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Guru Hospital
REACHING THE UNREACHED
உன்னால் முடியும்

Guru Express

Medical Journal

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IVF & ICSI

Become a Mother with our Advanced Infertility Care

EDITORIAL

Infertility is "a disease of the reproductive system defined by the failure to achieve a clinical pregnancy after 12 months after marrieg. According to World Health Organization estimate the overall prevalence of primary infertility in India is between 3.9 to 16.8%. While female factor accounts for 40-50% of cases, male factor is on the rise, with 30-40%. Some of the lifestyle factors leading to infertility are increasing marital age, rising alcohol and tobacco consumption and obesity. Clinical factors are increasing prevalence of medical conditions such as PCOS, endometrial tuberculosis and STIs (states Inito study).

The treatment options for infertility will depend on the cause of your infertility. Lifestyle changes, medication, surgery, or other approaches may be recommended. Recent trends in infertility care has improved vastly and rapidly. Thanks to technology, there are lots of new ways to help people with all kinds of fertility issues. The options that are best for you depend on your personal situation and what's causing your infertility. Sometimes only one person needs treatment, other times both partners will use a combination of treatments together. Fertility treatments often include medications that help with hormones and ovulation, sometimes combined with minor surgical procedures.

We at Guru hospitals, Madurai have always been the front runner in providing quality infertility care at its highest level, We introduced the first infertility care center for south Tamil Nadu headed by Dr. B. Kalpana one of our proprietors and the only qualified infertility export in the region at that time. We are proud to say that we have inspired many organizations and healthcare providers to take infertility care seriously. We also have inspired many budding Doctors and fellow practitioners to take up infertility care as their full time profession. Being a front runner always gives us an advantage, We have state of the art modular operation theater (OT) to preform all procedures inducing critical care procedures with easy along with all the advanced and up to date biomedical instruments for infertility care which is in par with international standards

Till date we at Guru hospitals, Madurai have performed more than 1,00,000 IUI procedures , 70,000 IVFs and 5000 surrogacies. We have the sectors leading success percentage in any form of infertility care that being 64%. We at Guru hospitals, Madurai can proudly say that we have the complete infertility care and solution under one roof, from consultation and counseling for young couple along with early diagnosis and apt solutions to end stage guidance and consulting for alternative solutions such as adoption.

We don't put a stop with our patients post treatment, We always encourage them to come visit us anytime. We also organizing special events for all the child and parents every year to come enjoy and have a community to share, guide and help one and other in parenthood along with proper guidance and advice from qualified professionals.

We at Guru Hospitals always strive to create that happiness and love for every family that walks into our hospital.

B. Kalpana

Dr. B. Kalpaba M.D. (OG)., F.N.B.(Rep. Med.),
Gynecology & Infertility Specialist
Managing Director - Guru Hospital

Guru Hospital Protocol IN FERTILITY MANAGEMENT

Dr. B. Kalpana M.D.(OG), F.N.B.(Rep.Med.),

What is Infertility ?

It is often defined as inability to conceive after 12 months of regular sexual intercourse without the use of birth control. Nearly 10-15% of population is infertile.

Fertility causes can affect one or both partners

- In about one-third of cases, there is an issue with the male and in about one-third of cases, there is an issue with the female.
- In the remaining cases, there are issues with both the male and female, or no cause can be identified.

When to evaluate a couple

- Patient have not became pregnant 1 year of regular sex without any birth control.
- Patient older than age 35 and not conceived after 6 months of regular sex without any birth control.
- Patients with known abnormalities.

Causes of male infertility

- Abnormality in sperm production or function
- Overexposure to certain environmental factors
- Damage related to cancer and its treatment
- Hormonal Disfunction
- Infection
- Trauma

Causes of female infertility

- Ovulation disorders
- Uterine or cervical abnormalities
- Fallopian tube damage or blockage
- Endometriosis
- Cancer and its treatment

Risk factors

- Age : Female >35
- Tobacco& Alcohol use
- Being Obesity

DIAGNOSIS

Tests for men :-

- Semen analysis

Special Tests (Not needed for everyone) :

- Hormone testing
- Genetic testing

Tests for women :-

You may have a general physical exam, including a regular gynecological exam. Specific fertility tests may include:

- Hysterosalpingography
- Ovarian reserve testing
- Other hormone testing
- Imaging tests

Special Tests (Not needed for everyone) :

- **Hysteroscopy– Can Correct**

1. Congenital Uterine malformation
2. Polyp
3. Submucous Fibroid
4. Corneal Block of tube
5. Endometrial Biopsy for Cancer Patients

- **Laparoscopy Can Correct**
  1. Fibroid
  2. Chocolate Cyst
  3. PCOD
  4. Ovarian Cyst
  5. Recanalization of tube after family planning
  6. Tubal disease
  7. Congenital Uterine malformation

Treatments

Intrauterine insemination (IUI). During IUI, healthy sperm are placed directly in the uterus around the time the woman's ovary releases one or more eggs to be fertilized. Depending on the reasons for infertility, the timing of IUI can be coordinated with your normal cycle or with fertility medications.

