THE MUMBAI OBSTETRIC & GYNAECOLOGICAL SOCIETY

MOGS MATTERS

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President Message

Dear friends,

It gives me great pleasure to bring to you the sixth issue of our innovative and now extremely popular E-newsletter, 'MOGS MATTERS'.

This monthly newsletter brings to you all the latest updates which are relevant to you in your daily practice. The editors of this issue Dr Rajendra Sankpal, Dr Ganpat Sawant and Dr Gaurav Desai have worked hard to put this issue together and we are grateful to them. All the contributors have made a lot of effort to bring you concise information and creative content and we are thankful to them . There is also focus on 'Fit is it"our mantra for the year, brainteasers and travelogues.

I hope you enjoyed the unique FOGSI ICOG MOGS Conference on Non communicable diseases 4th-7th feb 2021, with many International and national experts sharing their experiences. It had a large number of delegates who logged in .I am sure you have benefitted from the many focused webinars we have been doing on subjects of Infertility, fetal medicine, PCOS, Obstetric emergencies, endocrinological problems, RPL, 1st trimester bleeding and a lot more. Our very relevant and well timed webinar on COVID vaccination and its rollout with experts was much appreciated. I hope the 'Pearls of wisdom' videos which you are receiving regularly are adding to your knowledge. Our digital PG training program-The NA Purandare practical training event which has hundreds of young doctors tuning in, is helping young doctors get ready for exams and clinical practice.

MOGS V Care & share program which was started by us to support our frontline workers and the women whose health we look after is doing well. I look forward to interacting with you on many different platforms this year-through newsletters, videos and webinars and now that the vaccine has come, maybe we can meet in small groups .

We have had some interesting competitions this year and will soon be announcing the results. Do join us for our annual conference GOTTT, Gynaecology Obstetrics techniques, technologies and therapeutics on a virtual platform on 10th and 11th April 2021. Thank you once again for all your support over the years and look forward to a wonderful 2021 at MOGS.

Stay safe ,stay healthy.

Best wishes

Dr Rishma Dhillon Pai

Mogs for Women
Our speciality is you

Editors Message

Dr. Rajendra Sankpal

Dr Ganpat Sawant

Dr Gaurav Desai

To our MOGS readers,

Greetings! We hope this newsletter brings with it good health. We, the editors of the sixth MOGS Matters bring to you a concise yet precise selection of academic articles and fun trivia to keep you all occupied and entertained during your long hours at work. We commend your dedication and hardwork to this wonderful profession and hope the commencement of vaccination against COVID-19 brings with it a new dawn and a new chapter in our lives.

This MOGS Matters begins with an article on hypothyroidism followed by the success story of anti D immune globulin. Thereafter we highlight the importance of proteins in pregnancy and give practical tips for tackling erectile dysfunction in patients. An interesting article for us to stay fit as well as a quiz is followed by a brief summary on Urodynamic studies. This MOGS matters also highlights the past and upcoming events in our calendar. Finally our youth council members gave a beautiful account of travel diaries.

The editors would like to thank the guidance and opportunity given by the dynamic MOGS President Dr Rishma Dhillon Pai, our omnipresent Secretary Dr Anahita Chauhan and our talented Treasurer Dr Rajendra Sankpal. We hope you all enjoy reading this issue of MOGS Matters and hope to meeting you all soon in person.

Sincerely,

The editors.

