Infertile work up

- Basic test (spermogram, ovulation, hormonal test etc..)
- Pelvic evaluation: 4 parameters

<table>
<thead>
<tr>
<th>Parameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tubal patency</td>
</tr>
<tr>
<td>Uterine cavity</td>
</tr>
<tr>
<td>Tubo-peritoneal environment</td>
</tr>
<tr>
<td>Tubal mucosa</td>
</tr>
</tbody>
</table>

WHICH METHOD

Non invasive tools (HSG-USG)

- 30-35% false negative*
- 15% false positive*

- Compared with laparoscopy
  Kappa score* = 0.3 (except for hydrosalpinx = 0.6)


**EBM level Ia

**Kappa score: considered as good when above 0.75
WHICH METHOD
Invasive tool (Laparoscopy)

- Considered as the “gold standard”
- Risks*

- so rarely practised today leading to increase artificially the number of “unexplained infertility”
- IVF often practised without correct pelvic evaluation


EBM level Ib

fertiloscopy

- Hydropelviscopy
- Dye test
- Salpingoscopy
- Microsalpingoscopy
- Hysteroscopy

CRES 2002

fertiloscopy

- Local anesthesia
- No scar
- Safe: no pneumoperitoneum, no Trendelenburg position, no risk of vessel injury
- Short procedure (10’)
- Compared with laparoscopy=identical
  Kappa score between 0.75 and 0.92**

+ Adjunction of salpingo/microsalpingoscopy


**EBM level Ib
What is fertiloscopy?
Rationale for fertiloscopy

FLY study (Fertiloscopy versus Laparoscopy)
Prospective multicentric trial comparing fertiloscopy and laparoscopy on the same patient
Conclusion: “fertiloscopy should replace laparoscopy in infertile patients with no obvious pathology”

Watrelot et al. Human Reproduction 2003
Evidence base medicine: LEVEL 1b

RESULTS (1) salpingoscopy

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>normal</th>
<th>abnormal</th>
</tr>
</thead>
<tbody>
<tr>
<td>phimosis</td>
<td>25(5%)</td>
<td>12</td>
<td>17(68%)</td>
</tr>
<tr>
<td>hydrosalp.</td>
<td>6(1.2%)</td>
<td>1</td>
<td>5(83%)</td>
</tr>
<tr>
<td>adhesions</td>
<td>48(9.5%)</td>
<td>15</td>
<td>33(68%)</td>
</tr>
<tr>
<td>Endometri.</td>
<td>95(19%)</td>
<td>79</td>
<td>16(16%)</td>
</tr>
<tr>
<td>No pathology</td>
<td>326(65.2%)</td>
<td>299</td>
<td>27(5.2%)</td>
</tr>
<tr>
<td>total</td>
<td>500</td>
<td>98(19.6%)</td>
<td></td>
</tr>
</tbody>
</table>

A.WATRELOT CRES@-LYON
microsalpingoscopy

RATIONALE:

The more the nuclei are dye stained, the more damaged the mucosa is (Marconi 1999)

Two alternative strategies

- French
- American approach

Current french approach

strategy

HSG

Normal/doubtful

pathological

Fertiloscopy

Laparoscopy

Normal salpingoscopy

abnormal

Operative fertiloscopy

IUI

IVF
One stop clinic

Fertiloscopy ➔ Laparoscopy

Normal salpingoscopy ➔ abnormal Operative fertiloscopy

IUI ➔ IVF

Continuous serie

- June 1997 - December 2005
- N° patients = 1802
- Exclusion = 223 cases (live demonstration 101 and ovarian drilling 122)
- N = 1589 cases
Cancellation rate

- Vaginal examination: 91/1589 (5.7%) (recto-vaginal endometriosis, fixed retroverted uterus)

Complications

- Infection: 1
- Abnormal bleeding: 2 (0.1%)
- False route: 11 (0.7%)
- Rectal injury: 3 (0.2%)

- Never serious complication

- Cumulative series >20,000 cases
- Laparoscopy mortality: 1/12,000, morbidity 3.4/1000
strategy

HSG
pathological

Fertiloscopy
N=1498

Laparoscopy

Normal

abnormal

Operative fertiloscopy

IUI

IVF

Normal/sub normal fertiloscopy

- Normal findings = 518 (34.5%)

- Subtle lesions = 349 (23.2%)

- Minimal endometriosis = 139 (9.3%)

Total = 1006 (67.1%)
Abnormal fertiloscopic findings

\( n=482 \)

- **Endometriosis:**
  - mild = 79 (5.3%)
  - severe = 33 (2.2%)
  - Total endometriosis = 112 (7.4%)

