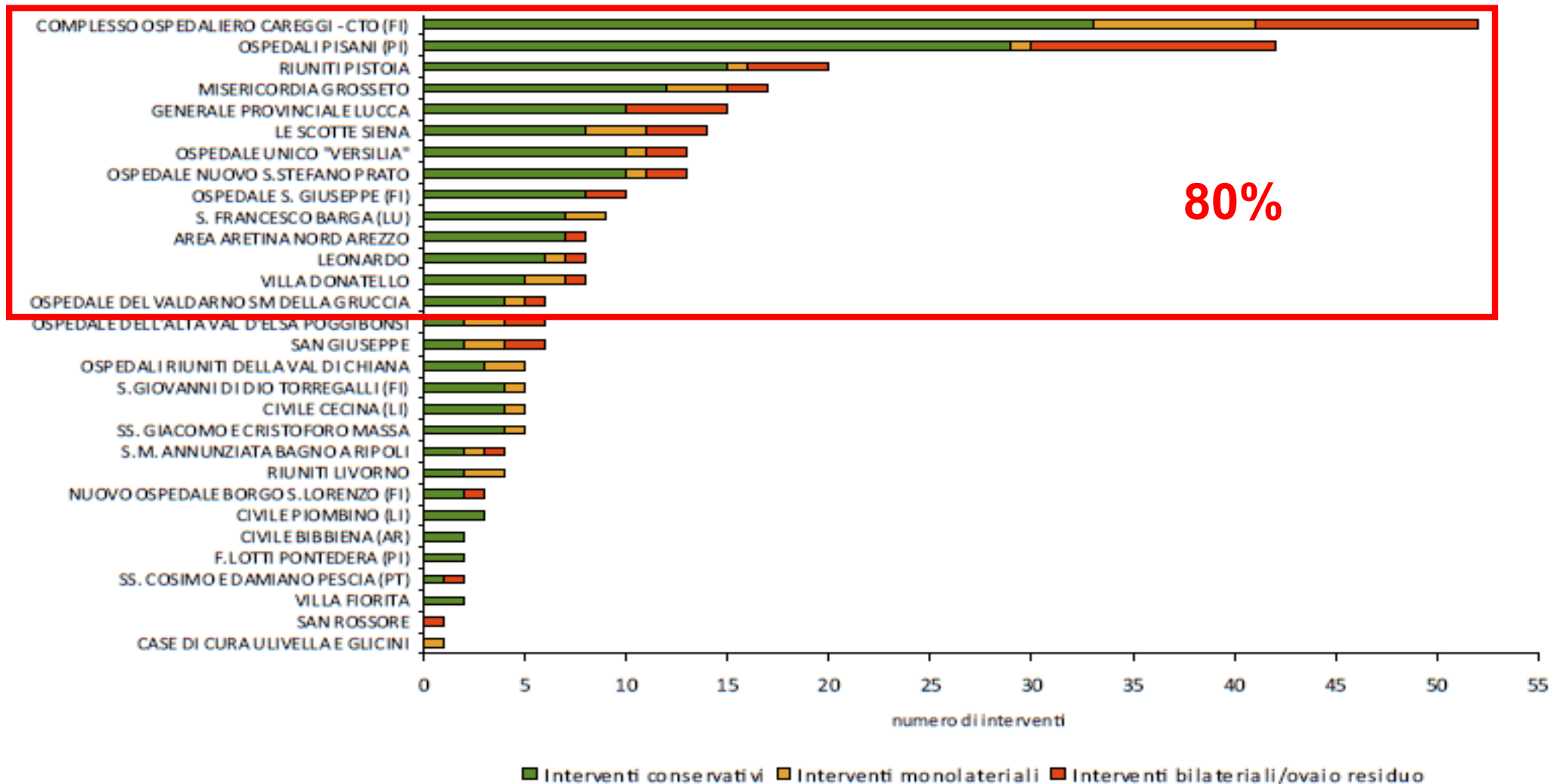
Tabella 4.3
Distribuzione degli interventi effettuati in donne con diagnosi di endometriosi in ospedali toscani, anni 2009-2016 - Suddivisione per via d'accesso laparoscopica e laparotomica e tipo di intervento