HYPOTHYROIDISM – IMPACT ON CHILD BEARING

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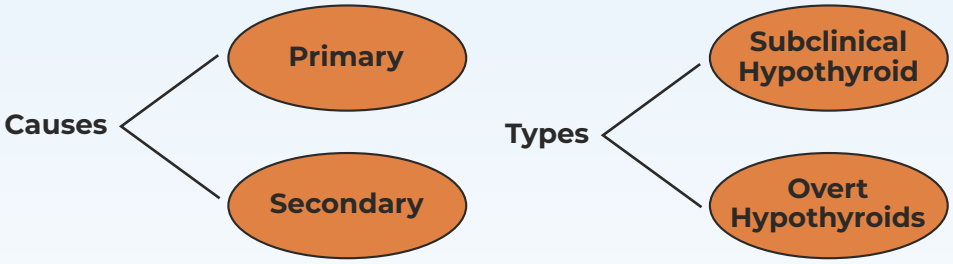


Introduction: Undiagnosed and untreated thyroid dysfunction can be a cause for infertility, pregnancy disorders as well as sub-fertility. Thyroid dysfunction can affect fertility in various ways resulting in anovulatory cycles, luteal phase defect, high prolactin (PRL) levels, and sex hormone imbalances. Therefore, normal thyroid function is necessary for fertility, pregnancy, and to sustain a healthy pregnancy, even in the earliest days after conception

Euthyroid auroimmune thyroid disease (AITD) & Infertility

AITD affects 5% to 20% of women of child bearing age

AITD is more prevalent in infertile women an has been associated with:

↑misscarriage rate [spontaneous conception/ Art]	↓oocyte fertilisa-tion and Pregnancy rates in women with AITD under going art	Presence of thyroid autoantibodies (TPO, Tg) in the follicular fluid of all women with AITD	Endometriosis and polycystic ovarian syndrome (PCOS)	Premature ovarian failure

Possible mechanism of SITD causing infertility

AITD is associated with impaired cellular and humoral immune responses

↑NK Cell Concetrations in women with unexplained infertility

No Significant differences in NK Cytotoxic activity

It is suggested that the presence of thyroid antibodies and an ↑TSH

Increase IL - 2 production

IL - 2 medicated NK cell activation

Reproductive failures and miscarriages

LT4 administration

- Normalies PRL and LH Levels
- Reserves menstrual abnormalities
- spontaneous fertility
- chance of conception in otherwise a asymtomatic infertile women

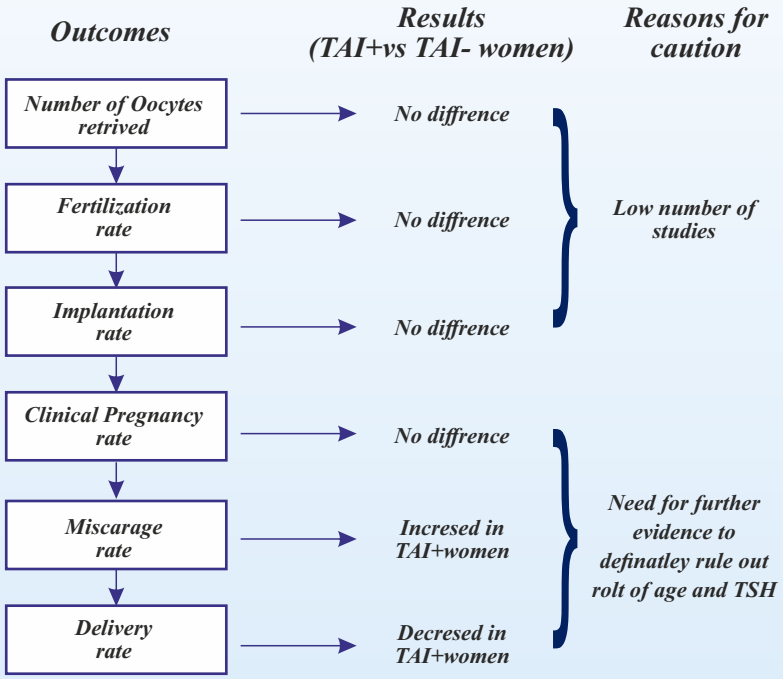
76.6% infertile women with hypothyrodism conceived after 6 weeks to 1 year of treatment