- **Pelvic adhesions and tubal pathology:**
  - minimal = 104 (6.9%)
  - mild = 208 (13.8%)
  - severe = 58 (3.8%)
  - Total adhesions = 370 (25.6%)
Salpingoscopy and microsalpingoscopy

- N=1164 (for at least one tube)
- 1164/1232 (94.3%)

Normal microsalpingoscopy

Abnormal microsalpingoscopy
(nuclei dye stained by the methylene blue)

N=1164

- Fertiloscopy=normal
- Salpingoscopy=normal
- N=572

- Fertiloscopy=abnormal
- Salpingoscopy=normal
- N=261

- Fertiloscopy=normal
- Salpingoscopy=abnormal
- N=261

- Fertiloscopy=abnormal
- Salpingoscopy=abnormal
- N=202

- IUI IVF surgery

Follow up

- N=1164
- IUI ......572 (49.1%)
- surgery....261 (22.4%)
- IVF........331 (28.4%)
Pregnancy after 6 months

- Group 1 IUI........118 (20,6%)
- Group 2 surgery.. 92 (35,2%) ns
- Group 3 IVF...... 121(35,7%)ns
- Total............ 331 /1164 (28,4%)

Operative fertiloscopy

OVARIAN DRILLING (for infertile patients)

Criteriae of Rotterdam (hyperandrogenia,hirsutism,ultrasonography)
Evolution
- Wedge resection per laparotomy
- Laparoscopic wedge resection
- Laparoscopic ovarian drilling
- Fertiloscopic ovarian drilling

TECHNIQUE
- HYDROPELVISCOPY (step 1)
  - Visualization of ovarian ligament
  - Bilateral drilling (4-8 holes by side) using bipolar electrosurgery
  - Step 2 to 5
  - Saline solution is left in place
  - New option = ADEPT™

Ovarian drilling and fertiloscopy
- Fast
- Easy
- Less risky than other surgical method
- Ambulatory
- Check up at the same time
Strategy

- Diet
- Clomiphene citrate
- Metformin+FSH
- Drilling

Outcome predictive factors

- Poor responder:
  - BMI>35
  - hyperandrogenia
  - infertility>3 years

- Good responder
  - LH>10

S Amer, TC Li, WL Ledger Human Reprod 2004

Pro and cons?

<table>
<thead>
<tr>
<th>Gonadotrophin</th>
<th>Ovarian Drilling</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Advantages</strong></td>
<td>Non invasive</td>
</tr>
<tr>
<td></td>
<td>May be repeated</td>
</tr>
<tr>
<td><strong>Disadvantages</strong></td>
<td>Monitoring cost</td>
</tr>
<tr>
<td></td>
<td>Risk of OHSS</td>
</tr>
<tr>
<td></td>
<td>Risk of multiple pregnancy</td>
</tr>
</tbody>
</table>

- Mono-ovulation
- No multiple pregnancy
- Less miscarriages
- No OHSS
- Prolonged effect (>6 years)
- Cheap
- One step check up
- Risk of surgical procedure
- Very low with fertiloscopy
- Adhesions: peritoneal

- Risk of OHSS
- Risk of multiple pregnancy
Results

- N=80
- Follow-up=18 months (+/-6.4%)
- Ovulation: 73/80 (=91%)
- Cumulative PR:44/73 (=60%) 44/80(55%)
- Mean time :3,9 (1-11,8) months
- Outcome :8 miscarriages(18%) (no twins or ectopic)

Fernandez, Watrelot et al. AAGL journal 2004

"Piercing study"
(coordinator H Fernandez, 10 centres, 250 patients Metformin+IIU vs Fertiloscopic OD- )

Guidelines of HAS (Haute autorité de Santé 04/2008):
1. OD is an attractive alternative to FSH stimulation,
2. fertiloscopy is a mini-invasive option as effective as laparoscopy,
3. second OD may be performed if PCOS is recurrent after a first pregnancy

FERTILOSCOPY=first GYN NOTES PROCEDURE
Conclusions = take home messages

- Fertiloscopy is safe and reproducible
- Very well accepted by patient: No scar, no post operative pain, office procedure, strict local anaesthesia available
- Learning curve limited but necessary
- The Complication rate is very low and never serious
- Salpingoscopy is possible in a routine basis
- Abnormal salpingoscopy leads to IVF
- Endoscopy is mandatory to choose the best therapeutic option and avoid unnecessary IVF
- FERTILOSCOPY REDUCES THE TIME TO BECOME PREGNANT IF PRACTICED EARLY IN THE INFERTILE WORK UP

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Fertility Focus ltd. UK

thank you!