

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

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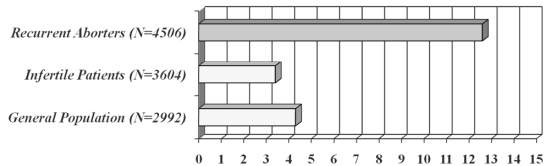


Septate uterus: facts

Relation with fertility

Relation with pregnancy outcome

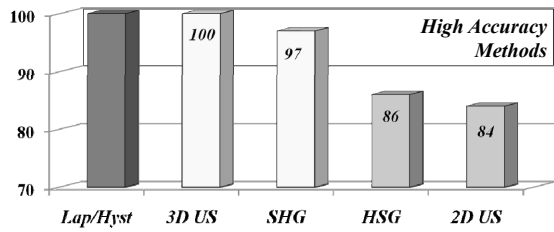
**Uterine malformations
Prevalence in different populations**



Grimbizis et al, Hum Reprod Update, 7: 1-14, 2001

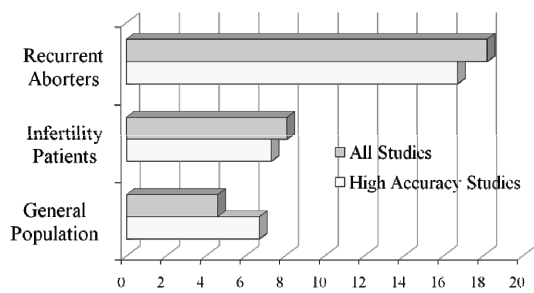
Uterine anomalies diagnosis Accuracy of the different methods

$Diagnostic\ Accuracy = \frac{TP+TN}{TP+FP+TN+FN}$



Saravelos et al, Hum Reprod Update, 14: 415-419, 2008

Uterine malformations: Prevalence



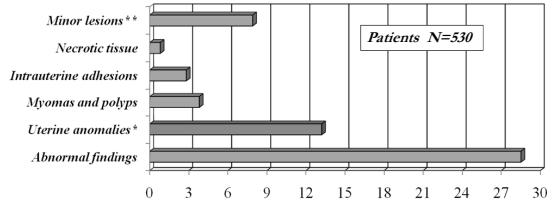
Saravelos et al, Hum Reprod Update, 14: 415-419, 2008

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?*

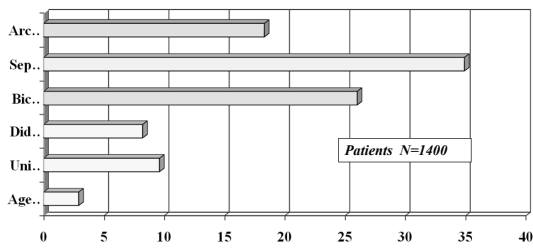
Endometrial pathology in infertile patients



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

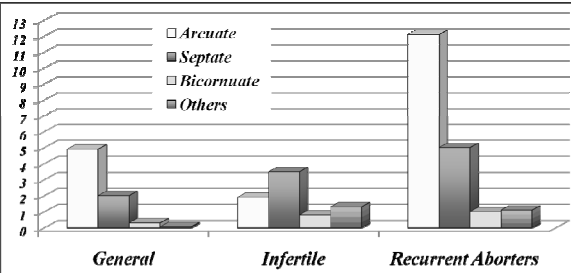
Campo et al, Hum Reprod Update, 5: 73-81, 1999

Mullerian anomalies: Prevalence of different types



Grimbizis et al, Hum Reprod Update, 7: 1-14, 2001

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



Saravelos et al, Hum Reprod Update, 14: 415-419, 2008

Septate uterus seems to be associated with infertility...