SORT : KEY RECOMMENDATIONS FOR PRACTICE

CLINICAL RECOMMENDATION	EVIDENCE RATING
The optimal method of to assess serum FT. during pregnancy uses direct direct measurement techniques. Serum TSH is a more accurate indicator of maternal thyroid status than alternative Ft. Assay methods	C
Targated screening for thyroid disease should ne performed in pregnant women at high risk, including those with history of thyroid disease type 1 diabetes mellitus, or other autommune disease: current of pas use of thyr oid disease	C
Hypothyroidism during pregnancy should be treated with leothyroxine, with a serum TSH goal of less than 2.5 mlu per L.	A
Serum TSH should be measured in pregnant women who are being treated for hypothyroidism at four to six weeks gestation, then every four to six weeks until 20 weeks gestation and on a stable medication dosage, than again at 24 to 28 weeks' and 32 to 34 weeks gestation.	C
In pregnant women who are being treated for hyperthyrodism, serum TSH and FT. should be measured every two weeks until the patient in on a stable medication dosage	C

Indications for Thyroid Testing in Pregnancy3,4

- Current thyroid therapy
- Family history of autoimmune thyroid disease
- Goiter
- **History of:**
  - Autoimmune disorder
  - High-dose neck radiation
  - Postpartum thyroid dysfunction
  - Previous delivery of infant with thyroid disease
  - Therapy for hyperthyrodism
  - Type 1 Diabetess mellitus



Algorithm for management of Hypthyrodism in Pregnancy

Screen AT 1st Antenatal Visit - FT4, TSH, ANTI-TPO ANTIBODIES*

- Normal
  - No Treatment Required Review As & When Needed Clinically
- FT4, TSH - NORMAL ANTI TPO AB - +VE
  - Observe Woman (Treat with low Dose LT4 If Maternal Age is High Or in case of bad obstetric History. According to Clinical Discretion
- FT4, NORMAL OR LOW TSH >2.5mIU/ml - 1st Trimester TSH>3mIU/ml - 2nd & 3rd Trimester Irrespective of Antibody Status
  - Start LT4 Replacement Target TSH - 0.1-2.5 mIU/L-1st Trimester 0.3-3.0 mU/L 2nd & 3rd Trimester FT4 Near Upper Limit of Normal

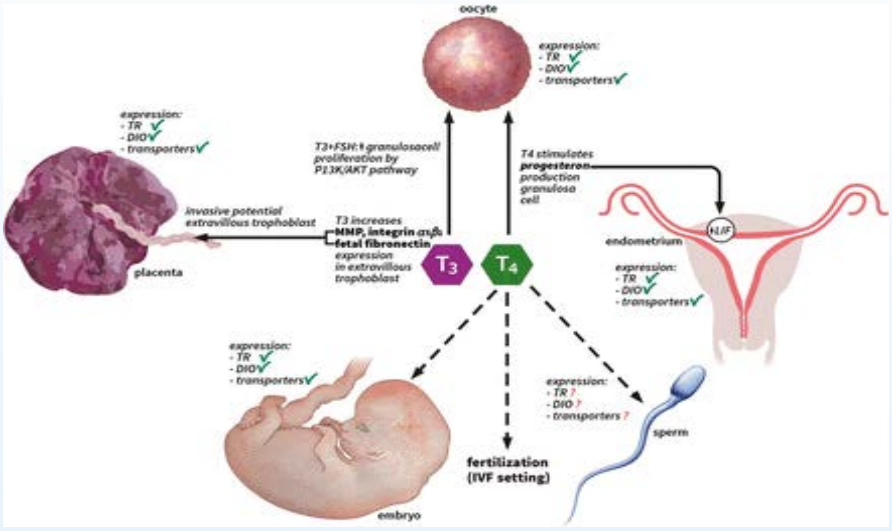
Evaluate FT4 TSH Monthly & Adjust LT4 Dose As Required

- Neonatal TSH Screening Treat With LT4 if Required
- If Anti TPO Antibody +ve watch out for post-partum thyroditis

