

# HYSTEROSCOPIE OPERATOIRE

## Y a-t-il encore une place pour la chirurgie en Infertilité



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**Hervé Fernandez**



**Service de Gynécologie Obstétrique**  
**Hôpital Kremlin Bicêtre**  
**GHU: Hôpitaux Universitaires Paris Sud**  
**Université Paris 11**



# Lien d'interet

- **Bourse**

National grant (PHRC)

- **Consultant**

AMS, Bayer, Coloplast, Ferring, Hologic , LeoPharma,  
Preglem- GedeonRichter, Pierre Fabre

HAS

- **Speaker's bureau**

Gedeon, Bayer

# *La chirurgie endo-utérine*

## **L' hystéroscopie opératoire**

**Fibromes sous muqueux**

**Endométrectomie superficielle**

**Malformations, synéchies, adénomyose kystique**

**Polypes endométriaux**

***Prise en charge ambulatoire adaptée***

Intervention	N	Taux de complications opératoires (%)
<b>Endométrectomie</b>	494	<b>4,4</b>
<b>Myomectomie</b>	798	<b>0,8</b>
<b>Polypectomie</b>	784	<b>0,4</b>
<b>Cure de synéchie</b>	134	<b>4,5</b>

[Overton C., Maresh MJA, Baillière Clin Obstet Gynaecol 1995; Jansen et al, Obstet Gynecol 2000; Perino et al, Fertil Steril 2004]

# La patiente jeune: Une nouvelle définition

C'est une femme qui quelque soit  
l'âge. . .même en préménopause

- Souhaite garder ses possibilité de procréation
- C'est, pour les médecins, la nouvelle question clé avant tout traitement des fibromes

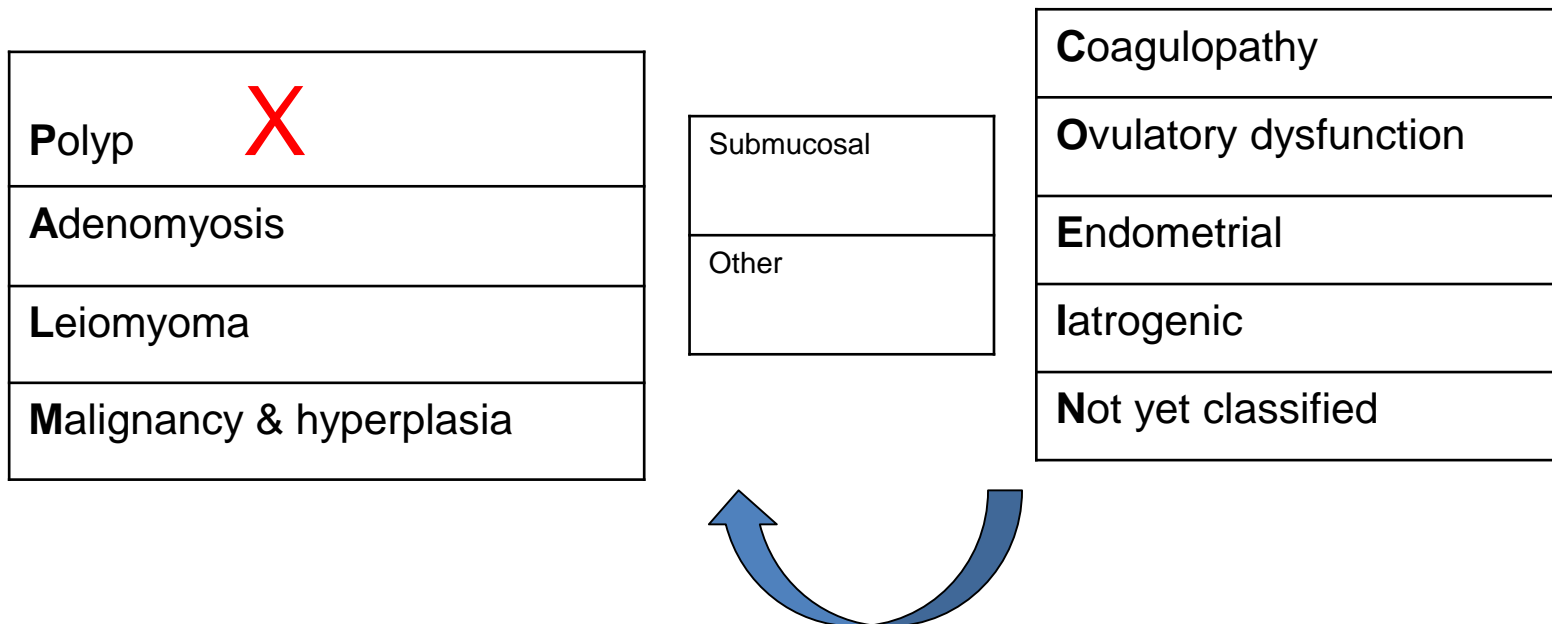


# Saignement uterin anormal

## PALM-COEIN Classification for Causes of Abnormal Bleeding

*FIGO - Working group on menstrual disorders*

*The classification system is stratified into nine basic categories that are arranged according to the acronym PALM-COEIN*

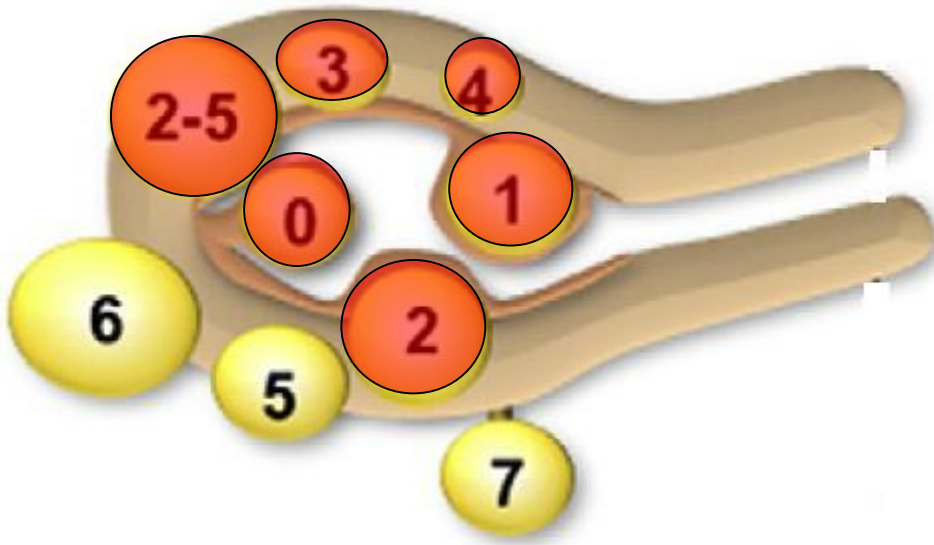


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# **Fibromes utérins**

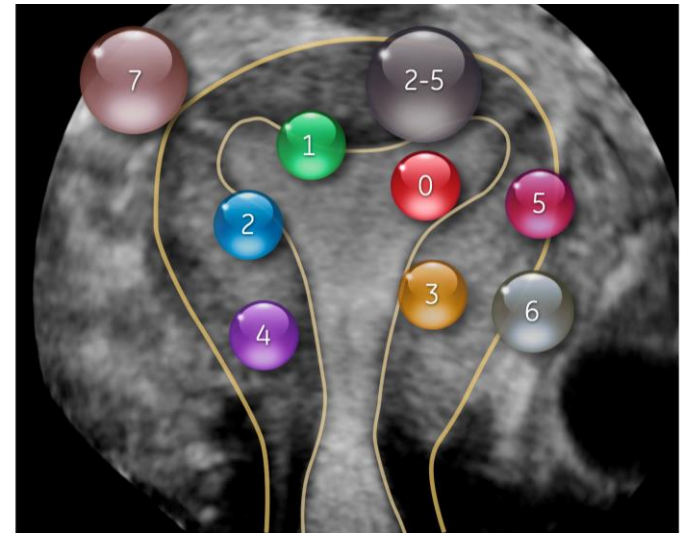
-les traitements hystéroscopiques-

# FIBROMES

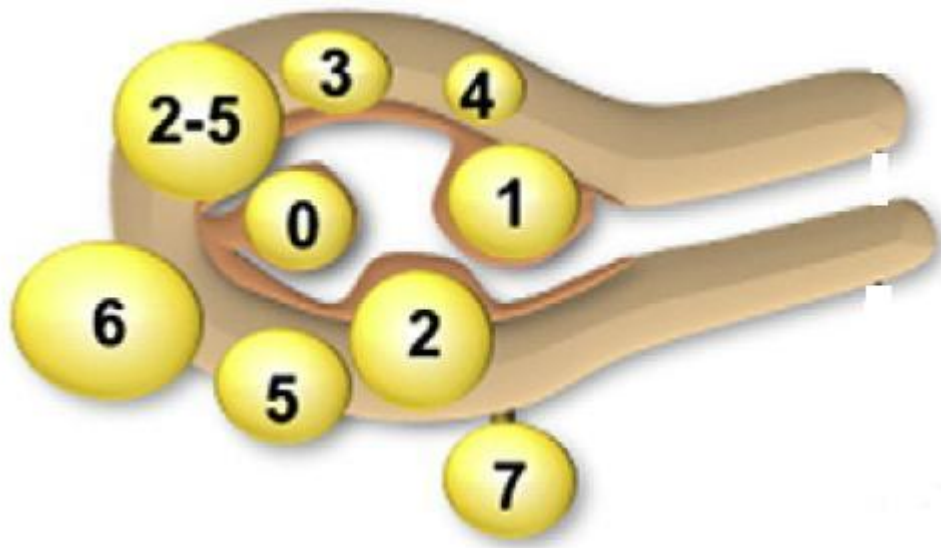


NEW CLASSIFICATION: FIGO 2011  
-Image from Bicêtre TEAM-

- Fibrome 0, 1, 2, 3, 4 & 5 sont causes de ménométrorragies
- Fibromes 5,6, & 7 sont causes de nécrobiose ou de compression des organes de voisinage