Indications

- Mild male factor
- Minimal Endometriosis
- Cervical factor
- PCOD
- Unexplained Infertility

Assisted reproductive technology

In vitro fertilization (IVF) this is the most common ART technique. IVF involves stimulating and retrieving multiple mature eggs from a woman, fertilizing them with a man's sperm in a dish in a lab, and implanting the embryos in the uterus three to five days after fertilization.

IVF Needed for :

- Severe Male factor
- Azoospermia
- Severe Endometriosis
- B/L tubal disease
- Advanced age
- 4 Cycles of failed IUI

Other techniques are sometimes used in an IVF cycle, such as

- **Intracytoplasmic sperm injection (ICSI) :** A single healthy sperm is injected directly into a mature egg. ICSI is often used when there is poor semen quality or quantity, or if fertilization attempts during prior IVF cycles failed
- **.Assisted hatching :** This technique assists the implantation of the embryo into the lining of the uterus by opening the outer covering of the embryo (hatching).
- **Donor eggs or sperm :** Most ART is done using the woman's own eggs and her partner's sperm. However, if there are severe problems with either the eggs or sperm, you may choose to use eggs, sperm or embryos from a known or anonymous donor.
- **PGD :** Helps to select genetically normal embryos useful for patients with previous malformed baby, repeated abortion, repeated IVF failure.
- **Endometrial Receptivity Assay** – Useful to improve the success rate in repeated IVF failures.

Why Guru Hospital :

- Guru Multispecialty Hospital, Madurai is a complete Infertility center with high-tech technologies.
- It is one of the leading infertility & women care centers in Tamil Nadu – with an exclusive assurance to provide world-class infertility care to one and all in need.
- It is maintained by the most sophisticated technology to craft infertility a controllable health situation.
- The mission of this hospital is to facilitate infertility patients to give birth to their own babies. This was established with the sole objective of making infertility treatment available, accessible and affordable to the common people.
- We are offering treatment for all types of infertility problems for both men and women and our doctors are well qualified and efficient in treating on it.
- Apart from being the leading infertility center in Tamil Nadu, Guru Specialty Hospital will also focus on training centre in infertility.

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IVF & ICSI

Become a Mother with our Advanced Infertility Care

PHOTO GALLERY

Dr. Kalpana with 15 ISCI babies born on a single day at Guru Hospital

Dr. Kalpana with 9 ISCI babies born on a single day at Guru Hospital

IVF Babies Reunion 2016 held on 07.02.2016 at Guru Hospital Anish Fertility and Women Centre, Madurai.

15 IVF babies get together 2017

Dr. B. Kalpana with Triplet and Twin ICSI Babies born in Guru Hospital, Madurai

IVF Babies Reunion 2019 for Pongal Celebration at Guru Hospital, Madurai.

LAPAROSCOPIC ADENOMYOMECTOMY : A CASE SERIES

Introduction

Adenomyosis is a benign gynaecologic tumor and is classified into diffuse or focal adenomyosis, depending on the extent and location of the disease as well as the histological classification. The surgical treatment of adenomyosis remains a subject of discussion. Since 1990, in place of the classical V-shaped resection method, various forms of surgical management have been attempted, including a uterine muscle flap method that emphasizes fertility preservation, an asymmetric dissection method, and various modified reduction methods. Laparoscopic adenomyomectomy has also been attempted as an alternative to laparotomy for surgically managing the focal type of adenomyosis . Here we are presenting two cases of laparoscopic adenomyomectomy performed at our centre.