Decrease LT4 Dose by 1/2 Post-Partum → Recheck FT4, TSH + Weeks Post-Partum

*Mandotory for high risk women, preferable for all women

Mechanisms of action of thyroid hormones in the reproductive system. Schematic summary of known effects and/or associations of thyroid hormone and the reproductive system



Solid lines indicate an effect of T4 administration. Dotted lines indicate associations without evidence for causality. For each tissue/cell-type expression of TR, deiodinases (DIO) and thyroid hormone transporters is indicated. Thyroid peroxidase autoantibody (TPO-Ab) is not shown because a lack of evidence for a causal relationship between TPO-Ab and function of the reproductive system. MMP, metalloproteinases.

Placentation T3 increases the expression of MMP-2, MMP-3, fetal fibronectin and integrin a5f31T3 in early placental extrayillous trophoblasts.Summary of the available evidence on thyroid hormones and the effect on reproduction.

THYROID HORMONES	
Oocytes and ovulation	Oocytes and ovulationThyroid hormone disorders are associated with disturbed (9.1kbang0.0ili) T3 in combination with FSH enhances granulosa cell proliferation and inhibits granulosa cell apoptosis by the P1310),Ist pathway. Thyroid hormone transporters and receptors are expressed in the ovary.
Sperm	SpermHypothyroidism has an adverse effect on human spermatogenesis and negatively affects sperm count and motility as well as morphology. Hyperthyroidism is associated with abnormalities in sperm motility and DNA damage. No studies are available on the mechanisms by which thyroid hormone affects svermatozenesis.
Fertilization and embryogenesis	Fertilization and embryogenesis EndometriumHypothyroidism Is assodated with lower fertilization rates and disturbed embryogenesis. No studies on the pathophysiology have been reported.
Endometrium	No studies on the pathophysiology have been reported. Deiodinases, THRA and THRB are expressed in the endometrium
Implantation	Evidence for a direct effect of thyroid hormone on endometrial receptivity or function is lacking.ImplantationThyroid hormone stimulates the production of progesterone in granulosa cells and up-regulates LW.
Placentation	T3 increases the expression of MMP-2, MMP-3, fetal fibronectin and integrin a5f31T3 in early placental extrayillous trophoblasts.There are no studies on the effect of thyroid hormone on implantation.

Summary of thelavailable evidence on thyroid peroxidase autoantibodies (TPO-Ab) and the effect on reproduction.

TPO - ANTIBODIES	
Oocytes and ovulation	TPOAb are present in follicular fluid. TPO-Ab do not influence the number of retrieved oocytes during controlled ovarian stimulation. There are no studies on a direct effect of TPO-Ab on folliculogenesis
Sperm	TPO-Ab are more often found in subfertile men compared with a control group. No studies are available that showing a direct effect of TPO-Ab on spermatogenesis

Fertilization and embryogenesis	TPO-Ab are associated with lower fertilization rates and embryogenesis disturbed No literature is available on the pathophysiology. Endometriurn TPO-Ab do not influence endometrial volume. No studies have been published on direct effects of TPO-Ab Ab on endometrial receptivity or endometrial function
implantation.	There are no studies on direct effects of TPO-Ab on implantation.
Placentation	TPOAb diffuse through the placental barrier There is no evidence for a direct effect of TPO-Ab on early placentation

Effects Associated with Hvoothvroidism and Preanancv[3.4,5]

CONDITION	*PRECONCEPTION*	*PREGNANCY*	*POSTPARTUM*	*MEDICATIONS*
Hypothyroidism Overt	Decreased fertility, increased miscarriage	Anemia, fetal neurocognitive deficits, gestational hypertension, low birth weight. miscarriage, placental abruptlon, preeclampsia, preterm birth	Maternal thyroid dysfunction, hemorrhage	Levothyroxine: little to no effect on hypertensive disorders and abruption; reduces miscarriage and preterm birth, and improves fetal Intellectual development
Hypothyroidism Subclinical	Effect similar to overt hypothyoidsm, but less documentation exists			