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

Mollo al, Fertil Steril, 91: 2628-2631, 2009

Study design: case-control, prospective

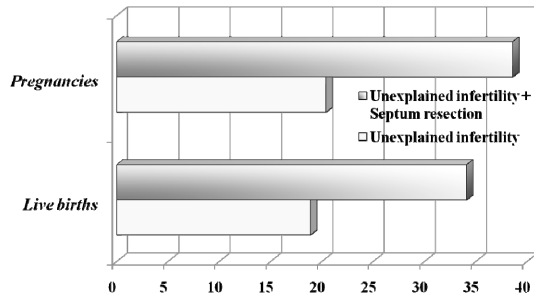
Aim of the study: to assess the fecundity of infertile women after surgical correction of uterine septum

Cases: 44 patients with septate uterus and otherwise unexplained infertility

Controls: 132 patients with normal uterus and unexplained infertility

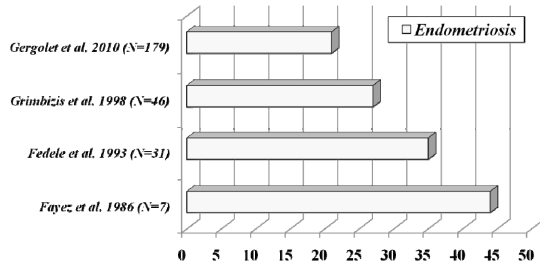
Intervention: hysteroscopic metroplasty

Pregnancy & live birth rates after IVF/ET in patients with unexplained infertility



Mollo et al, *Fertil Steril*, 91: 2628-2631, 2009

Endometriosis: a misleading pathology in patients with septate uterus?



Incidence of endometriosis in patients with septate uterus

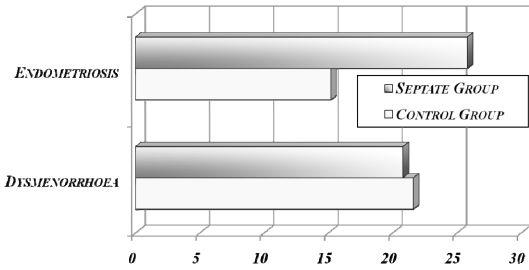
Is there an association between septate uterus and endometriosis?

Nawroth al, *Hum Reprod*, 21: 542-544, 2006

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



Nawroth et al, Hum Reprod, 21: 542-544, 2006

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

Grimbizis et al, Hum Reprod Update, 7: 1-14, 2001

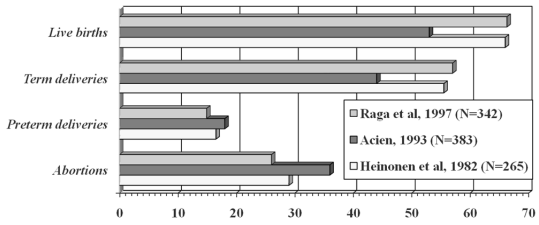
Design: systematic review of retrospective cohort studies

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

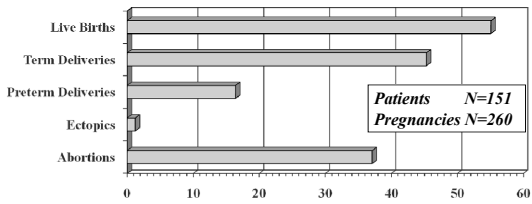
Study population: women with untreated uterine malformations

Pregnancy outcome
Patients with untreated uterine malformations



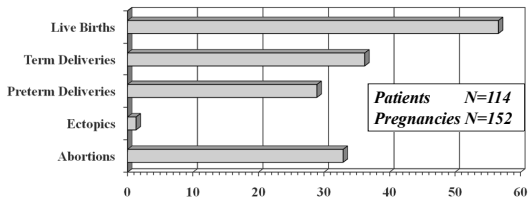
Grimbizis et al, Hum Reprod Update, 7: 1-14, 2001

Pregnancy outcome
Patients with untreated unicornuate uterus



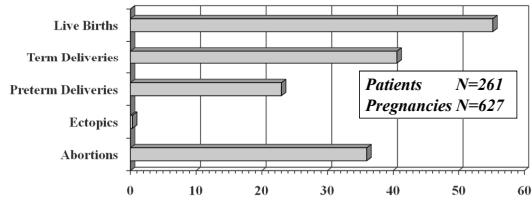
Grimbizis et al, Hum Reprod Update, 7: 1-14, 2001

