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[Intervention Review]

Hysteroscopy for treating subfertility associated with suspected major uterine cavity abnormalities

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ABSTRACT

Background

Observational studies suggest higher pregnancy rates after the hysteroscopic removal of endometrial polyps, submucous fibroids, uterine septum or intrauterine adhesions, which are detectable in 10% to 15% of women seeking treatment for subfertility.

Objectives

To assess the effects of the hysteroscopic removal of endometrial polyps, submucous fibroids, uterine septum or intrauterine adhesions suspected on ultrasound, hysterosalpingography, diagnostic hysteroscopy or any combination of these methods in women with otherwise unexplained subfertility or prior to intrauterine insemination (IUI), in vitro fertilisation (IVF) or intracytoplasmic sperm injection (ICSI).

Search methods

We searched the Cochrane Menstrual Disorders and Subfertility Specialised Register (8 September 2014), the Cochrane Central Register of Controlled Trials (*The Cochrane Library* 2014, Issue 9), MEDLINE (1950 to 12 October 2014), EMBASE (inception to 12 October 2014), CINAHL (inception to 11 October 2014) and other electronic sources of trials including trial registers, sources of unpublished literature and reference lists. We handsearched the American Society for Reproductive Medicine (ASRM) conference abstracts and proceedings (from January 2013 to October 2014) and we contacted experts in the field.

Selection criteria

Randomised comparisons between operative hysteroscopy versus control in women with otherwise unexplained subfertility or undergoing IUI, IVF or ICSI and suspected major uterine cavity abnormalities diagnosed by ultrasonography, saline infusion/gel instillation sonography, hysterosalpingography, diagnostic hysteroscopy or any combination of these methods. Primary outcomes were live birth and hysteroscopy complications. Secondary outcomes were pregnancy and miscarriage.

Data collection and analysis

Two review authors independently assessed studies for inclusion and risk of bias, and extracted data. We contacted study authors for additional information.

Main results

We retrieved 12 randomised trials possibly addressing the research questions. Only two studies (309 women) met the inclusion criteria. Neither reported the primary outcomes of live birth or procedure related complications. In women with otherwise unexplained subfertility and submucous fibroids there was no conclusive evidence of a difference between the intervention group treated with hysteroscopic myomectomy and the control group having regular fertility-oriented intercourse during 12 months for the outcome of clinical pregnancy. A large clinical benefit with hysteroscopic myomectomy cannot be excluded: if 21% of women with fibroids achieve a clinical pregnancy having timed intercourse only, the evidence suggests that 39% of women (95% CI 21% to 58%) will achieve a successful outcome following the hysteroscopic removal of the fibroids (odds ratio (OR) 2.44, 95% confidence interval (CI) 0.97 to 6.17, $P = 0.06$, 94 women, *very low quality evidence*). There is no evidence of a difference between the comparison groups for the outcome of miscarriage (OR 0.58, 95% CI 0.12 to 2.85, $P = 0.50$, 30 clinical pregnancies in 94 women, *very low quality evidence*). The hysteroscopic removal of polyps prior to IUI can increase the chance of a clinical pregnancy compared to simple diagnostic hysteroscopy and polyp biopsy: if 28% of women achieve a clinical pregnancy with a simple diagnostic hysteroscopy, the evidence suggests that 63% of women (95% CI 50% to 76%) will achieve a clinical pregnancy after the hysteroscopic removal of the endometrial polyps (OR 4.41, 95% CI 2.45 to 7.96, $P < 0.00001$, 204 women, *moderate quality evidence*).

Authors' conclusions

A large benefit with the hysteroscopic removal of submucous fibroids for improving the chance of clinical pregnancy in women with otherwise unexplained subfertility cannot be excluded. The hysteroscopic removal of endometrial polyps suspected on ultrasound in women prior to IUI may increase the clinical pregnancy rate. More randomised studies are needed to substantiate the effectiveness of the hysteroscopic removal of suspected endometrial polyps, submucous fibroids, uterine septum or intrauterine adhesions in women with unexplained subfertility or prior to IUI, IVF or ICSI.

PLAIN LANGUAGE SUMMARY

Hysteroscopy for treating suspected abnormalities of the cavity of the womb in women having difficulty becoming pregnant

Review question

Cochrane authors reviewed the evidence about the effect of the hysteroscopic treatment of suspected abnormalities of the cavity of the womb in women having difficulty becoming pregnant.

Background

Human life starts when a fertilised egg has successfully implanted in the inner layer of the cavity of the womb. It is believed that abnormalities originating from this site, such as polyps, fibroids, septa or adhesions, may disturb this important event. The removal of these abnormalities by doing a hysteroscopy using a very small diameter inspecting device might therefore increase the chance of becoming pregnant either spontaneously or after specialised fertility treatment, such as insemination or in vitro fertilisation.

Study characteristics

We found only two studies in 309 women. The first study compared the removal of fibroids versus no removal in 94 women wishing to become pregnant from January 1998 until April 2005. The second study compared the removal of polyps versus simple hysteroscopy only in 215 women before insemination with husband's sperm from January 2000 to February 2004. The evidence is current to September 2014. No study reported funding sources.

Key results

None of the studies reported live birth.

The study on the removal of fibroids in women with unexplained infertility suggests does not exclude a higher chance of conceiving after surgery compared to regular sexual intercourse for 12 months. However uncertainty remains because the number of women (94) and the number of pregnancies (30) are too small for any differences between both comparison groups to reach statistical significance. If 21% of women with fibroids achieve a pregnancy having timed intercourse only, the evidence suggests that between 21% to 58% of women will achieve a successful outcome following the hysteroscopic removal of the fibroids.

The second study on the hysteroscopic removal of polyps supports a benefit with the hysteroscopic removal of polyps. If 28% of women become pregnant in the control group, the evidence suggests that between 50% to 76% of women will become pregnant after the removal of the endometrial polyps

No study reported data on adverse procedure related events.

More studies are needed before hysteroscopy can be proposed as a fertility-enhancing procedure in the general population of women having difficulty becoming pregnant.

Quality of the evidence

The quality of the evidence on fibroids is very low: there was only one poorly conducted study lacking sufficient data.

The quality of the evidence on polyps is moderate: there were issues with selective reporting of outcomes.