Does hysteroscopic metroplasty increase the ART success and reduce pregnancy failure rate?

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Septate uterus: facts

Relation with fertility

Relation with pregnancy outcome

Uterine malformations
Prevalence in different populations

Uterine anomalies diagnosis
Accuracy of the different methods

![High Accuracy Methods](image)


Uterine malformations: Prevalence

![Prevalence](image)


The prevalence of uterine malformations are higher in recurrent aborters

But it does not seem to be different in infertile patients…

Fertility: Is that the only truth? Are there other options?
**Endometrial pathology in infertile patients**

Campo et al, Hum Reprod Update, 5: 73-81, 1999

*Including cases of septate and DES uterus, uterus infantilis & unicornis
**Mucosal elevations, hypervascularization

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**Mullerian anomalies: Prevalence of different types**


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**Prevalence of different types in different populations (high accuracy studies)**

The more severe the degree of the anatomy defect the more the possibility to impair woman’s fertility…

Are there other aspects in the relation between uterine anomalies and fertility?

Infertile woman with septate uterus
No other infertility factor

Unexplained infertility(?)

or

“Explained” infertility(?)

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


Study design: case-control, prospective
Aim of the study: to assess the fecundity of infertile women after surgical correction of uterine septum

Cases: 44 patients with septate uterus and otherwise unexplained infertility
Controls: 132 patients with normal uterus and unexplained infertility
Intervention: hysteroscopic metroplasty
**Pregnancy & live birth rates after IVF/ET in patients with unexplained infertility**

[Graph showing pregnancy and live birth rates after IVF/ET in patients with unexplained infertility.]


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**Endometriosis: a misleading pathology in patients with septate uterus?**

[Graph showing incidence of endometriosis in patients with septate uterus.]

- Gurovich et al. 2010 (N=179)
- Gesinde et al. 1998 (N=40)
- Felder et al. 1993 (N=11)
- Engvist et al. 1986 (N=7)

Is there an association between septate uterus and endometriosis?


Design: Case-control study, retrospective

Aim: To determine the incidence of endometriosis in patients with septate uterus

Diagnostic method: hysteroscopy / laparoscopy

Cases: 120 patients (29.4 ± 4.7 years) with septate uterus
- 51 primary, 36 secondary infertility / 33 recurrent abortions

Controls: 486 consecutive infertile patients (30.8 ± 6.3 years) with normal uterus
- 252 primary & 234 secondary infertility
Incidence of endometriosis in patients with septate uterus compared to normal controls


Pregnancy outcome

What is the pregnancy outcome in patients with untreated uterine malformations (?)

Is there any difference between the first and the subsequent pregnancies (?)

Clinical implications of uterine malformations and hysteroscopic treatment results


Design: systematic review of retrospective cohort studies
Aim: to determine the pregnancy outcome in patients with untreated uterine malformations
Limitations: retrospective design of the studies included, not standard diagnostic method, no control group

Study population: women with untreated uterine malformations
Pregnancy outcome
Patients with untreated uterine malformations


Pregnancy outcome
Patients with untreated unicornuate uterus


Pregnancy outcome
Patients with untreated didelphys uterus

Pregnancy outcome
Patients with untreated bicornuate uterus


Pregnancy outcome
Patients with untreated septate uterus


Pregnancy outcome
Patients with untreated arcuate uterus

Reproductive Outcomes in Women With Congenital Uterine Anomalies Detected by Three-Dimensional Ultrasound Screening

Design: case-control study
Aim: to determine reproductive outcome in women with congenital uterine anomalies detected incidentally with 3D US
Exclusion criteria: history of infertility, recurrent miscarriage

Study population: 1083 women were screened
Cases: 72 arcuate uterus / 88 pregnancies
29 septate uterus / 57 pregnancies
5 Others (bicornuate)
Controls: 983 normally shaped cavity / 1965 pregnancies

Pregnancy outcome in patients with uterine anomalies compared to normal ones

Uterine anomalies and pregnancy outcome following resectoscope metroplasty

Design: case-control study
Aim: to determine reproductive outcome in women with reported congenital uterine anomalies at labor
Drawback: not standard method for diagnosis

Cases: 130 women with untreated malformed uterus / 246 pregnancies
91 pregnancies in women with septate uterus
Controls: 182 women with normal uterus / 379 pregnancies
Pregnancy outcome in patients with uterine anomalies compared to the normal ones


Pregnancy outcome
Patients with untreated uterine malformations

Acien, Hum Reprod, 8: 122-126, 1993

Pregnancy outcome
Patients with untreated complete septate uterus

Does hysteroscopic metroplasty restore prognosis?

- of women’s fertility
- of pregnancy outcome

Reproductive outcome after hysteroscopic septoplasty in patients with septate uterus – a retrospective cohort study and systematic review of the literature

Nouri et al, Reprod Biol Endocrinol, 8: 52, 2010

- Design: systematic review, retrospective cohort longitudinal studies included
- Aim: to determine the effect of hysteroscopic treatment on reproductive outcome
- Limitations: retrospective studies, no control group

Study population: 1501 mainly infertile women with septate uterus

Primary outcome: pregnancy and live birth rate after treatment

Pregnancy and live birth rates in treated infertile patients with septate uterus

Nouri et al, Reprod Biol Endocrinol, 8: 52, 2010
Clinical implications of uterine malformations and hysteroscopic treatment results

Design: systematic review, retrospective cohort longitudinal studies included
Aim: to determine the effect of hysteroscopic treatment on pregnancy outcome
Limitations: retrospective studies, women served as their own controls

Study population: 429 women with septate uterus
596 pregnancies before treatment
366 pregnancies after treatment

Hysteroscopic septum resection
Analysis of the patients by indication

Patients N=429

Recurrent abortions
Infertility
Others

Septate Uterus: pregnancy outcome before hysteroscopic septum resection

Patients N=292

Term deliveries
Preterm deliveries
Ectopic
Abortions

Septate Uterus: pregnancy outcome after hysteroscopic septum resection

Patients N=315
Pregnancies N=366


The outcome of singleton pregnancies after IVF/ICSI in women before and after hysteroscopic resection of a uterine septum compared to normal controls

Design: case-control study, retrospective
Aim: to determine abortion rates in women who conceived after IVF / ICSI – Singleton pregnancies

Cases: 31 with untreated septate (19 small / 12 large) uterus
106 with treated septate (57 small / 49 large) uterus
Controls: 274 consecutive (2 for each case) pregnancies

Abortion rates in pregnant women after IVF/ICSI with untreated & treated septate uterus
Conclusions

- Septate uterus is associated with impaired
  - fertility
  - pregnancy outcome
- Hysteroscopic metroplasty seems to be associated with an improvement
  - in the achievement of pregnancy
  - in pregnancy outcome