

# FERTILITY ENHANCING SURGERY - A BOON FOR COUPLES WITH INFERTILITY!

**B**eginning a family is considered a natural progression for married couples. They expect to conceive naturally when the time is right. However, many couples are faced with struggle and disappointment when they are unable to conceive a child. Infertility can have a severe impact on self-esteem, cause social stigma, marital discord and even lead to depression.

While many couples seek help early, others take time to get the required help due to inhibitions and lack of awareness. They only approach a fertility center when the pressure to have a child gets out of hand. If you know someone facing difficulties in conceiving, after over a year of trying, it might be time to consult a fertility specialist and have an assessment done. However, if the woman is over 35, evaluation should begin after 6 months.

## MEDICAL ADVANCEMENTS TO IMPROVE INFERTILITY

Significant advances in the diagnosis and treatment of reproductive disorders over the past decade, have resulted in the diagnosis and treatment of approximately 80% of infertility cases.

Advanced procedures like Hysteroscopy and Laparoscopy help to tackle various issues that hamper fertility. They play a key role in the diagnosis and treatment of infertility today and hence called Fertility Enhancing Surgeries.

## EVERYTHING YOU NEED TO KNOW ABOUT GYNAECOLOGICAL LAPAROSCOPY

Laparoscopy is a type of surgical procedure done to assess the abdominal and pelvic organs without making large incisions in the abdomen. Since the incision is very small, it is also called key-hole surgery or minimally invasive surgery (MIS).

A small incision of 0.5 cm to 1 cm is made at, or just above the navel. Through this incision a long tube called telescope is passed into the abdomen. This telescope will be attached to a camera and a monitor. With the help of this system, the internal organs are visualized.

Among infertile couples, Laparoscopy is performed in cases of unexplained fertility, disorders of uterus, ovaries or fallopian tube, Adenomyosis, Endometriosis, Fibroids, PCOS, Endometrial Polyps and other conditions.

## UNEXPLAINED INFERTILITY

Approximately 30% of infertility is due to female factors and another 30% results from the male partner. Sometimes infertility issues stem from both partners and neither can be blamed. Couples unable to conceive are initially advised standard tests like semen analysis, assessment of egg release, imaging test for patency of the fallopian tube, ultrasound or MRI to evaluate reproductive organs. In 15-30% of cases infertility remains unexplained after thorough evaluation of the couple. Laparoscopy is performed in such cases of unexplained infertility as it gives the advantage of direct visualization of the uterus, ovaries, fallopian tubes and other pelvic organs.

Laparoscopy can help diagnose and rectify conditions such as pelvic adhesion or surface endometriosis. It helps reduce pelvic pain and improves the functioning of the fallopian tubes, thereby increasing possibility of conceiving.

Endometriosis is a disorder in which tissue similar to the tissue that forms the lining of the uterus, grows outside the uterine cavity. Inflammation from endometriosis may damage the sperm or egg or interfere with their movement through the fallopian tubes and uterus. In severe cases, the fallopian tubes may be blocked by adhesions or scar tissue. Laparoscopic resection or ablation of these endometrial implants and removal of adhesion tissue enhances the possibility of conceiving.

When an ultrasound test detects disorders due to uterine causes like fibroids or adenomyosis, ovarian causes like endometriosis and PCOS or fallopian tube causes like tubal blockage and hydrosalpinx, operative laparoscopy is performed.

## FIBROIDS

Fibroids are non-cancerous growths which are typically detected during the routine ultrasound done for infertility assessment. Although approximately 75% of fibroids are asymptomatic, they can cause menstrual abnormalities (excessive and irregular bleeding), repeated abortions, periods pain / pelvic pain, infertility, constipation and retention of urine.

The location of the fibroid may play an important role in determining infertility. For instance, fibroids present close to the tubal opening cause tubal obstruction. While



submucosal fibroids are present inside the uterine cavity, the fibroids present in the uterine musculature are called intramural fibroids. Subserosal fibroids present on outer surface of the uterus, can cause distortion and enlargement of the uterine cavity, thereby impacting implantation and growth of the embryo.

Fibroids can also disturb blood supply and cause inflammation in the endometrium leading to implantation failure. They can also cause irregular uterine contraction and interfere with sperm and ovum transport.

The size of the fibroid may represent another important prognostic factor. As no long-term medical treatment has been reported for fibroids, myomectomy is recommended for fibroids >5 cm in diameter.

Myomectomy is a surgical method to remove fibroids. It is performed through laparoscopy or hysteroscope based on size and location of fibroid. While, submucosal fibroids require hysteroscopic approach for myomectomy, intramural and subserosal requires laparoscopic approach. Myomectomy helps preserve the uterus and its reproductive potential and approximately 50% of women with infertility and fibroids become pregnant after myomectomy.

## ADENOMYOSIS

Adenomyosis is a condition where the Endometrium grows into the muscle layer of the uterus. It causes Dysmenorrhea (painful periods) and infertility.