Case reports

Case-1

A 22 year old nulligravida female, without comorbidities or past pelvic surgery, presented to the OPD at Guru hospital, Madurai with incapacitating dysmenorrhea and menorrhagia for about a year. Pelvic magnetic resonance imaging (MRI) showed an overall increase in uterine volume (229 cm^3) with diffuse thickening of the junctional zone in the anterior wall, measuring up to 53 mm. These findings were compatible with adenomyosis. The initial clinical treatment included combined oral contraceptive and non steroidal anti-inflammatory drugs. Then she was advised to use dienogest 2 mg for 3 month without improvement on the pelvic pain. After a year of clinical following, the patient came to our hospital. Considering the patient's age and the clinical treatment failure, it was proposed a conservative laparoscopic surgery. The procedure was performed under general anesthesia in the Trendelenburg position. The surgeon used the central and the left-sided lateral port to perform most of the surgical procedures. At first, vasopressin was injected into the uterine wall . Using an ultrasonic scissor, a horizontal incision was made in the uterine fundus respecting the limits of the fallopian tubes. The incision continued along the coronal direction, however, the uterine cavity was never reached. A second incision was done, making a wide wedge-shaped resection of the anterior uterine wall and fundus. The incision was further continued along the anterior wall of the uterus. Afterward, the affected tissues were clamped with a forceps, identified and removed from the surrounding myometrium. If the myometrium appeared normal, it was spared as much as possible. The procedure was performed with caution to avoid damaging the endometrium. The myorrhaphy was performed with interrupted sutures in two layers with polyglactin. The conservative procedure was concluded in 95 minutes. Patient was dischargerd from hospital on post operative day-5. Histopathology analysis showed presence of endometrial tissue in the myometrium, confirming adenomyosis. After surgical treatment, she related improvement in pain on the Visual Analog Scale (VAS). Her evaluation of the pre and post-operative pain received 10 and 02 points, respectively, after 1 year of follow-up. New pelvic MRI, 11 months after surgery, showed total uterine volume of 172 cm^3, endometrium measuring 8 mm and junctional zone measuring 1.4 mm. Since the procedure, the patient has used continuous combined oral contraceptive pills and has returned to her work activities, which she was unable to perform before surgery.

Case - 2

A 31 year old nulliparous woman with severe uterine adenomyosis, which replaced nearly the half of uterine myometrium, visited our hospital due to severe dysmenorrhea, menorrhagia, and a desire to have a baby. Laparoscopic adenomyomectomy was performed as described in the previous case and similarly patient was discharged on POD-5 and was relieved of her dysmenorrheic symptoms. The patient tried in vitro fertilization one year latter. She conceived a singleton intrauterine pregnancy. The antenatal period was uneventful. Patient underwent caesarean section at 37 week 5 day of gestation. Both mother and baby are doing well.

Discussion

SURGICAL TREATMENT FOR ADENOMYOSIS

LAPAROTOMY: PARTIAL REDUCTION SURGERIES

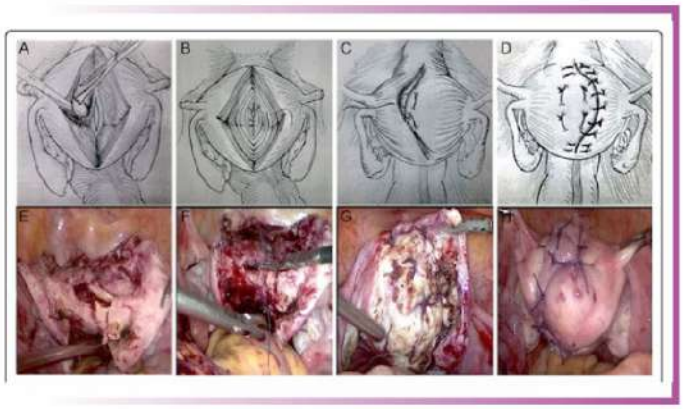
1. Wedge Resection of the Uterine Wall
2. Modified Reduction Surgery
3. Transverse H Incision of the Uterine Wall
4. Wedge-shaped Uterine Wall Removal

LAPAROTOMY: COMPLETE ADENOMYOSIS EXCISION

1. Triple-flap Method
2. Asymmetric Dissection Method

LAPAROSCOPIC ADENOMYOMECTOMY

With the laparoscopic approach, the surgical methods are limited due to the surgery allowing only limited directions of movement and limited instrumentation use; further, palpation is impossible. For nodular types of adenomyosis, laparoscopic surgery is possible using a surgical approach that is similar to that used for uterine fibroids. However, diffuse-type lesions require extensive resection and complicated suturing, necessitating difficult operations involving advanced techniques. The laparoscopic surgical method includes a longitudinal or transverse incision of the uterine wall along the adenomyoma. This is followed by resection of the adenomatosis using a monopolar needle (30) or a laser knife. Then suturing of the endometrial cavity, if perforated, and suturing of the uterine wall are performed (which may be accomplished in the seromuscular layer, in two or more layers (38) or using the double-flap method. Namely, the first flap in one side wall of the uterus (including the serosa and the myometrium) was brought into the second flap in another side of the uterine wall (including the endometrium and the myometrium) such that the



other side wall of the uterus (including the endometrium and the myometrium) was covered. Finally, removal of the adenomyotic mass may be accomplished using an endobag. However, there is a concern that a morcellator may disperse fragments of undetected malignant tumors throughout the abdominal cavity and upstage otherwise contained cancer, and its use has been discouraged by the Food and Drug Administration since 2014.