\* Based on the FIGO Classification for fibroids 2011 (Munro et al)



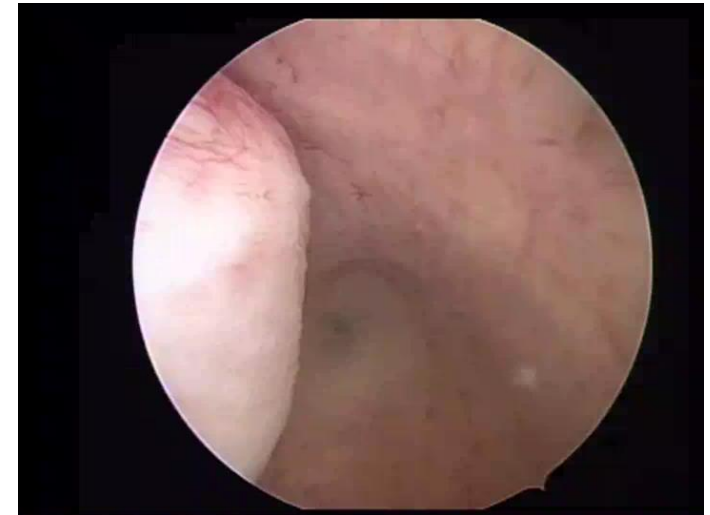
# FIBROMES SOUS-MUQUEUX

0-1-2



# FIBROMES SOUS-MUQUEUX (0,1,2)

- Ils sont (le plus souvent) symptomatiques
- Impact négatif sur fertilité (spontanée ou PMA) NP2 *RPC CNGOF 2011*
- Traitement médical illogique car la **Résection Hystéroscopique** est **efficace** sur:
  - la cause
  - les symptômes
  - la fertilité (spontanée et PMA)
- Intervention chirurgicale sous AG ou ALR en ambulatoire



## Risques:

- Liquide d'irrigation (préférer **Physio** > glycoColle), **courant bipolaire**
- Perforation: **liseré de sécurité** > 5 mm
- Synéchie: utilisation de produit **anti-adhérentiel** (*Acunzo Human Reprod 2003, Guida Human Reprod 2004, Tsapanos J Biomed Mater Res 2001*) + **HSC diag** à distance

# RESECTION SUPERFICIELLE D'ENDOMETRE POUR HYPERTROPHIE chez des femmes en âge de procréer SOPK

## EVALUATION D'UNE NOUVELLE PRISE EN CHARGE.

- Sous anesthésie générale ou locorégionale
- Hystérocopie opératoire
  - Distension: Glycocolle ou sérum physiologique
  - Courant: mono ou bipolaire
  -

### Evaluation

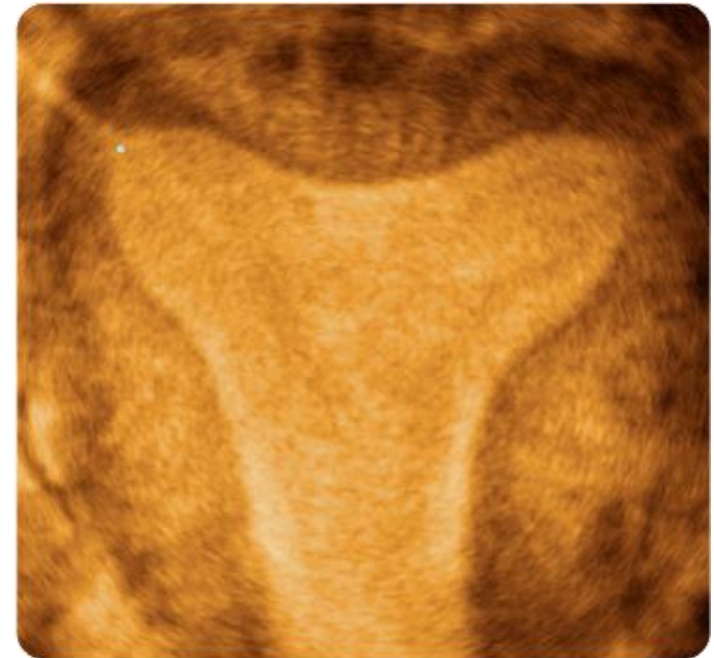
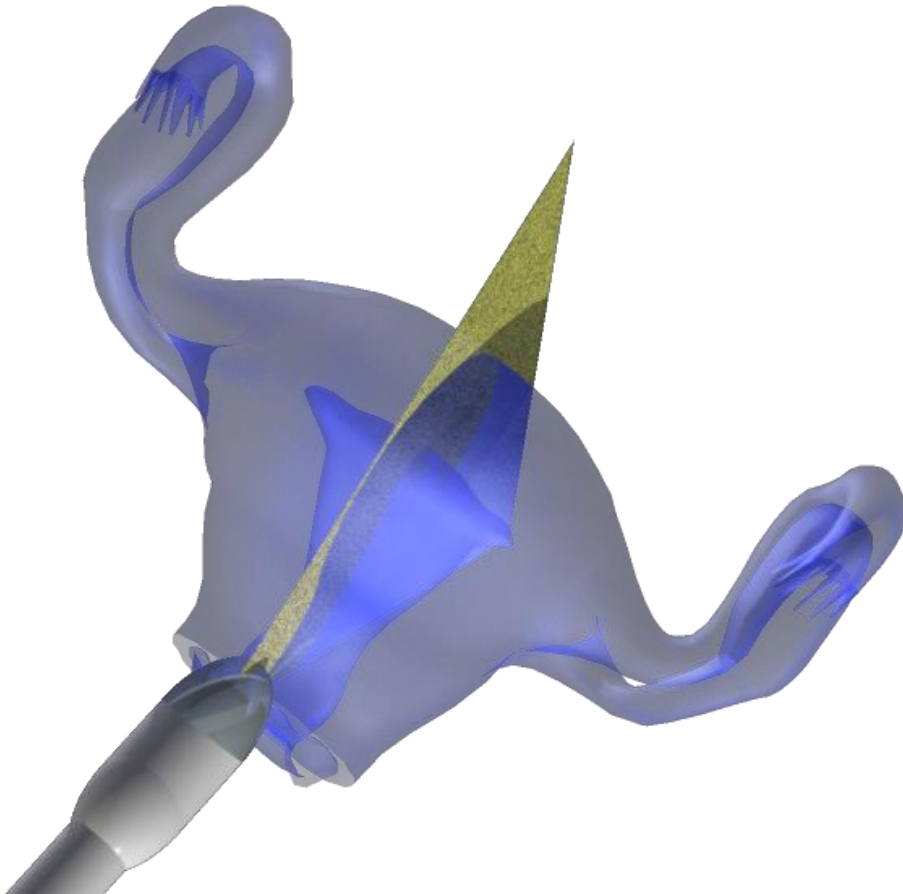
- Effets sur les troubles menstruels
- Impact sur la fertilité

RESULTATS (n=45)

-60% de grossesses spontanées



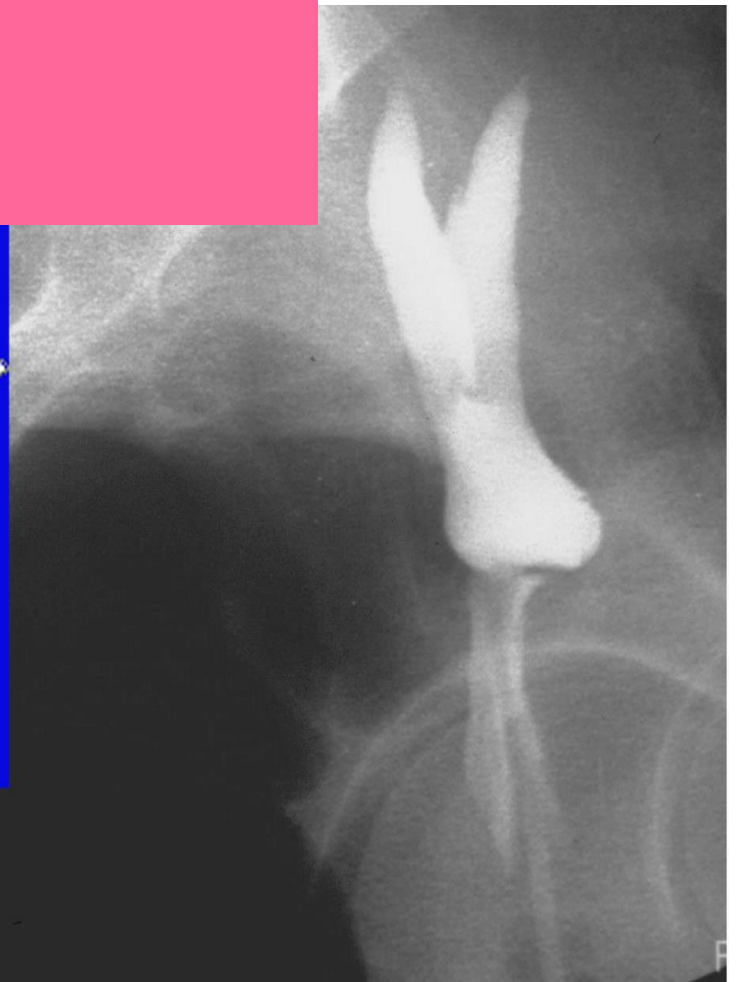
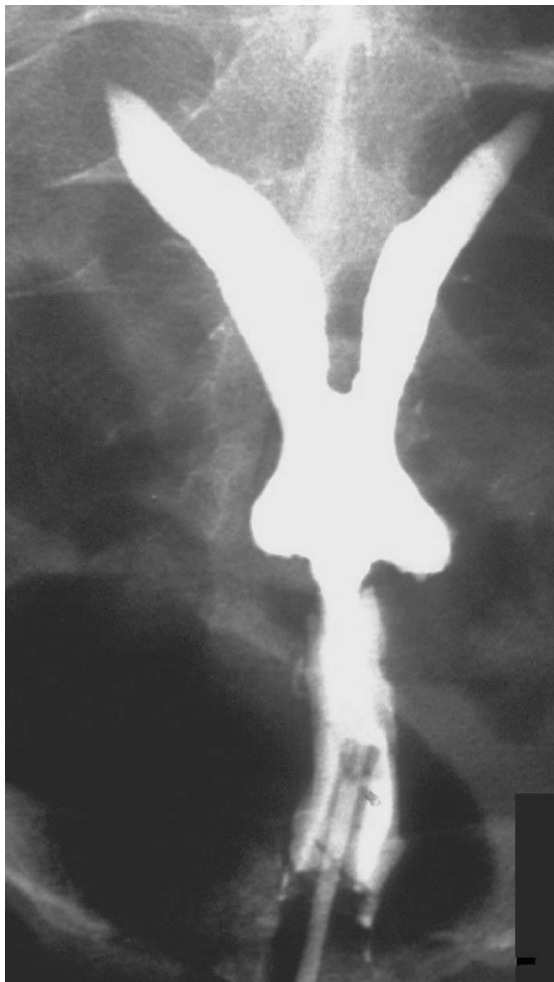
# MALFORMATIONS UTERINES