Pregnancy outcome
Patients with untreated didelphys uterus



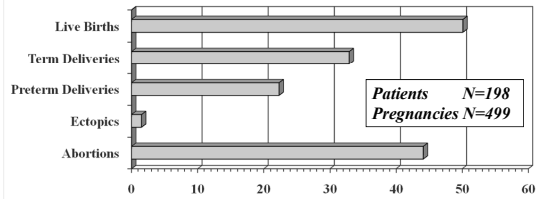
Grimbizis et al, Hum Reprod Update, 7: 1-14, 2001

Pregnancy outcome
Patients with untreated bicornuate uterus



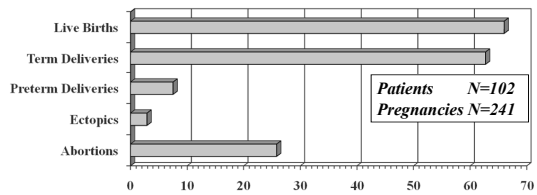
Grimbizis et al, Hum Reprod Update, 7: 1-14, 2001

Pregnancy outcome
Patients with untreated septate uterus



Grimbizis et al, Hum Reprod Update, 7: 1-14, 2001

Pregnancy outcome
Patients with untreated arcuate uterus



Grimbizis et al, Hum Reprod Update, 7: 1-14, 2001

Reproductive Outcomes in Women With Congenital Uterine Anomalies Detected by Three-Dimensional Ultrasound Screening
Woelfer et al, Obstet Gynaecol, 98: 1099-1103, 2001

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

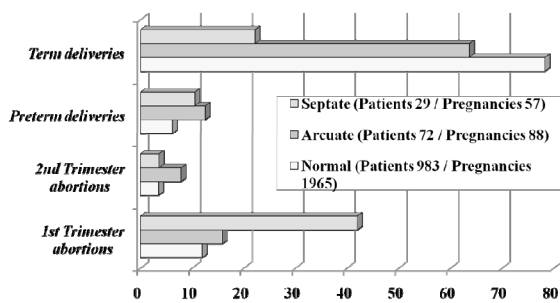
Cases: 72 arcuate uterus / 88 pregnancies

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



Woelfer et al, Obstet Gynaecol, 98: 1099-1103, 2001

Uterine anomalies and pregnancy outcome following resectoscope metroplasty
Zlopasa et al, Int J Obstet Gynaecol, 98: 129-133, 2007

Design: case-control study

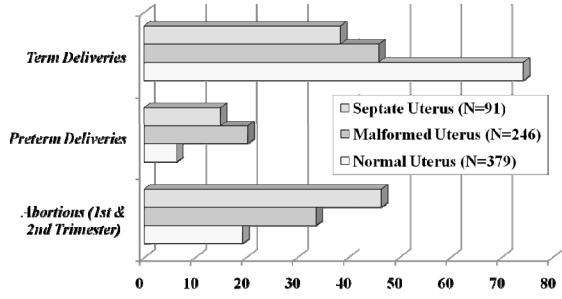
Aim: to determine reproductive outcome in women with reported congenital uterine anomalies at labor
Drawback: not standard method for diagnosis

Cases: 130 women with untreated malformed uterus / 246 pregnancies

91 pregnancies in women with septate uterus

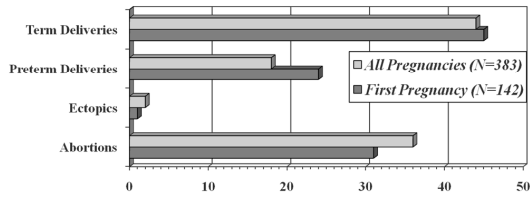
Controls: 182 women with normal uterus / 379 pregnancies