POSTOPERATIVE PREGNANCY OUTCOMES

Post-adenomyomectomy improvements in dysmenorrhea and hypermenorrhea vary but are recognized. The postoperative pregnancy rate also varies between 17.5% and 72.7%. However, artificial reproductive technology largely contributes to the relatively high pregnancy rate. In a review report a total, 2,365 uterine adenomyomectomies have been reported from 18 facilities worldwide. Of these, 2,123 procedures have been performed at 13 facilities in Japan, constituting 89.8% of the global total. Among these, 449 pregnancies have been confirmed and 363 (80.8%) resulted in deliveries including 2 cases of stillbirths. There were 13 (3.6%) cases of uterine ruptures. An additional 11 cases of uterine rupture have been reported.

Conclusion

Focal adenomyosis lesion can be treated laparoscopically. However, diffuse adenomyosis must be treated by laparotomy or preferably by laparoscopically-assisted laparotomy. Experts at Guru Hospitals, Madurai, are well verged and well experienced in laparoscopic adenomyomectomy as well as its laparotomy counterpart. After careful patient selection, a lot of patients with adenomyosis have been successfully treated with laparoscopic adenomyomectomy at our centre.

PREIMPLANTATION GENETIC DIAGNOSIS FOR RECURRENT PREGNANCY LOSS

Introduction :

Preimplantation genetic diagnosis (PGD) is the prevention of the birth of affected children in couples at genetic risk by sampling and genetic testing of nuclear material obtained from blastomeres or polar body biopsy of the embryo thus enabling selection and transfer of only normal embryos to achieve a normal pregnancy and birth of a healthy baby. In this way, couples do not have to experience the agony of aborting affected foetuses.

Case reports

Case - 1

A 33 year old woman with complaints of secondary infertility for 4 years and H/O 3 first trimester spontaneous abortions attended OPD at Guru Hospital, Madurai. The couple were diagnosed to have carrying cystic fibrosis mutations. The patient had the I148 mutation in CF. The patient was married for 4 years. Her husband was 36 year old and had Delta F508 mutation in CF. The patient underwent IVF / ICSI and seven embryos were obtained. We were able to obtain six embryos. All were biopsied using a laser guided technique for opening of zona pellucida, and the blastomeres were genetically assessed. For two of the six embryos there were no mutations found and hence the above two were transferred to the patients uterus.

The patient conceived with a singleton pregnancy and nuchal translucency as well as the dual and quadruple markers were within normal ranges. The second trimester anomaly scan was also normal. In May 2018, the patient underwent cesarean section and gave birth to a male baby weighing 3,320g and with an Apgar score of 8/10 without intercurrences.

Case-2

The couple comprised by a 33 year old woman and a 32 year old man attended OPD at Guru hospital with previous history of five abortions. On investigating the cause of RPL was found to be Robertsonian translocation. PGD by means of FISH analysis was performed after IVF on blastomeres obtained from day-3 embryos at about the 8-cell stage. The embryos were cultured. When the single interphase nucleus of a blastomere was observed, the blastomeres were biopsied.

The biopsied blastomeres were washed with phosphate-buffered saline (PBS) and exposed to hypotonic solution (0.075 mol/l KCl), and were then fixed and attached on glass slides. The fixed blastomeres were subjected to FISH analysis. The strategy consisted of using two subtelomeric probes for both translocation-related chromosomes and one centromeric probe for either translocation-related chromosome. The probes were obtained from Vysis (USA), Cytocell (UK) and GSP laboratory (Japan), and labeled in different colors.

The nuclei and probe mixture were combined on the glass slides and denatured by heating to 72°C. The slides were then incubated in a chamber overnight at 37°C to allow for hybridization. The slides were analyzed using a fluorescence microscope (IX71, Olympus, Japan). Blastomeres showing two signals for each probe were classified as normal or balanced, while any other combination was classified as unbalanced.

Two embryos with normal FISH signals were selected and transferred into the uterine cavity on day 5 after the IVF. The lady conceived and delivered a healthy female baby by LSCS in November 2018.