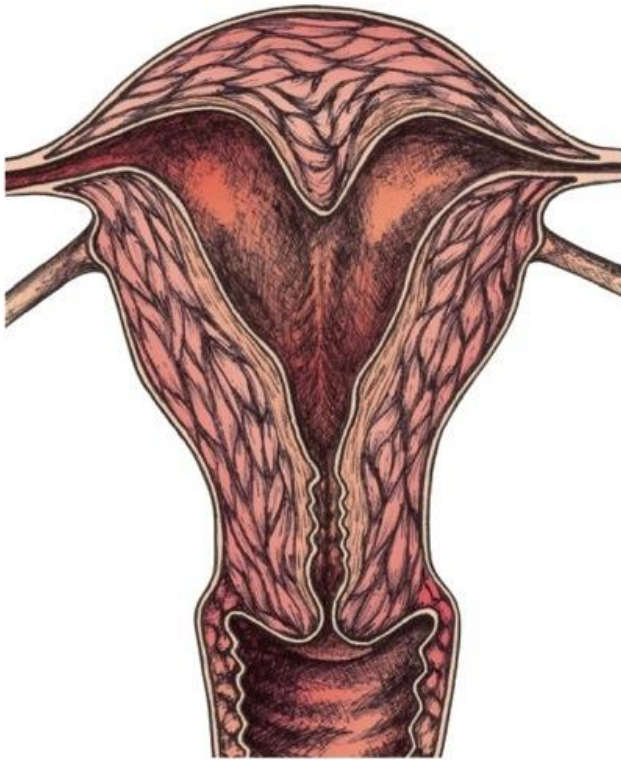
CLOISON..??

OU

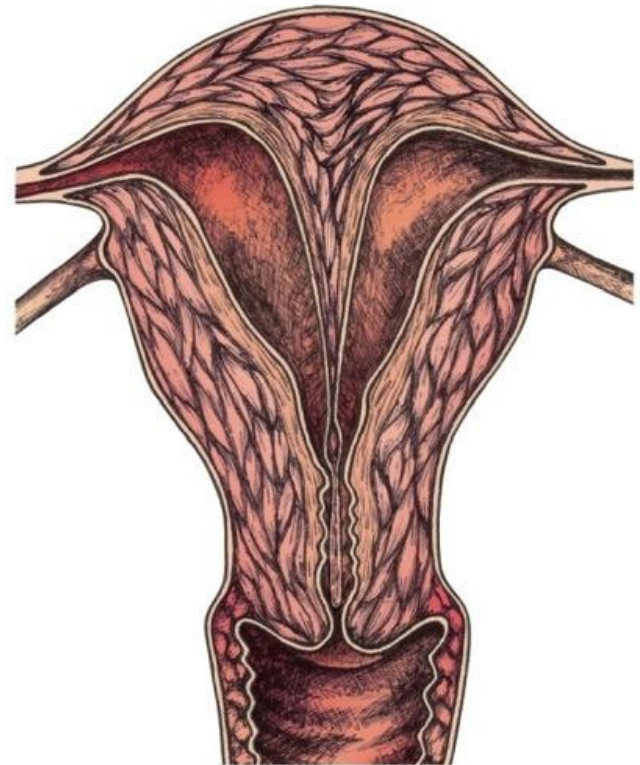
BICORNE..?