Pregnancy outcome in patients with uterine anomalies compared to the normal ones



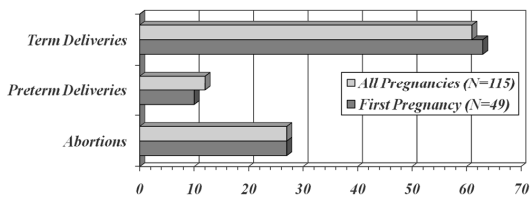
Zlopasa et al, *Int J Obstet Gynaecol*, 98: 129-133, 2007

Pregnancy outcome Patients with untreated uterine malformations



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

Pregnancy outcome Patients with untreated complete septate uterus



Heinonen, *Fertil Steril*, 85: 700-705, 2006

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 Endocrin, 8: 52, 2010

Design: systematic review, retrospective cohort longitudinal studies included

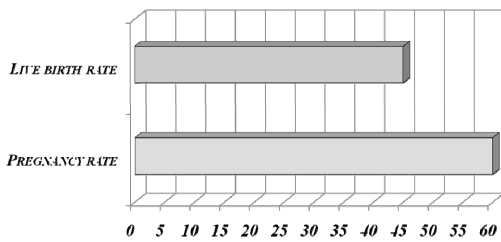
Aim: to determine the effect of hysteroscopic treatment on reproductive outcome

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



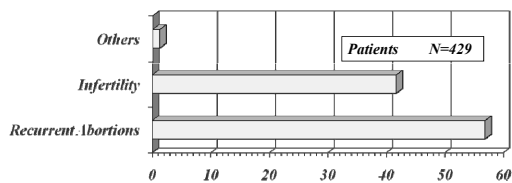
Nouri et al, Reprod Biol Endocrinol, 8: 52, 2010

Clinical implications of uterine malformations and hysteroscopic treatment results
Grimbizis et al, Hum Reprod Update, 7: 1-14, 2001

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

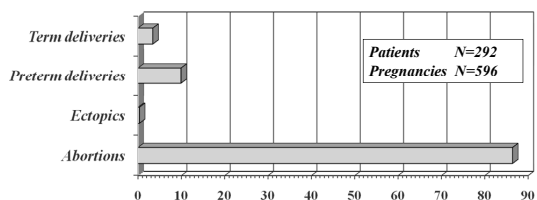
Study population: 429 women with septate uterus
 596 pregnancies before treatment
 366 pregnancies after treatment

Hysteroscopic septum resection
Analysis of the patients by indication



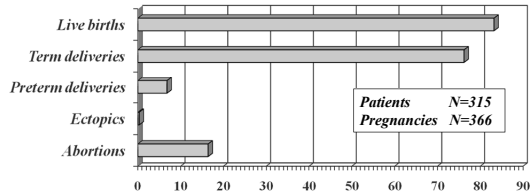
Grimbizis et al, Hum Reprod Update, 7: 1-14, 2001

Septate Uterus: pregnancy outcome before hysteroscopic septum resection



Grimbizis et al, Hum Reprod Update, 7: 1-14, 2001

Septate Uterus: pregnancy outcome after hysteroscopic septum resection



Grimbizis et al, Hum Reprod Update, 7: 1-14, 2001

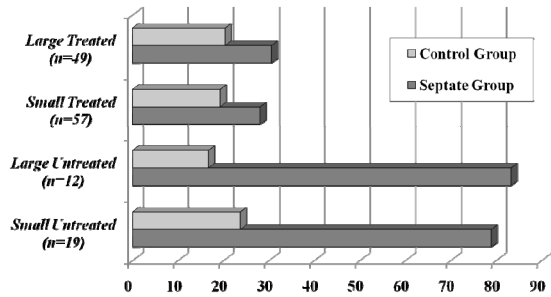
The outcome of singleton pregnancies after IVF/ICSI in women before and after hysteroscopic resection of a uterine septum compared to normal controls

Ban-Franquez et al, E J O G R B, 146: 184-187, 2009

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



Ban-Franquez et al, E J O G R B, 146: 184-187, 2009

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*