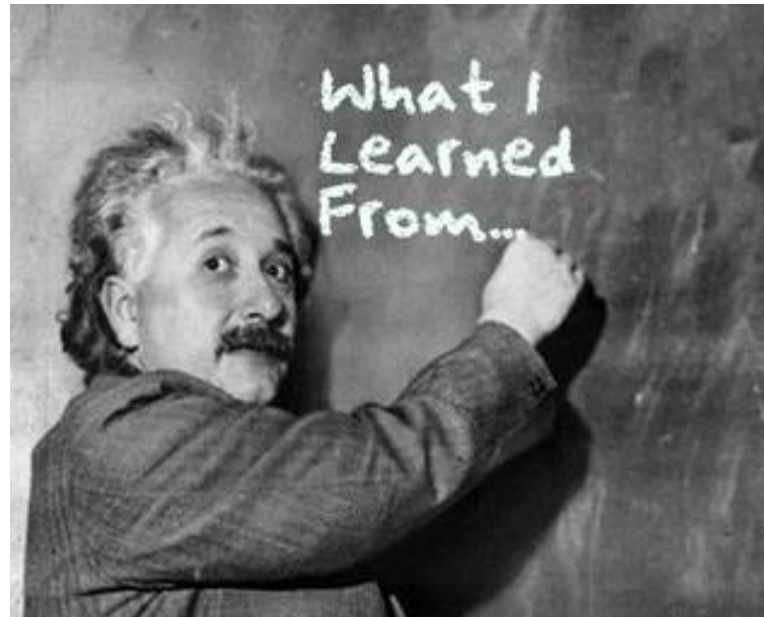
Anno	Laparotomie		Laparoscopie	
	Conservativi N (% per via)	Estesi N (% per via)	Conservativi N (% per via)	Estesi N (% per via)
2009	82 (73,2)	30 (26,8)	372 (85,9)	61 (14,1)
2010	61 (67,8)	29 (32,2)	399 (84,9)	71 (15,1)
2011	40 (55,6)	32 (44,4)	431 (87,1)	64 (12,9)
2012	20 (41,7)	28 (58,3)	361 (84,9)	64 (15,1)
2013	22 (45,8)	26 (54,2)	297 (79,6)	76 (20,4)
2014	19 (39,6)	29 (60,4)	273 (76,7)	83 (23,3)
2015	13 (32,5)	27 (67,5)	223 (73,6)	80 (26,4)
2016	11 (26,2)	31 (73,8)	185 (75,2)	61 (24,8)
Totale	268 (53,6)	232 (46,4)	2.541 (81,9)	560 (18,1)

Appropriatezza chirurgica in ginecologia: endometriosi



Figura 4.8
Distribuzione degli interventi effettuati in donne con diagnosi di endometriosi, Toscana anno 2016 - Suddivisione per singolo presidio ospedaliero e tipo di intervento





Responsabilità del Ginecologo moderno preservare la fertilità nella paziente con patologia benigna e maligna ed evitare chirurgia inutile e inadeguata

Fondamentale il corretto iter diagnostico-terapeutico e la massima personalizzazione della cura, per offrire la soluzione clinica più idonea alla specifica paziente con specifici problemi

La valutazione del rischio oncologico personalizzato e dell'età ovarica della paziente permette la definizione della strategia terapeutica più idonea

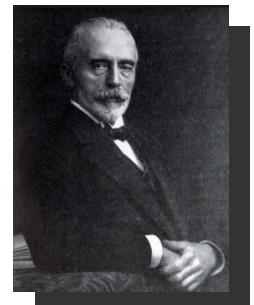


Primum Non Nocere (First Do Not Harm)

The possible harm that any intervention might do...

- We focus too much on the approach, or on the technique, but these are not really the important things
- It is more important to know when to cut, then how to cut, or where to cut.....

**A good surgeon is a doctor who can operate
and knows when not to operate**



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