## Classe U2 / Uterus séparé

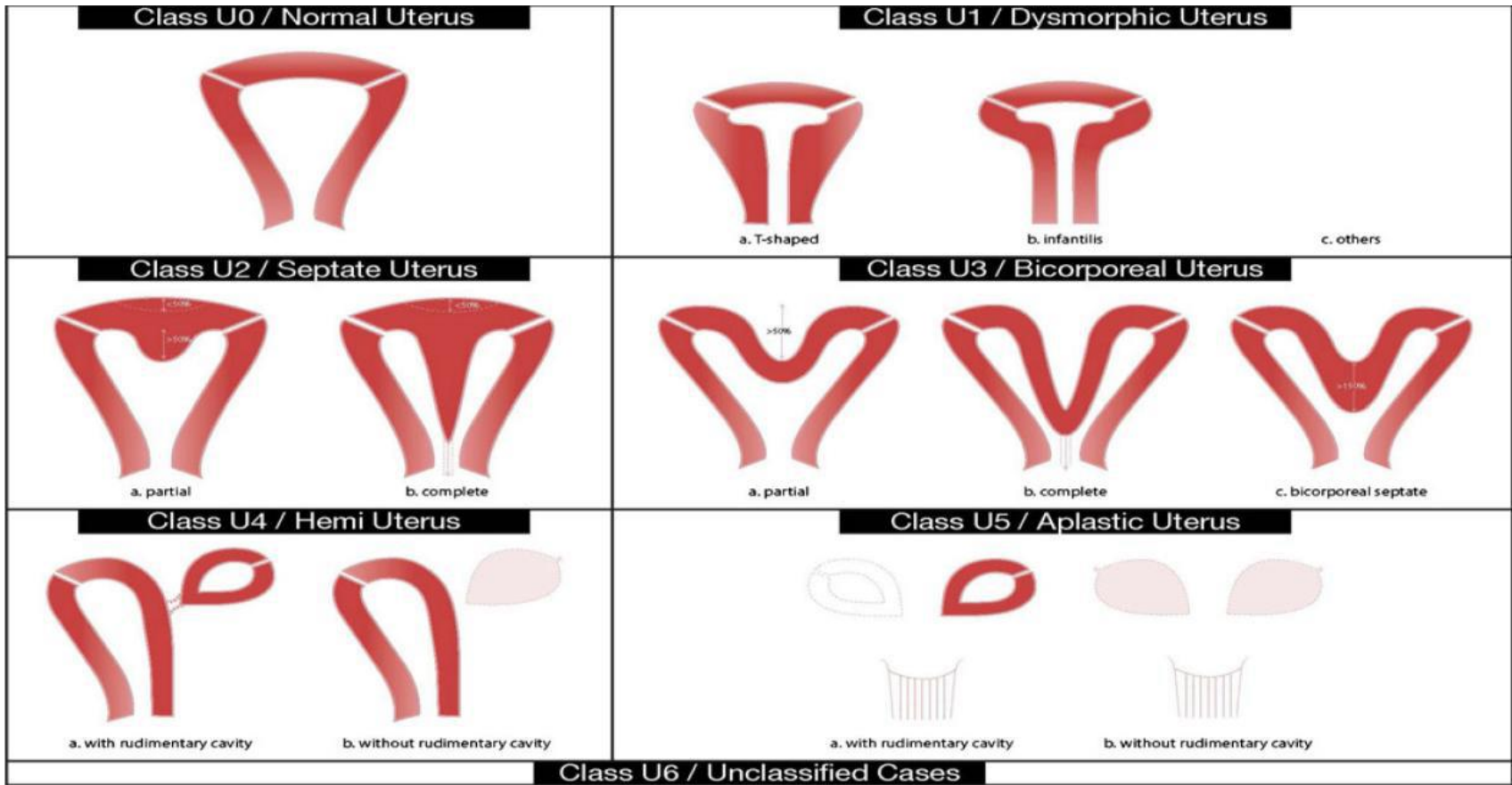


a - séparation partielle



b - séparation complète



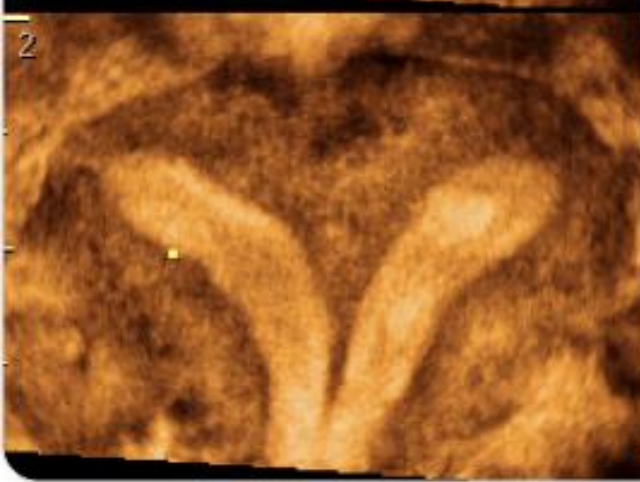
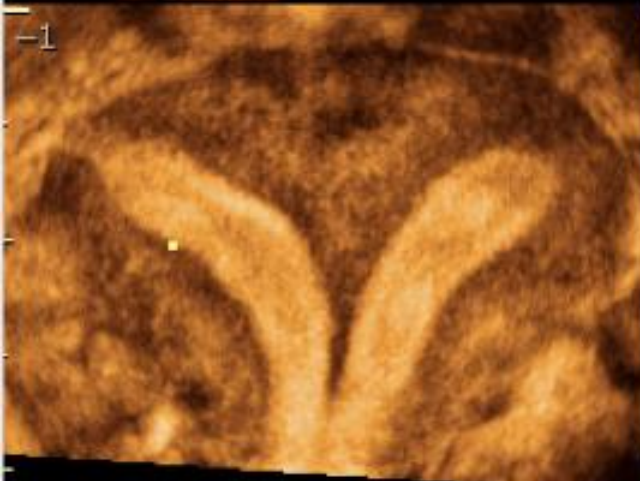
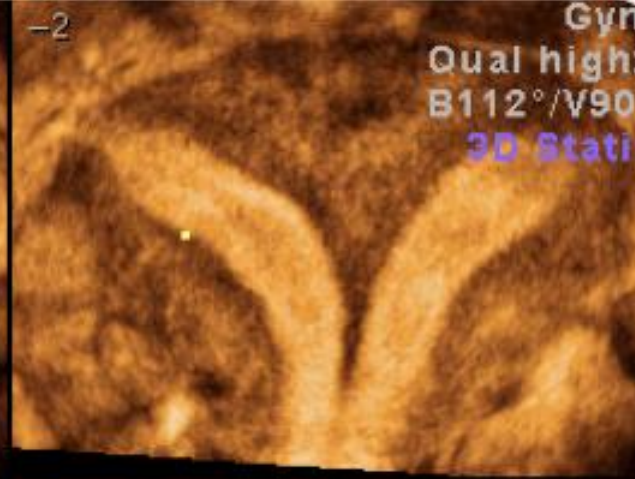
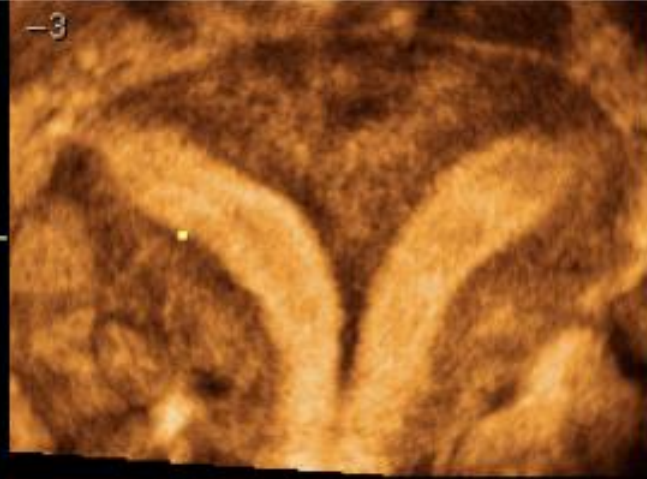
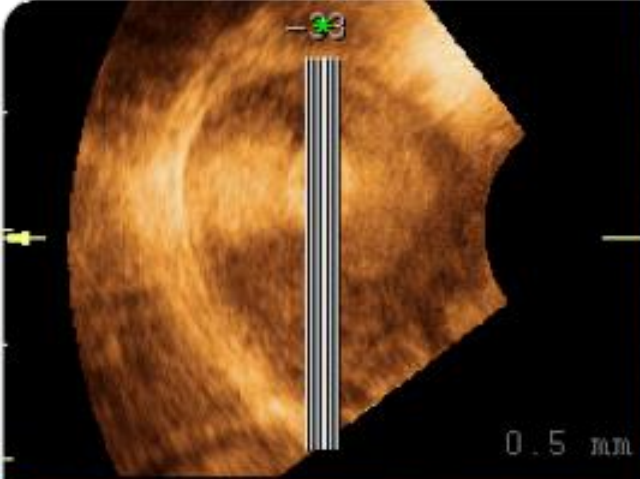


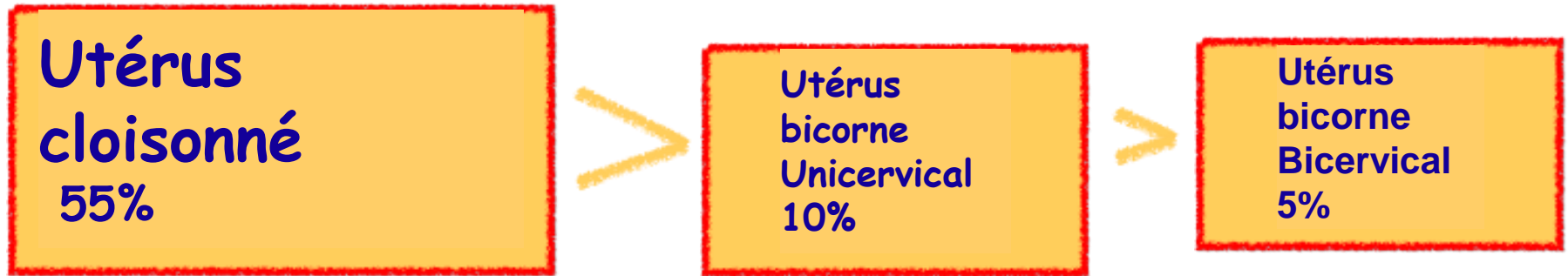
ESHRE/ESGE classification of uterine anomalies: schematic representation

Class U2: internal indentation >50% of the uterine wall thickness & external contour straight or with indentation <50%

Class U3: external indentation >50% of the uterine wall thickness

Class U3b: width of the fundal indentation at the midline >150% of the uterine wall thickness

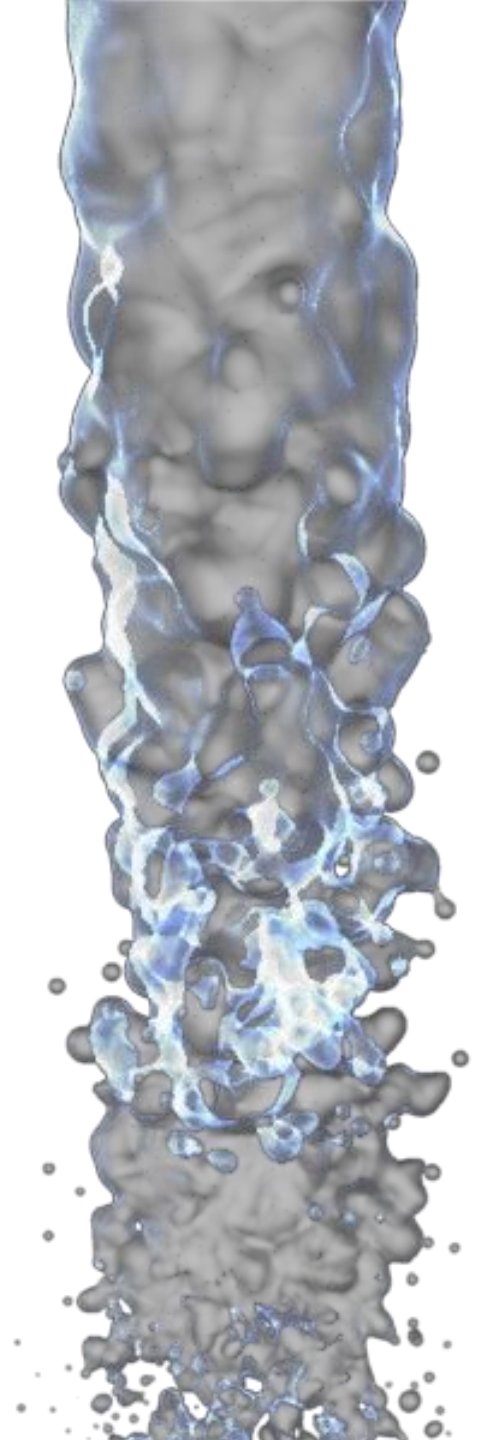




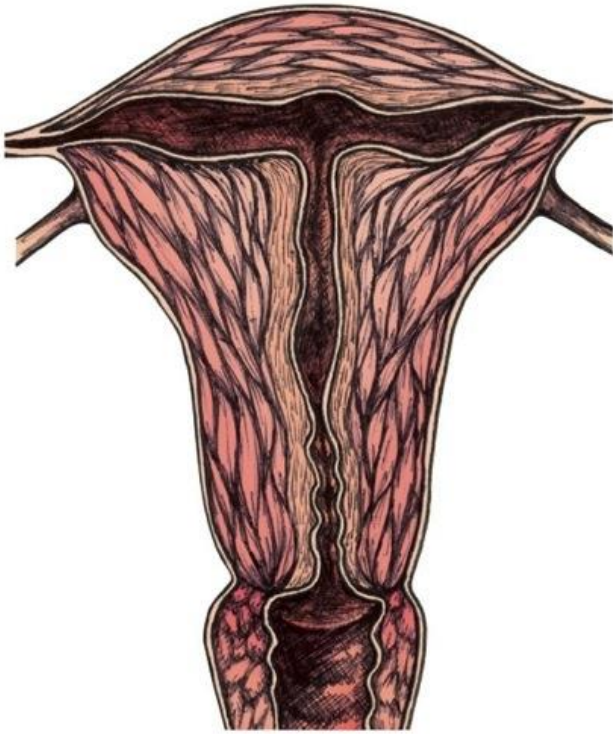
- L'utérus cloisonné est la plus fréquente des malformations d'origine müllériennes (55%)
  - L'utérus bicorne unicervical est bien moins fréquent (10%)
  - L'utérus bicorne bicervical est beaucoup plus rare (5%)
- Pour poser le diagnostic d' 1 utérus bicorne  
*Il faut donc avoir décrit au moins  
5 utérus cloisonnés !*