Discussion

Despite its relatively common occurrence, spontaneous pregnancy loss remains an exceptionally traumatic event for many couples. Particularly in cases of recurrent pregnancy loss, common symptoms include a sense of desperation, vulnerability and powerlessness; these symptoms can be further exacerbated by unnecessary tests and investigations that fail to enhance their reproductive outcomes. In this way, it is imperative that clinical and diagnostic tests focus on optimizing three main outcomes: maximizing the chances of live birth, minimizing the risk of further miscarriage and optimizing the time required to achieve pregnancy.

Clinical utility of ART with PGD among parental carriers of structural chromosomal rearrangement, ushering in a new generation of genetic diagnostics and therapeutics for infertility patients with genetic abnormalities such as Robertsonian translocations or reciprocal translocations has been described. As these couples are at increased risk of recurrent loss owing to the production of chromosomally unbalanced gametes, it seems logical that screening of embryos through IVF–PGD would improve live birth rates and reproductive outcomes. No RCT, however, have been conducted to directly validate the benefits of such technology, and most studies in this domain have been limited by their retrospective nature.

Various systematic review demonstrates that similar LBR, time to subsequent conception and miscarriage rates are observed through natural conception and IVF–PGD in couples experiencing recurrent miscarriage and carrying a structural chromosome rearrangement.

Well-controlled randomized controlled trials are still needed to directly compare reproductive outcomes after PGD compared with natural conception in this subgroup of patients. At present, patients should be informed of the risk and significantly higher cost associated with IVF–PGD, as well as the lack of available evidence regarding its benefits. As with all cases of RPL, couples with a known carrier of a structural chromosome rearrangement should first be thoroughly evaluated for all possible causes of PRL and treated accordingly. These couples should also be fully informed of all possible treatment options and reassured that they have a good prognosis for successful pregnancy. Ultimately, a judicious approach to invasive and costly treatment is advisable, as most of the available systematic review demonstrates insufficient data are available to recommend IVF–PGD over natural conception in couples with structural chromosomal rearrangement experiencing RPL.

Conclusion :

A pregnancy rate of 20% per cycle is achieved by most centres. The great advantage that PGD possesses over other prenataldiagnostic techniques is that termination of pregnancy is avoided, offering the opportunity to high-risk couples to overcome the worrisome burden of a possible abortion and also enabling its use in societies where abortion is prohibited and other prenatal diagnostic methods cannot be employed. PGD in recurrent pregnancy loss is still in investigative phase and its judicial use can be considered when other methods fail. Consultants at Guru Hospital have decades of experience in performing IVF and associate procedures like PGD.

குரு மருத்துவமனையின் அனிஷ் செயற்கை கருத்தரிப்பு மையத்தில் பிறந்த செயற்கை கருத்தரிப்பு குழந்தைகளின்

வாரிசு பொங்கல் விழா

குரு மருத்துவமனையின் அனிஷ் செயற்கை கருத்தரிப்பு மையத்தில் பிறந்த செயற்கை கருத்தரிப்பு குழந்தைகள் அனைவரையும் ஒன்றாக இணைத்து 19/01/2019 அன்று குரு மருத்துவமனை வளாகத்தில் வாரிசு பொங்கல் விழா நடைபெற்றது. இவ்விழாவில் அனிஷ் செயற்கை கருத்தரிப்பு மையத்தில் பிறந்த நூற்றுக்கும் மேற்பட்ட செயற்கை கருத்தரிப்பு குழந்தைகள் மற்றும் பெற்றோர்கள் பங்கேற்றனர்.

குரு மருத்துவமனையின் நிர்வாக இயக்குனரும், பிரபல செயற்கை கருத்தரிப்பு நிபுணருமான டாக்டர்.கல்பனா அவர்கள் விழாவில் பங்கேற்ற குழந்தைகள் மற்றும் பெற்றோர்கள் அனைவரையும் வரவேற்று பேசினார். பின்னர் விழாவில் பங்கேற்ற குழந்தைகள் மற்றும் பெற்றோர்கள், குரு மருத்துவமனையின் நிர்வாக இயக்குநர் டாக்டர்.கல்பனா மற்றும் குரு மருத்துவமனையின் தலைவரும், பிரபல புற்றுநோய் அறுவை சிகிச்சை நிபுணருமான டாக்டர்.பாலமுருகன் மற்றும் குரு மருத்துவமனையில் பணியாற்றும் அனைத்து மருத்துவர்களும், பணியாளர்களும் இணைந்து பொங்கல் வைத்து மகிழ்ந்தனர். மேலும் குழந்தைகளுக்கான சிறப்பு விளையாட்டுப் போட்டிகள் நடத்தப்பட்டு போட்டியில் வெற்றி பெற்ற குழந்தைகளுக்கு பரிசுகள் வழங்கப்பட்டன.