Changes in Thyroid Function Test Results During Uncomplicated Pregnancy and in Pregnant Women with Thyroid Disease '

MATERNAL CONDITION	*THYROID STIMULATING*	*FREE THYROXINE*	*FREE THYROXINE*	*TOTAL THYROXINE*	*TRHODOTH YRONINE*	*RESIN TRNODOTHYRONINE UPTAKE*
Hyperthyroidism	*Decrease*	*Increase*	*Increase*	*Increase*	*Increase or no change*	*Increase*
Hypothyroidism	*Decrease*	*Increase*	*Increase*	*Increase*	*Decrease or no change*	*Decrease*
Normal Pregnancy	*Decrease*	*No Change*	*No Change*	*Increase*	*Increase*	*Decrease*

Treatment of Hypothyroidism in Pregnancy[2,3,6,7]

CONDITION	TREATMENT	TREATMENT GOAL	MONITORING	ANTEPARTUM
Hypothyroidism	Levothyroxine, 100 to 150 mcg per day orally	Serum TSH < 2.5 coak per L	Measurement of serum TSH at 4 to 6 weeks' gestation, then every 4 to 6 weeks until 20 weeks' gestation and on stable medication dosage, then again at 24 to 28 weeks' and 32 to 34 weeks' gestation	Typically reserved for women with coexisting conditions or obstetric indications, and in patients with other indications for testing

Trimester-Specific Reference Ranges for Common Thyroid Tests"

TEST	NONPREGNANT	FIRST TRIMESTER	SECOND TRIMESTER	THIRD TRIMESTER
Thyroid-stimulating hormone (mill per L)	0.3 to 4.3	0.1 to 2.5	0.2 to 3.0	0.3 to 3.0
Thyroxine-binding globulin (mg per di.)	1.3 to 3.0	1.8 to 3.2	2.8 to 4.0	2.6 to 4.2
Thyroxine, free (ng per dl)	0.8 to 1.7	0.8 to 1.2	0.6 to 1.0	0.5 to 0.8
Thyroxine, total (mcg per dL)	5.4 to 11. /	6.5 to 10.1	Lb to 10.3	b.3 to 9.
Trilodothyronine, total (ng per 4)	77 to 135	97 to 149	117 to 169	123 to 162

Adjustment of Levothyroxine Dosage Based on Thyroid-Stimulating Hormone Levels

THYROID-STIMULATING HORMONE LEVEL (MIU PER L)	LEVOTHYROXINE DOSAGE INCREASE (MCG PER DAY)
5to<10	**25 to 50**
10 to 20	**50 to 75**
> 20	**75 to 100**

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ANTI-D IMMUNE GLOBULIN: AN IMMUNOLOGICAL SUCCESS STORY

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Introduction and background

Rhesus D (Rh D) alloimmunization leading to hemolytic disease in the newborn (HDN), is a preventable condition, resulting in some 50,000 fetal deaths annually. These occur primarily in developing countries in Asia including India, and underdeveloped parts of Sub-Saharan Africa [1]. The introduction of Rh immune prophylaxis (Rh Ig) in the 1960s is a prime example of an immunological success story in the conquest of hemolytic disease of the newborn in developed countries. On January 31, 1964, Freda and Gorman performed the first anti-D injection on a pregnant woman in history: Gorman's sister in-law, Australian Kath Gorman, who then went on to have seven children. The ability of anti-D to prevent HDN was formally announced at the International Blood Transfusion Congress in Sydney in 1966. Initial clinical trials demonstrated reduction of sensitization to the Rh-D antigen of Rh negative women delivering Rh positive newborns was more than tenfold, from 14% to approximately 1%, when susceptible women were administered Rh Ig after delivery of these offspring [2]. Further gains in prevention were possible when Rh Ig was also administered to Rh negative women in the antenatal period, as evidenced by Bowman et al, in the Canadian Rh Prophylaxis trials of the 1970s, reducing the incidence of Rh sensitization from 1.8% to 0.07% [3].