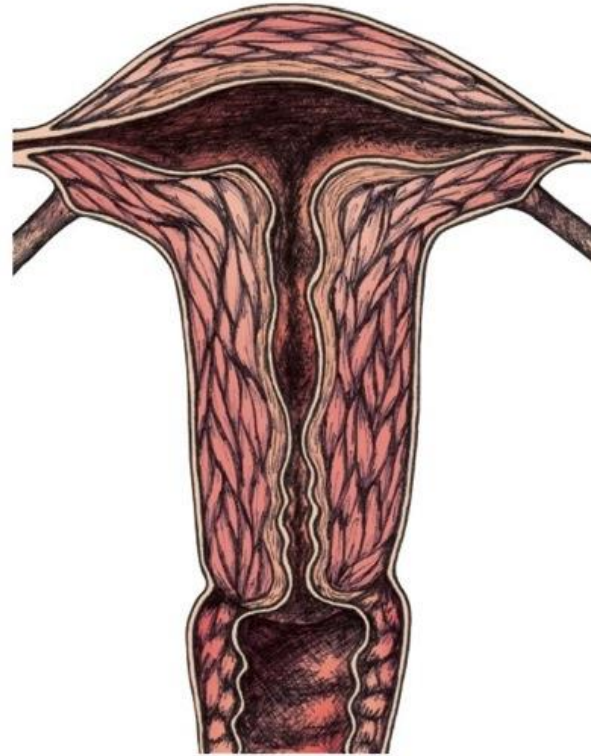
# Uterus DSB type VII



# Classe U1 / Uterus dysmorphique





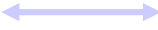

a - Forme en **T**

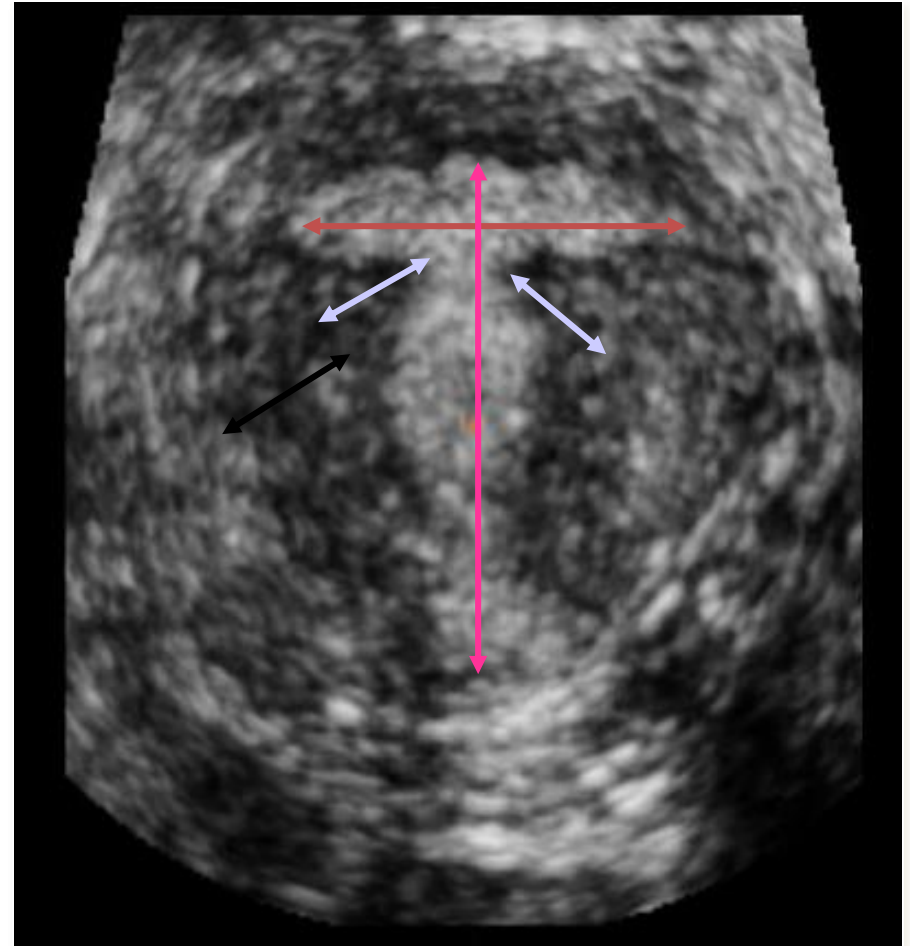


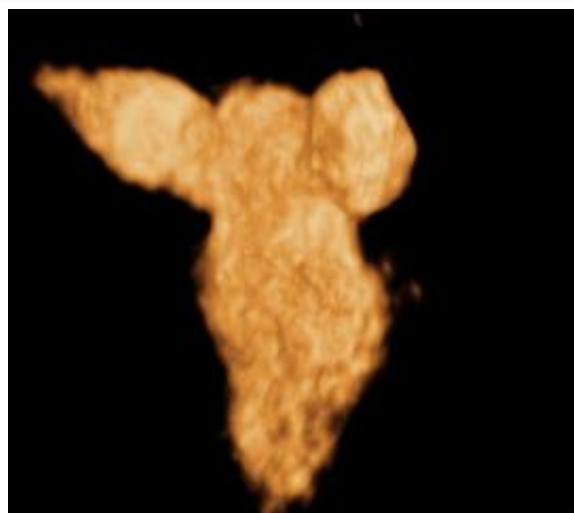
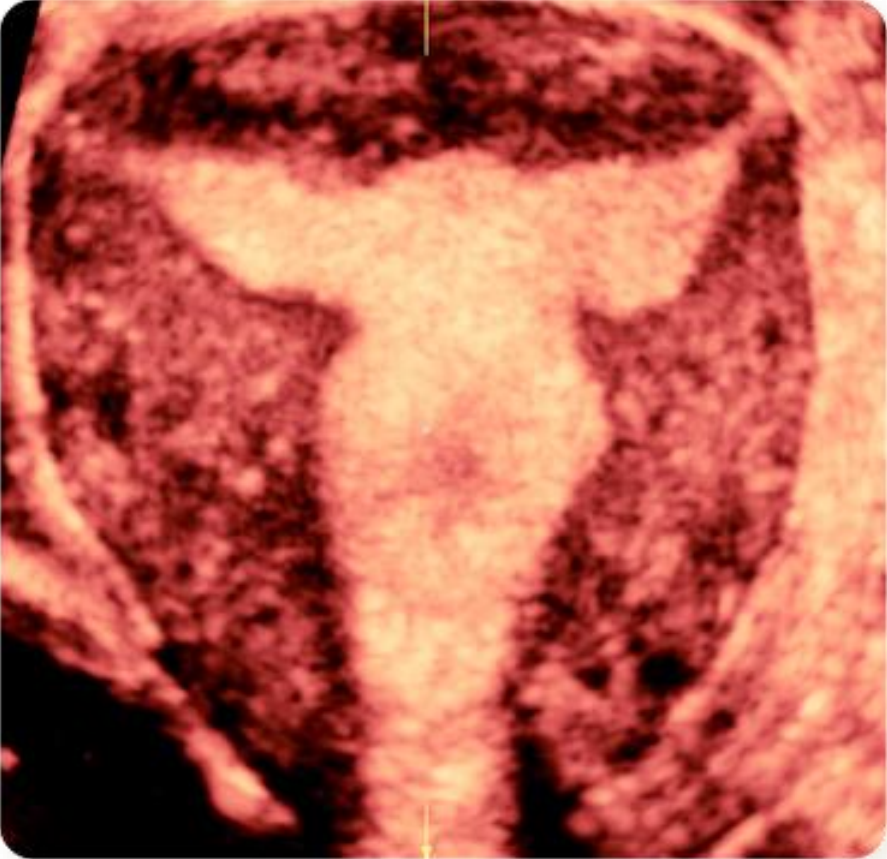
b - Forme infantile

c - Autres

# Essential preoperative measurements

- Distance between ostia 
- Length of the uterine cavity 
- Possible section in the width 
- Distance of security 



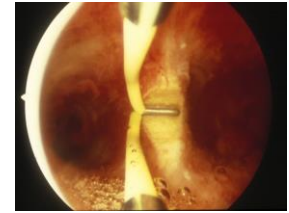


**DES Uterus**

# Reproductive performance



	Preoperative pregnancies	Postoperative pregnancies	
		Primary infertility	Secondary infertility
n	84	31	26
Miscarriage	61 (72.2%)	9 (29%)	7 (26.9%)
EP	14 (16.7%)	5 (16.1%)	0
Preterm D.	3 (3.3%) DCD	3 (17.1%)	5 (26.3%)
Term	0	14 (82.3%)	14 (73.7%)
alive	0	17 (54.8%)	19 (73%)
		36 (63% of deliveries) 36% of patients	



# SEPTA & INFERTILITY

- RCT

Live birth at 1 year

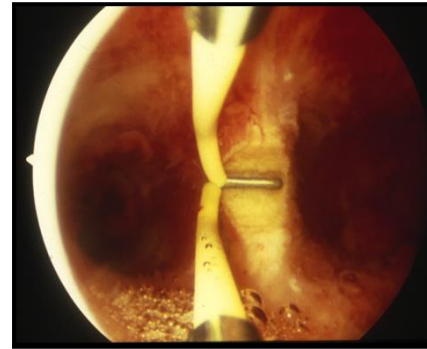
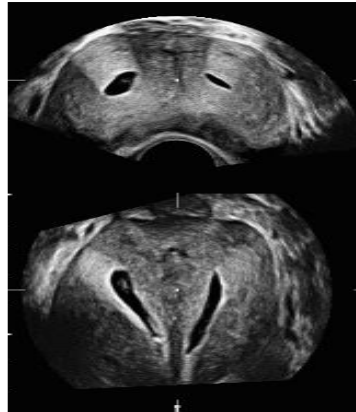
- Infertile patients 18.9%
- Infertile patients after septoplasty 34.1%

Mollo 2008

**Septoplasty, new treatment of infertility?**



# Fertility and Obstetric Outcome after Hysteroscopic Transection of the Uterine Septum



S. Bendifallah, E.Faivre , G. Legendre, X. Deffieux,  
**H. Fernandez**

From the Department of Obstetric, Gynecology and Reproductive Biology, Kremlin Bicêtre Hospital, University Paris-SUD 11, Kremlin Bicêtre, France

