Septate uterus: Metroplasty
Ambulatory Hysteroscopy
and cold scissors

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# Congenital anomalies of the uterus

## Incidence

<table>
<thead>
<tr>
<th>Category</th>
<th>Incidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>5%</td>
</tr>
<tr>
<td>Fertile women</td>
<td>2-3%</td>
</tr>
<tr>
<td>Infertile women</td>
<td>3%</td>
</tr>
<tr>
<td>Women with recurrent miscarriage</td>
<td>5-10%</td>
</tr>
<tr>
<td>Women with late miscarriages and preterm deliveries</td>
<td>&gt;25%</td>
</tr>
</tbody>
</table>

Acién P, Hum Reprod 1997
Prospective multi-centre randomized clinical trial

Incidence of congenital malformation in infertility patients is significantly higher than in patients with AUB

Infertility

- Subtle lesions
- Cong. Malf.
- Necrotic tissue
- Adhesions
- Polyp

Abnormal uterine bleeding

- Subtle lesions
- Myoma
- Polyp

Incidence of congenital anomalies in 530 consecutive HSC in the LIFE institute

<table>
<thead>
<tr>
<th>Malformation</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uterus septus</td>
<td>44</td>
<td>63</td>
</tr>
<tr>
<td>T-Shaped</td>
<td>23</td>
<td>33</td>
</tr>
<tr>
<td>Uterus unicornis</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>70</td>
<td>100</td>
</tr>
</tbody>
</table>
Uterine Septum

- Lack of resorption of the midline septum. No major vascularisation should be expected.

- Insufficient fusion of the ducts. Possible strong vascularisation. Uterine outer anatomy?
Septate Uterus

Possible clinical manifestation?

- Reduced implantation rate
- Recurrent abortion
- Late abortion
- Partus prematurus
- Dystocia
### Uterine Septum and implantation after IVF

<table>
<thead>
<tr>
<th></th>
<th>uteroplasty</th>
<th>control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pregn. rate</td>
<td>20%</td>
<td>12.5%</td>
</tr>
<tr>
<td>Impl. Rate</td>
<td>10.5%</td>
<td>4.6%</td>
</tr>
</tbody>
</table>

Metroplasty significantly increases live birth rate in patients with recurrent miscarriage.

<table>
<thead>
<tr>
<th></th>
<th>Pre-operative</th>
<th>Post-operative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients</td>
<td>43</td>
<td>31</td>
</tr>
<tr>
<td>Pregnancies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• abortions</td>
<td>117</td>
<td>*5 (13.5%)</td>
</tr>
<tr>
<td>• abortions *104 (88.9%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• premature</td>
<td>6 (5.1%)</td>
<td>5 (13.5%)</td>
</tr>
<tr>
<td>• at term</td>
<td>7 (6.0%)</td>
<td>27 (73%)</td>
</tr>
<tr>
<td>• children alive</td>
<td>*12 (10.2%)</td>
<td>*32 (86.5%)</td>
</tr>
</tbody>
</table>

* $P_{value} < 0.001$
Uterine Septum and reproductive performance

Among the congenital uterine malformations, the septate uterus is associated to the highest rate of damage of the reproductive capability but there is no scientific evidence that the presence of a septum certainly reproductive problems.
One Stop Uterine diagnosis

Ultrasound
- Measure fundal myometrial thickness
- Identify double endometrial echo

Fluid Mini-Hysteroscopy
- Compartmentalisation of uterine cavity

Kontrast sonography
- Confirm cavity form and measure myometrial thickness?
## Diagnostic Procedure congenital malformation

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Image</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trans vaginal Ultrasound</td>
<td><img src="image1.png" alt="Trans vaginal Ultrasound" /></td>
</tr>
<tr>
<td>Fluid Mini Hysteroscopy</td>
<td><img src="image2.png" alt="Fluid Mini Hysteroscopy" /></td>
</tr>
<tr>
<td>Kontrast Sonography</td>
<td><img src="image3.png" alt="Kontrast Sonography" /></td>
</tr>
</tbody>
</table>
Differential Diagnosis septate uterus

Bicorne uterus

T shaped uterus
TVS: Bicornuate vs. Septate

- Orthogonal view along the long axis
- Straight line between the tubal ostia (1, 2) and apex of the fundal external contour (3)
- Bicornuate: (A) below the line or (B) up to 5 mm above
- Septate: more than 5 mm above (C)

Homer HA et al, Fertil Steril 2000
TVS: T shaped uterus versus septate

Ultrasound fundal myometrial thickness < 11 mm
T – Shaped uteri
Metroplasty, Scientific evidence?