Manifestations

Rh isoimmunization of a pregnant mother may be responsible for varying severity of anemia in the fetus and newborn. Usually it is in the second or subsequent pregnancies that the fetus is affected. Such a fetus will initially have fetal anemia; this may manifest clinically as decreased fetal movements. If the condition persists and becomes more serious there would be extramedullary erythropoiesis in the liver and spleen. This can be seen on ultrasound as hepatosplenomegaly. In a profoundly anemic fetus, initially there is increased cardiac output but the hypoxic heart can no longer sustain and finally culminates in heart failure. This is manifested sonographically as hydropic changes like pleural effusion, pericardial effusion, ascites, subcutaneous edema and scalp edema. To compensate for the reduced oxygen supply, the placenta also enlarges, which is seen as placentomegaly on ultrasonography. Fetal anemia is reflected on USG as increased middle cerebral artery (MCA) peak systolic velocity. By the time these hydropic changes are evident on ultrasound, it is quite late and fetus is very sick with a high mortality. Therefore the aim remains to identify fetal anemia much before this terminal stage.

Antenatal Prophylaxis

If ICT is negative at the first visit, it is repeated at four weekly intervals, and if it remains negative on subsequent testing, prophylactic dose of anti-D immunoglobulin is given (300 µg deep intramuscularly) at 28–32 week of pregnancy. This will take care of the small amount of fetomaternal hemorrhage (FMH) and prevent isoimmunization. Since anti-D injection is a human blood product obtained from plasma, a written informed consent should be taken before its administration.

There are various thoughts regarding the one dose of 300 µg at 28 weeks versus two doses of 100–120 µg each at 28 and 34 weeks. However most of the guidelines have preferred single dose and have mentioned that two dose schedules could be used as an alternative regime [4].
In addition to routine prophylaxis, different situations which are considered to increase the risk of FMH should be covered by anti-D prophylaxis. After checking for maternal blood type and antibody screening, 120–150 µg of intramuscular anti-D injection is given for the following obstetric conditions within 12 weeks of pregnancy: threatened abortion; miscarriage; induced abortion; ectopic pregnancy; molar pregnancy; and chorionic villus sampling.

After 12 weeks of pregnancy, 300 µg of intramuscular anti-D for following conditions: all above conditions after 12 weeks; amniocentesis; external cephalic version; antepartum hemorrhage; retained placenta; and blunt trauma over the abdomen.

Usually these doses prevent development of isoimmunization and take care of up to 15 mL of fetal RBCs. Where severe FMH is suspected, Kleihauer–Betke test should be done to measure the amount of FMH and accordingly dose can be adjusted. Additional 10 µg of anti-D should be given for every additional 0.5 mL of fetal RBCs in the maternal circulation.
A few investigators have observed that if an Rh negative mother does not deliver by 40 weeks and she has received prophylaxis at 28 weeks (12 week ago), the circulating anti-D is not enough to take care of FMH occurring at this time. Hence they advise a second dose of anti-D at 40 weeks. However, there is not enough evidence for this, neither is it a routine practice.

Postpartum Prophylaxis

The FMH which occurs at the time of delivery is covered by prophylactic anti-D within 72 h of birth. A dose of 300 µg of anti-D is given when the baby's blood group is Rh-D positive. If anti-D dose is missed within 72 h, it can be given up to 28 days of delivery with some benefit.
Monoclonal vs Polyclonal preparation of Anti-D