# Study design

- Retrospective observational single-center study
- 151 patients with septate uterus undergoing hysteroscopic between January 1999 and December 2009
- The subjects were divided into 3 groups
  - ✓ **Group 1**: 55 women with primary infertility of more than 3 years
  - ✓ **Group 2** : 63 women suffering from recurrent abortion.
  - ✓ **Group 3** : 33 women with at least one late abortion, or preterm delivery.
- Data were recorded prospectively for each patient , the outcome were supplemented by a telephone health-history questionnaire between 24 and 36 months after the surgery



# Main Outcome Measures

The number of first live births (FLB)

The number of miscarriage



Rates comparison before and after hysteroscopic metroplasty according to the group and the septum type

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# Results: Overall population

## Preoperative and Postoperative miscarriage and First Live Birth (FLB) Rates

	No. of Pts	Before septoplasty No. (%)	After septoplasty No. (%)	p
Overall population	151			
-FLB rate		27 (17.8%)	82 (54.3%)	< 0.001
-Miscarriage rate		74 (49%)	8 (5.2%)	< 0.001
Group 1	55			
-FLB rate		-	27 (49%)	-
-Miscarriage rate		-	0 (0)	-
<b>Group 2</b>	63			
-FLB rate		13 (20.6%)	34 (53.9%)	< 0.001
<b>-Miscarriage rate</b>		63 (100%)	8 (12.6%)	-
Group 3	33			
-FLB rate		14 (42.4%)	21 (63.6%)	0.13
-Miscarriage rate		11 (33.3%)	0 (0)	< 0.001

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# Cerclage for cervical incompetence

- 4 RCT for cerclage /expectative  
=>Prematurity rate
  - Population (hight & low risk)
  - Sonographic measure(<15mm, <25mm)
  - Term (14-27 SA)
  - Singleton & Twin

*Rust et al. AJOG 2000*  
*Althuisius et al. AJOG 2001*  
*To et al. Lancet 2004*  
*Berghella et al. AJOG 2004*

=> Generalisation ?

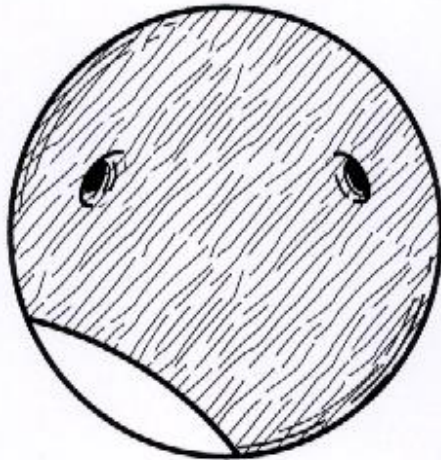
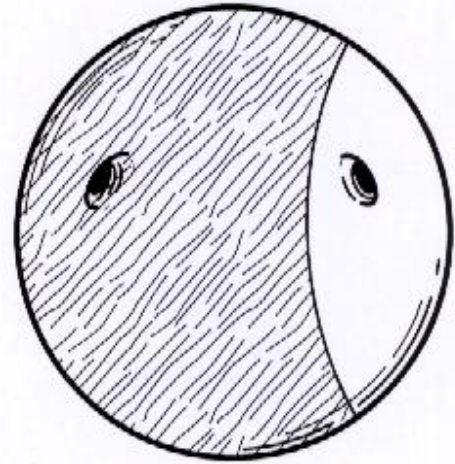
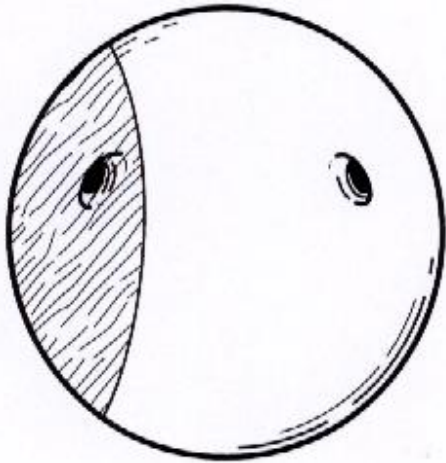
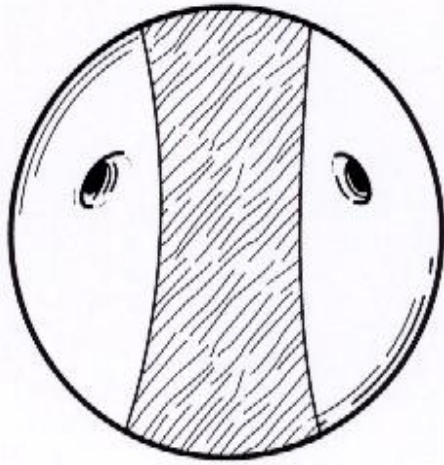
# **Synéchies & Infertilité**

Diagnostic et Traitement:  
Quel est le gold standard?



# Incidence des synéchies

- Cause la plus commune la dilatation et le curetage
  - entre 2 et 4 semaines après avortement
  - 1 ATCD 16%
  - 3 ATCD 32 %
  - > 3 ATCD > 50% (*Friedler 1993*)
- Symptômes cliniques :
  - Hypo ou aménorrhée 63%
  - Infertilité 43%
  - FCS à répétition (*Schenker 1996*)
- Asymptomatiques découvertes dans le cadre d'un bilan d'infertilité



## Uterine compression U-sutures in primary postpartum hemorrhage after Cesarean section: fertility preservation with a simple and effective technique

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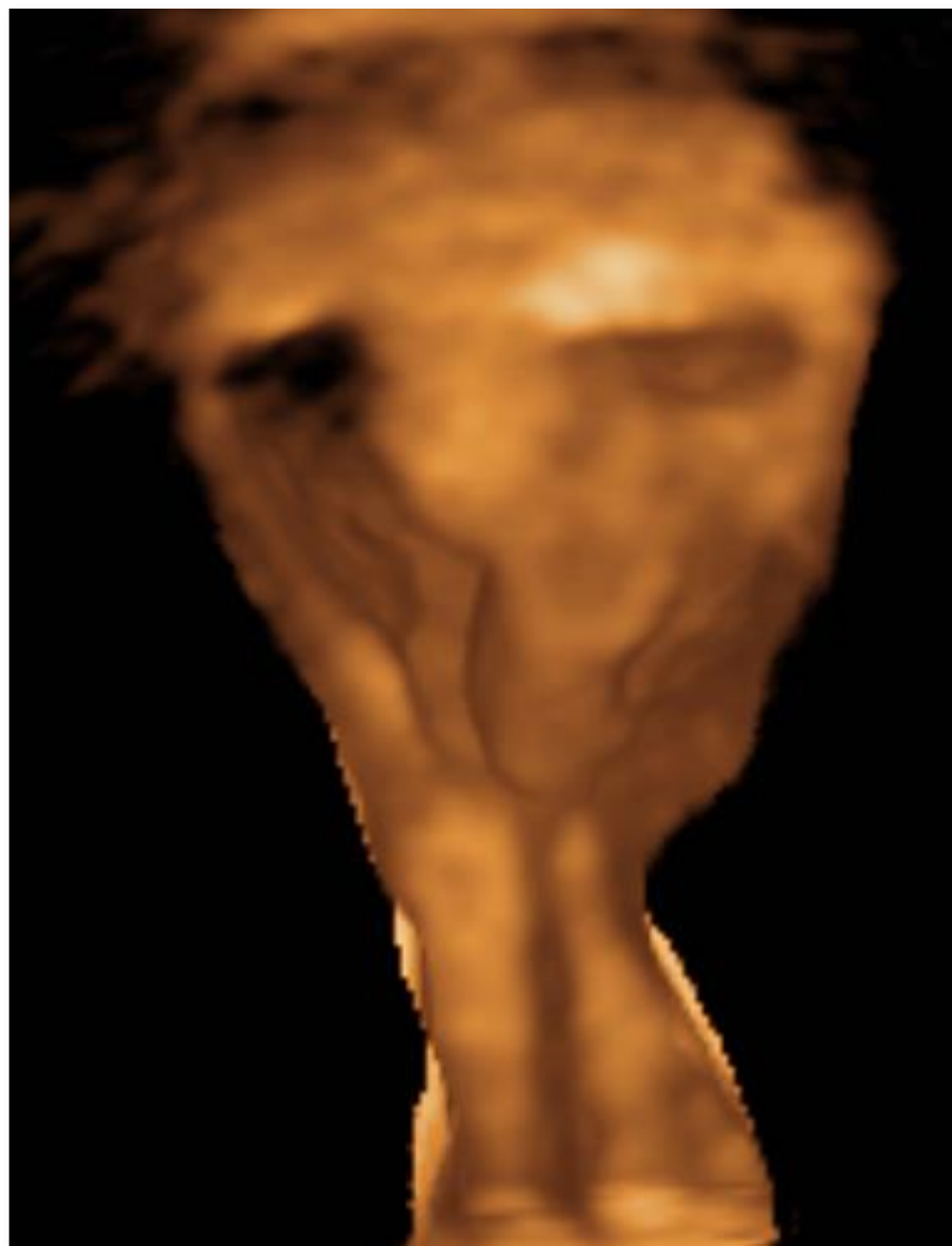
A. Hackethal<sup>1,\*</sup>, D. Brueggmann<sup>1</sup>, F. Oehmke<sup>1</sup>, H.-R. Tinneberg<sup>1</sup>,  
M.T. Zygmunt<sup>2</sup> and K. Muenstedt<sup>1</sup>

Human Reproduction Vol.23, No.1 pp. 74–79, 2008



Toutes les techniques donnent de 20 à 35% de synéchies. Il faut développer des stratégies de prise en charge

Poujade et al. BJGO 2011



## **Hysteroscopic Management of Residual Trophoblastic Tissue and Reproductive Outcome: A Pilot Study**

Erika Faivre, MD\*, Xavier Deffieux, MD, PhD, Chaouki Mrazguia, MD, Amélie Gervaise, MD, Aurélie Chauveaud-Lambling, MD, René Frydman, MD, PhD, and Hervé Fernandez, MD, PhD

*Journal of Minimally Invasive Gynecology, Vol 16, No 4, July/August 2009*

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- 50 patientes présentant une rétention trophoblastique
- Prise en charge par Hystérocopie Opératoire
- Pas d'électrocoagulation en première intention
  
- 76 % de taux de grossesse
- 9% de synéchies légères
  
- Taux de synéchies post-curetage pour rétention rapporté dans la littérature : 17-19%  
[Friedler , Golan, Römer]

# Qui traiter ?

- **Synéchies légères ou à minima**
  - Traitement possible par l' hystérocopie diagnostique
- **Synéchies modérées**
  - Emplacement
  - Traitement chirurgical
- **Synéchies sévères**
  - Souvent associées à des signes fonctionnels
  - Traitement chirurgical en plusieurs temps +++

# Monopolar vs bipolar surgery?

## **Uterine synechiae after bipolar hysteroscopic resection of submucosal myomas in patients with infertility**

Fertility and Sterility® Vol. 92, No. 5, November 2009

*Cyril Touboul, M.D.,<sup>a,b</sup> Hervé Fernandez, M.D.,<sup>a,b,c,d</sup> Xavier Deffieux, M.D., Ph.D.,<sup>a,b</sup>  
Richard Berry, M.D.,<sup>a,b</sup> René Frydman, M.D.,<sup>a,b,c,d</sup> and Amélie Gervaise, M.D.<sup>a,b</sup>*

- 53 patients
- **7,5% of synechiae at 2 months follow-up**
- 30% of synechiae with monopolar surgery[Taskin2001].