Uterus and fallopian tube contractions help the sperm meet the egg in the fallopian tube. In adenomyosis, there is disruption of these good contractions. Further, during embryo implantation, adenomyosis causes increased irregular contraction in the uterus, thereby making it unfavourable for the embryo to implant.

The surgical removal of Adenomyosis through Laparoscopic approach is called Adeno-Myomectomy. The procedure helps to improve fertility outcomes.

## ENDOMETRIOSIS

Endometriosis affects 1 in 10 women during their reproductive years and commonly manifests with lower abdominal pain before/during/ after menstruation, during ovulation, while passing motions, while passing urine, during or after sexual intercourse. Other symptoms include diarrhoea, constipation, abdominal bloating during menstruation and heavy or irregular bleeding during periods.

Endometriosis causes adhesions in the pelvic cavity, which disturb the functioning of the fallopian tube and disrupt the transportation of the egg and sperm. It also alters hormonal functions, thereby affecting embryo implantation.

Medical therapy alone is not effective in the long term management of Endometriomas >4 cm diameter. Laparoscopic Endometriotic Cystectomy is a surgical procedure done to remove adhesions due to Endometriosis, thereby enhancing fertility.

## PCOS

PCOS (Polycystic ovarian syndrome) is characterized by chronic anovulation (no release of egg/ ovulation) and Hyperandrogenism. Although fertility medications help in the release of eggs and increase chances of pregnancy, they don't work for all women.

Ovarian drilling is a surgical procedure done through laparoscopy, which is recommended for women who have no positive outcome post medication.

## OTHER GYNAECOLOGICAL LAPAROSCOPIC PROCEDURES

**Fallopian Tube Recanalization**  
Tubal sterilization is a popular method of permanent birth control. For women who want to reverse tubal sterilization and restore their fertility, tubal recanalization is performed laparoscopically.

**Hydrosalpinx**  
Hydrosalpinx occurs when there is collection of secretions/fluid in one or both fallopian tubes. When the far end of the tube gets blocked, the secretion from the fallopian tube gets accumulated causing it to distend and enlarge. The uterus end of the fallopian tube remains open, causing intermittent discharge of fluid into the uterine cavity which can be toxic to the embryo or can mechanical flush or sweep away the embryo thus preventing implantation and leading to infertility.

To improve fertility, Salpingectomy involving complete removal of the tube(s) is done. Further tubal detachment is performed to disconnect the tube from the uterus.

## EVERYTHING YOU NEED TO KNOW ABOUT HYSTEROSCOPY

Hysteroscopy is recommended for diagnostic or operative purposes and often done in a single sitting. This ensures that when Hysteroscopy is done for diagnostic purpose, if the need for surgery arises, it can be converted into operative hysteroscopy in the same sitting.

The procedure allows doctors to look inside the uterine cavity using a hysteroscope (a thin long tube), which is passed inside the uterus through the vagina. The camera is connected to a TV screen or monitor. A distension media (liquid or gas) is used to distend the uterine cavity and provide space and vision for the surgery. The instruments are passed through the hysteroscope and the surgical procedures are performed.

Hysteroscopic surgery for infertility is done for conditions like endometrial polyps, submucosal fibroids, Asherman's Syndrome etc.

**Endometrial Polyps**  
Endometrial polyps involve overgrowth of cell lining in the endometrium. Although mostly asymptomatic, it can cause intermenstrual bleeding and prolonged bleeding during periods.

Hysteroscopic removal of endometrial / uterine polyps is recommended.

**Submucosal Fibroid**  
Submucosal fibroids are removed with through Hysteroscopic Myomectomy, to enhance fertility rates and prevent repeated miscarriages and preterm labour.

**Asherman's Syndrome**  
Asherman's Syndrome or uterine synechiae are adhesions formed inside the uterine cavity, leading to decreased flow during periods and absence of periods. It also causes infertility, as the adhesions prevent healthy endometrium from being formed, hampering implantation of the embryo. Hysteroscopy helps locate and remove adhesions.

**Division of intrauterine septum**  
Uterine septum is a congenital anomaly, where the uterine cavity is divided longitudinally with a septum. This can cause infertility, miscarriage, preterm labour and malpresentation of foetus during pregnancy. Uterine septum can be resected with Hysteroscopy.

**Fallopian Tubes Cannulation**  
Blocks in the proximal part of fallopian tube near the uterine cavity, can hamper the transportation of sperm leading to infertility. This blockage can be removed by a procedure called fallopian tube cannulation which requires both hysteroscopy and laparoscopy.

## INCREASED SAFETY AND EFFICIENCY

The success of infertility enhancing surgery depends on the expertise of the surgeon and advanced instruments used. Rapid technological advances and higher-quality imaging have allowed surgeons to treat extensive and complicated diseases through laparoscopic procedures with least complications. Newly developed vessel sealing devices driven by bipolar diathermy and ultrasonic technology, decreases operative time, reduces post-operative pain and ensures faster recovery.

As these procedures can be complicated, patients need to consult with doctors who can explain the process comprehensively, while offering dedicated care.

For more details, contact:  
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