The conventional polyclonal preparation of anti-D IgG, with its high success rate and safety profile, has been the mainstay in the prevention of Rh disease for over five decades. In recent times, however, the commercial availability of this IgG preparation has been affected, primarily due to limited availability of this hyperimmune plasma. There now exists a world-wide shortage of polyclonal anti-D Ig. Additionally, there is increasing concern about the risks of transmission and newly emerging viruses, especially since in most countries all Rh-negative

pregnant women are offered anti-D antenatally, irrespective of the Rh status of the fetus. Rhoclone® is a preparation of human monoclonal anti-rhesus antibodies (IgG1 subclass) that is available in India since 2007 and is to date the only monoclonal anti-D marketed in the world. It is derived from a stable hetero-hybridoma cell line and purified using protein affinity chromatography. Chauhan et al conducted a Multicenter, Randomized, Open-Label Trial comparing the Efficacy and Safety of Monoclonal Anti-Rh (D) Immunoglobulin with Polyclonal Anti-Rh (D) Immunoglobulin for the Prevention of Maternal Rh-Isoimmunization. This is the only study to have evaluated the application of monoclonal anti-D in a large number of women requiring anti-D in clinical settings. The study concluded that the two anti-D preparations are clinically similar, and the newer monoclonal anti-D preparation is a suitable alternative to the conventional polyclonal anti-D in the prevention of maternal isoimmunization. [5]

Recommendations of FOGSI-ICOG

1. All patients presenting for MTP, medical or surgical, should have knowledge of documentation of blood group and Rh
2. Antenatal prophylaxis should be offered to all Rh negative women. A dose of 100 µg at 28 and 34 weeks, or a single dose of 300 µg at 28 weeks should be administered.
3. 50 - 100 µg anti -D injection should be given after all sensitizing events in first trimester.
4. For mid and late pregnancy sensitizing events and post partum, the non sensitized Rh negative patient should receive 300 µg anti D.
5. Due to the lack of availability of fetomaternal hemorrhage volume testing, these recommendations suggest administering higher doses in order to protect a majority of patients in high risk situations.

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The Art of Laparoscopic Suturing

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Laparoscopic surgery has become the part of the day-to-day gynaecological practice. In recent years the need for advanced laparoscopic surgeries has increased manifolds. More number of the practicing gynaecologists are venturing into the practice of Gynecological endoscopy. Suturing is the essential part of any surgery. Similar to the principles of laparotomy surgery one must know and master the technique of Laparoscopic suturing before embarking on the advanced endoscopic surgeries. Tissue approximation by suturing remains the most reliable, cost effective and professionally satisfying method for repair of defects and achieving hemostasis. This applies as equally to endoscopic surgical interventions as it dose to open conventional surgery.

The following laparoscopic surgeries in Gynecology require laparoscopic suturing,

- Laparoscopic Myomectomy
- Laparoscopic Closure of vaginal vault in Total Laparoscopic Hysterectomy
- Laparoscopic tubo-tubal anastomosis
- Laparoscopic closure of bladder and intestinal trauma
- Closure of ureteric injuries
- Uncommonly reconstruction of ovary after removal of large ovarian cyst and laparoscopic surgery for uterine or vault prolapse surgery

Although approximation by clips and stapling techniques expedites the process of surgical reconstruction in general, the two approaches are complimentary and indeed the safe execution of stapling anastomotic techniques necessitates intracorporeal suturing and knot tying. Situations are often encountered when stapling or use of clips cannot be used. Failure of stapling devices is infrequent due to mechanical malfunction or human error. So surgeon must deal with the problem by laparoscopic suturing techniques.