# Fertilité après traitement d'un Asherman's syndrome stade 3 & 4

Fernandez et al. 2009

HumReprod



# Delivery rate after adhesiolysis using various hysteroscopic methods

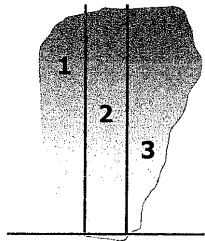
•Study	•Patients (n)	•Hysteroscopic method	•Pregnancy at term(%)
•Valle and Sciarra (1988)	•47	•Resectoscope	•15(31.9%)
•Chen et al (1997)	•23	•Resectoscope with Laminiria	•8(34.9%)
•Capella-Allouc et al (1999)	•28	•Monopolar Knife	•9(32.1)
•Coccia et al (2001)	•3	•Pressure lavage under ultrasound guidance	•1(33.3%)
•Konstantinos et al (2004)	•46	•Versapoint & Resectoscope	•20(43.5%)
•Fernandez(2009)	•71	•Versapoint & Resectoscope	•21(32.8%)

# Traitement des Polypes

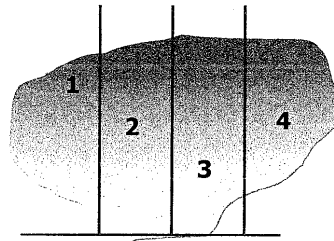
- Diagnostic correct
- Ablation Totale
- C'EST LA REFERENCE DU SEE & TREAT.
- Energie:
  - Mécanique
  - Bipolaire
  - Monopolaire?

# OFFICE POLYPECTOMY

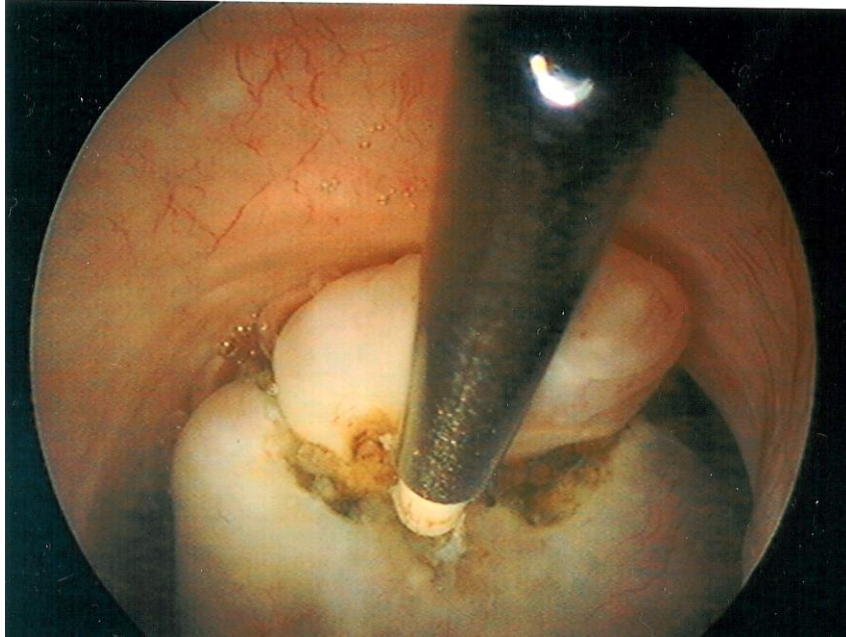
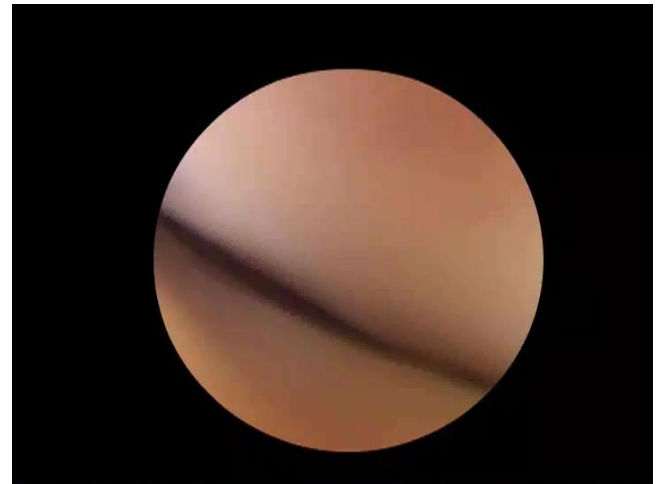
No dilatation, slice technic with 5Fr probe



Drop-like Polyp



Mushroom-like Polyp



# Quelles sont les limites du « See and Treat »?

- Formation des opérateurs
  - L'hystérocopie est de la CHIRURGIE
  - Place des simulateurs dans la formation
- Information des femmes: le BLOC n'est plus une obligation
- Limitations économiques

# Quelles sont les avantages du « See and Treat »?

- Pour les patientes
  - Diagnostic & Traitement en 1 fois
  - Pas d'anesthésie???
- Pour le chirurgien
  - Libération des contraintes de bloc opératoire
- Pour nos tutelles
  - Coût-Economique mais aucun dialogue...

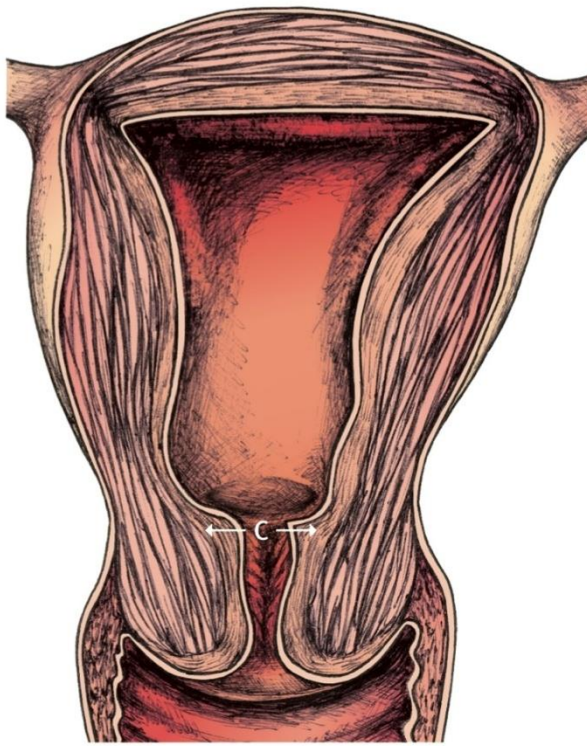


# ISTHMOCELES

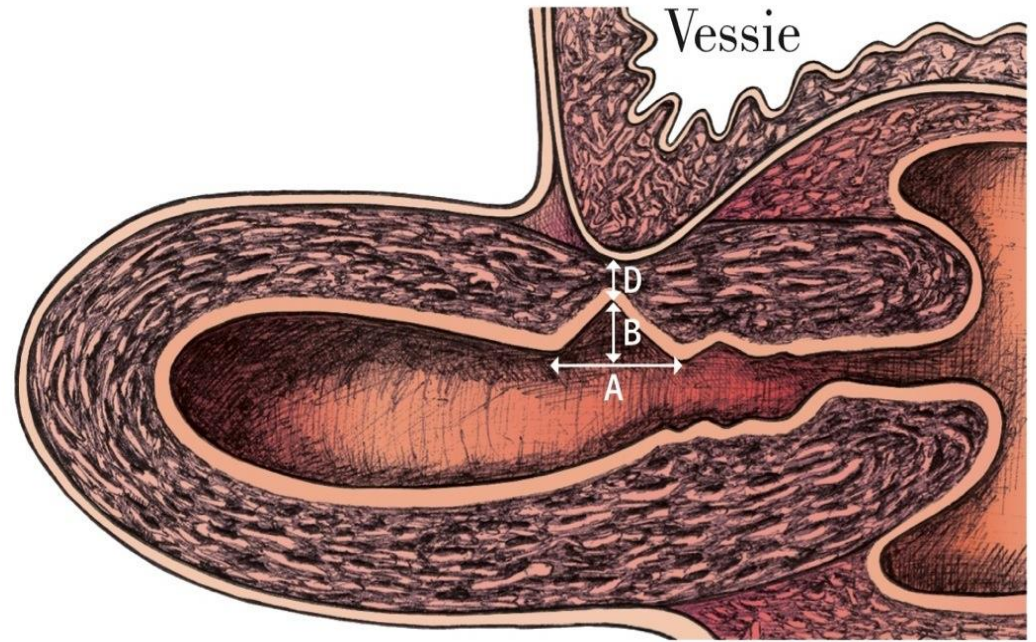
## DEFINITION

- ✓ **ISTHMOCELE**: déhiscence de la cicatrice d'hystérotomie après une ou plusieurs césariennes
- ✓ Décrite pour la 1ere fois par Morris en 1985 (analyse de pièces d'hystérectomie)
- ✓ Défaut de cicatrisation?