Hysteroscopic resection of the septum improves the pregnancy rate of women with unexplained infertility: a prospective controlled trial.

Small uterine septum is an important risk variable for preterm birth.

Hysteroscopic metroplasty improves gestational outcome in women with recurrent spontaneous abortion.
### Hysteroscopic metroplasty

**When should we operate?**

<table>
<thead>
<tr>
<th>Situation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women with long-standing unexplained infertility</td>
</tr>
<tr>
<td>Recurrent miscarriage</td>
</tr>
<tr>
<td>Women &gt; 35 years of age and infertility problem</td>
</tr>
<tr>
<td>Women in whom assisted conception is being contemplated</td>
</tr>
</tbody>
</table>
Hysteroscopic metroplasty
How should we operate?

1. Partial septa: microscissor

2. Total or large septum:
   microscissor and bipolar needle or resectoscope

3. Diagnostic uncertain situations
   DD bicorn versus septum: Resectoscope under laparoscopic guidance.
   DD T shaped uterus – subseptus: microscissor
Ambulatory operative Hysteroscopy

4 important conditions

Ambulatory or office endoscopic unit

Watery (Saline) distension medium

Small diameter instrumentation with high optical quality

Mechanical and Bipolar Surgery with atraumatic technique
Ambulatory endoscopic – IVF unit
Watery distension medium

Grade A evidence
Less painful than CO₂

Hydro-flotation
subtle lesions !!

Saline for bipolar surgery
Small diameter instrumentation with high optical quality

Trophy Scope

New generation of hysteroscope with interesting characteristics

Gliding system provides Diagnostic (2.9 mm) and Operative (4.4 mm) possibilities in one instrument.
Characteristics of Trophy Scope

Always diagnostic procedure with 2,9 mm single flow compact scope.

New design of instrument and tip of the scope results in reduced trauma and smooth passage through cervical canal no sticking of tissue to the optic comfortable instrument handling.

Operative sheet in passive position does not interfere the diagnostic phase (2,9mm). In case of surgery, the operative sheet (4,4 mm) with double flow can be introduced without instrument removal.

Sterilized within 5 minutes: compatible with high level disinfectant “TRISTEL FUSE®“.
5 French Mechanical probes
5 French Bipolar probes
Uterine septum dissection using the cold scissors

Procedure

Measure fundal myometrial thickness with TVS

Put a reference mark 5 mm under the tubal ostia

Perform the septum incision unifying both reference marks

Measure fundal thickness which should be minimal 10 mm
CONTROL DEPTH OF DISSECTION

ULTRASOUND
- Measurements of fundal myometrial thickness

Myometrial vascular pattern in section plane
Direct visual control during dissection with microscissor

LAPAROSCOPY - HYSTEROscopy
Transillumination test
Uterine septum dissection using the cold scissors
Uterine septum dissection using the Bipolar needle
Uterine septum dissection using the Bipolar needle
Myometrial exploration using the cold scissors or bipolar needle

Subtle structural lesions of the cavity form

- Arcuate uterus
- T shaped uterus

Unclear clinical significance

Hysteroscopic exploration of the sub endometrial myometrium with formation of a pear like shaped cavity.

Controversial idea?
Arcuate Uterus

Uterus Arcuatus

Uterus Arcuatus
T Shaped or DES uterus
T Shaped or DES uterus
Exploration of fundal and lateral myometrium
Conclusions 1

Diagnostic fluid mini-hysteroscopy is an accurate diagnostic tool accessible to all Gynecologists (Grade A evidence).

The one stop uterine diagnosis combines the transvaginal ultrasound, fluid mini hysteroscopy and contrastsonography to improve the accuracy of uterine diagnosis.

Fluid mini hysteroscopy with concomitant ultrasound offers a new minimal invasive dimension to explore the sub endometrial myometrium in an out patient or ambulatory procedure.
Conclusions 2

See and threat can be done in an ambulatory environment under conscious sedation or local anaesthesia with the use of mechanical or bipolar energy.

In the field of reproductive medicine the indications for the minimal invasive hysteroscopic surgery are significant and increasing.

In our hands the dissection of uterine septa, correction of T shaped uterus, resection of myoma and treatment of Asherman syndrome is done in this set up.
More info on the training programmes in endoscopic surgery:

info@theacademyhouse.org
www.theacademyhouse.org