Coupe coronale  
interne



Coupe sagittale

A: largeur

B: profondeur

C: longueur

D: myomètre résiduel



# ISTHMOCELE



# APPORT DE L'HYSTEROSONOGRAPHIE POUR LE DIAGNOSTIC DES ISTHMOCELES



# Adénomyomectomie et Kystectomie

Plusieurs voies d'abord possibles

- Hystéroscopie sous contrôle écho+++
- Coelioscopie
- Laparotomie

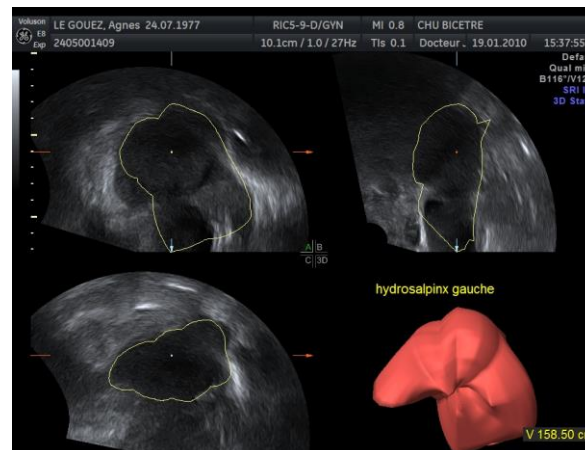
Chirurgie difficile comparativement  
à une myomectomie du fait de  
l'absence de plan de clivage



# Proximal occlusion of hydrosalpinges by Essure<sup>®</sup> before assisted reproduction techniques: a French survey.

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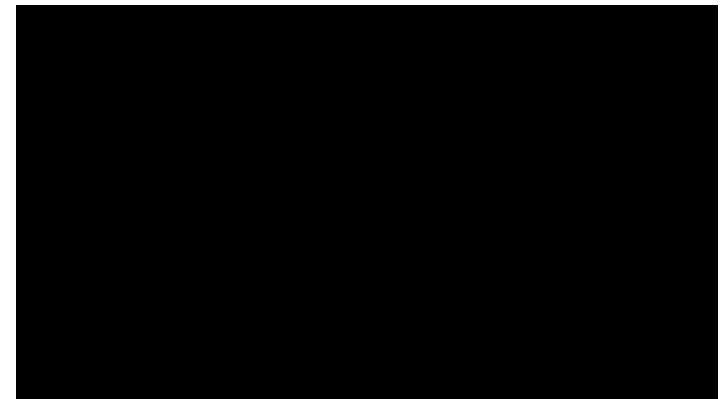
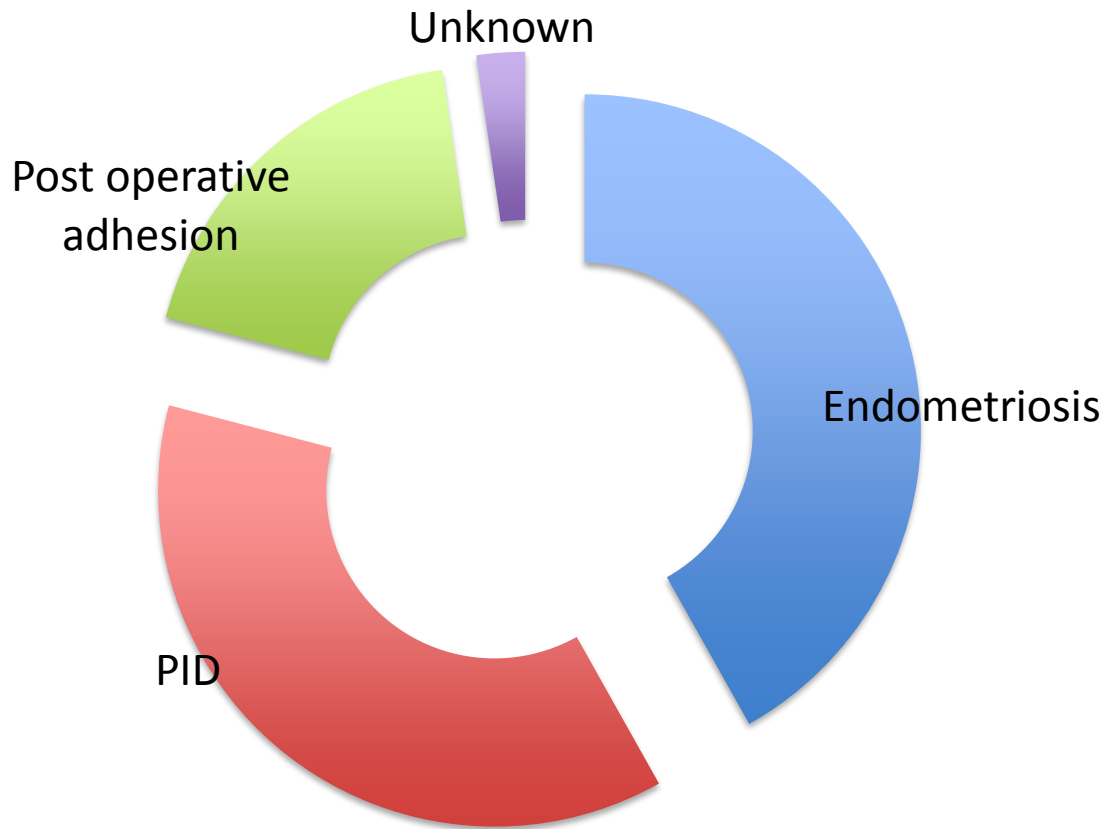


- Hydrosalpinx halves the pregnancy rate after IVF of women with tubal infertility
  - *Zeyneloglu HB & al., Fertil Steril 1998.*
  - *Camus E & al. Hum Reprod 1999.*
- Salpingectomy can correct this effect by increasing the likelihood of clinical pregnancy
  - *Strandell A & al. Hum Reprod 2000.*
  - *Déchaud H& al. Fertil Steril 1998.*
  - *Johnson N & al. Cochrane Database Syst. Rev. Online. 2010;*
  - *Kontoravdis A, Fertil Steril 2006*
  - *Moshin V & al. Hum Reprod 2006*

# Study Objectives

To study the feasibility and results (live-birth and complication rates) of the placement of Essure<sup>®</sup> microinserts before assisted reproduction technology (ART) treatment of women with hydrosalpinx.

# Etiology of tubal disease



# Results - ART

	Population of women with transfers
Implantation rate (% , n per embryo transferred)	29.3% (27/92)
Clinical pregnancy rate per embryo transfer (%)	40.7% (22/54)
Clinical pregnancy rate per patient (%)	65.5% (19/29)
Spontaneous abortion (% , n per clinical pregnancy)	31.8% (7/22)
Ectopic pregnancy (% , n per clinical pregnancy)	0% (0/22)
In utero fetal death (% , n per clinical pregnancy)	4.5% (1/22)
Live-birth rate per transfer (%)	25.9% (14/54)

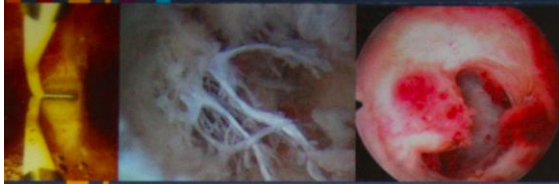


# Discussion

- **Strenghts**
  - Larger series published of the placement of Essure® microinserts before assisted reproduction technology (ART) treatment of women with hydrosalpinx.
- Our Study
  - Spontaneous abortion 31,8% (7/22)
  - Live birth 25,9%(14/54)
- *Mijatovic, Eur J Obstet Gynecol Reprod Biol 2012*
  - *Prospective study , N= 20*
  - Spontaneous abortion 33,3% (6/18)
  - Live birth 26.6% (12/45)

# Conclusion

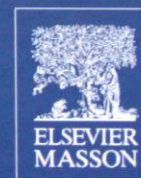
- Use of the Essure<sup>®</sup> system is an effective method for occlusion of hydrosalpinges.
- The live-birth rate after embryo transfer makes it the method of choice when laparoscopy should be avoided, with rates similar to those for salpingectomy or tubal ligation.

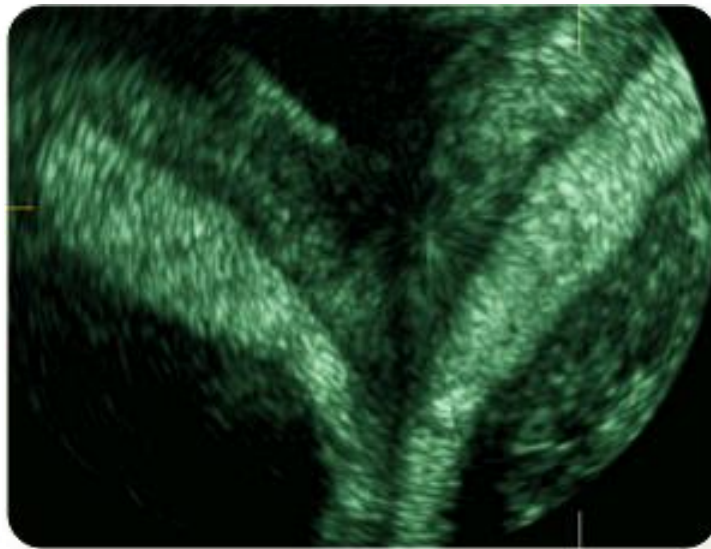


TECHNIQUES CHIRURGICALES  
gynécologie

# Hystéroscopie et fertioscopie

Hervé Fernandez  
Olivier Garbin  
Amélie Gervaise





**Merci pour  
votre  
attention**