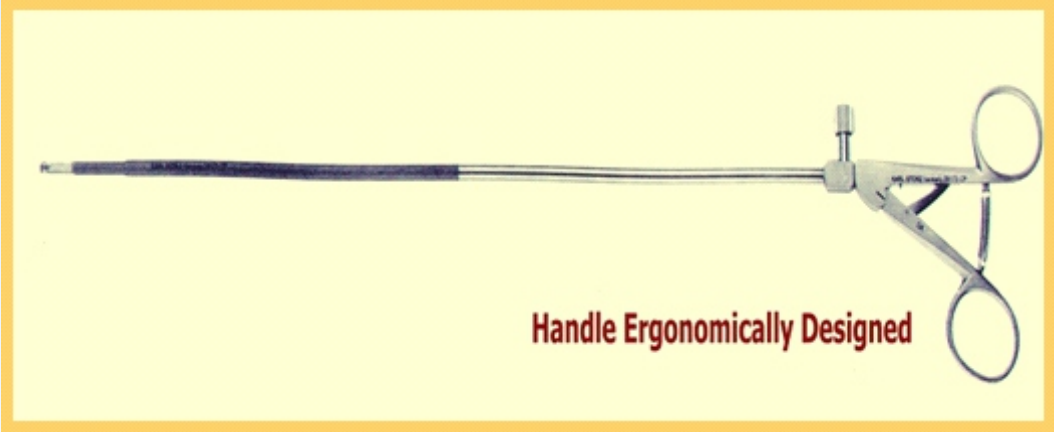
This article will give you the step-by-step approach to perform effective laparoscopic suturing. Author states that the following points are the guidelines to perform laparoscopic suturing and are not the rules of the suturing.

Laparoscopic suturing requires a good needle holder, assistant grasper and suture material.

Needle Holder

The design of the needle driver is now standardised. You must be able to grasp the curved needle securely.

The handle of the instrument should be in line with the long axis of the barrel of the instrument in order allow physiological position of function to prevent excessive hand fatigue.



Needle holder must minimum ratchets. When needle holder is holding the needle at the same time it should allow the manipulation of the needle in order to achieve the upright position of the needle. More ratchets cause a violent set of movements at the tip of the needle holder reducing suturing efficiency. The release mechanism should be simple, requiring only one click to release the needle.

Assisting Needle Grasper

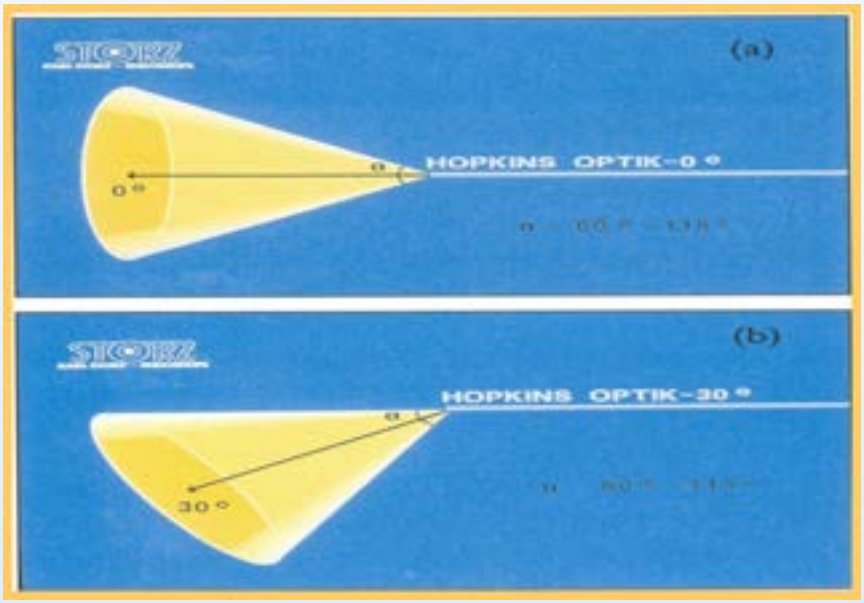
As in laparotomy the non-dominant hand can have a simple tooth grasper with a design of 2X4 teeth. A non traumatic fenestrated simple grasper is also sufficient to assist the suturing. This instrument should not have a ratchet.

Choice of Needles

Straight needles have very limited application in laparoscopic surgery, just as they have in open surgery. The tip of the straight needle has tendency to remain buried in the tissue, making the tip difficult to grasp. Curved needles are preferred in laparoscopic surgery.

Choice of Laparoscope:

The 30- Degree laparoscope is preferred to 0 degree laparoscope. It has a look down capacity & allows to adequately visualising the operative sites.



Suture Material

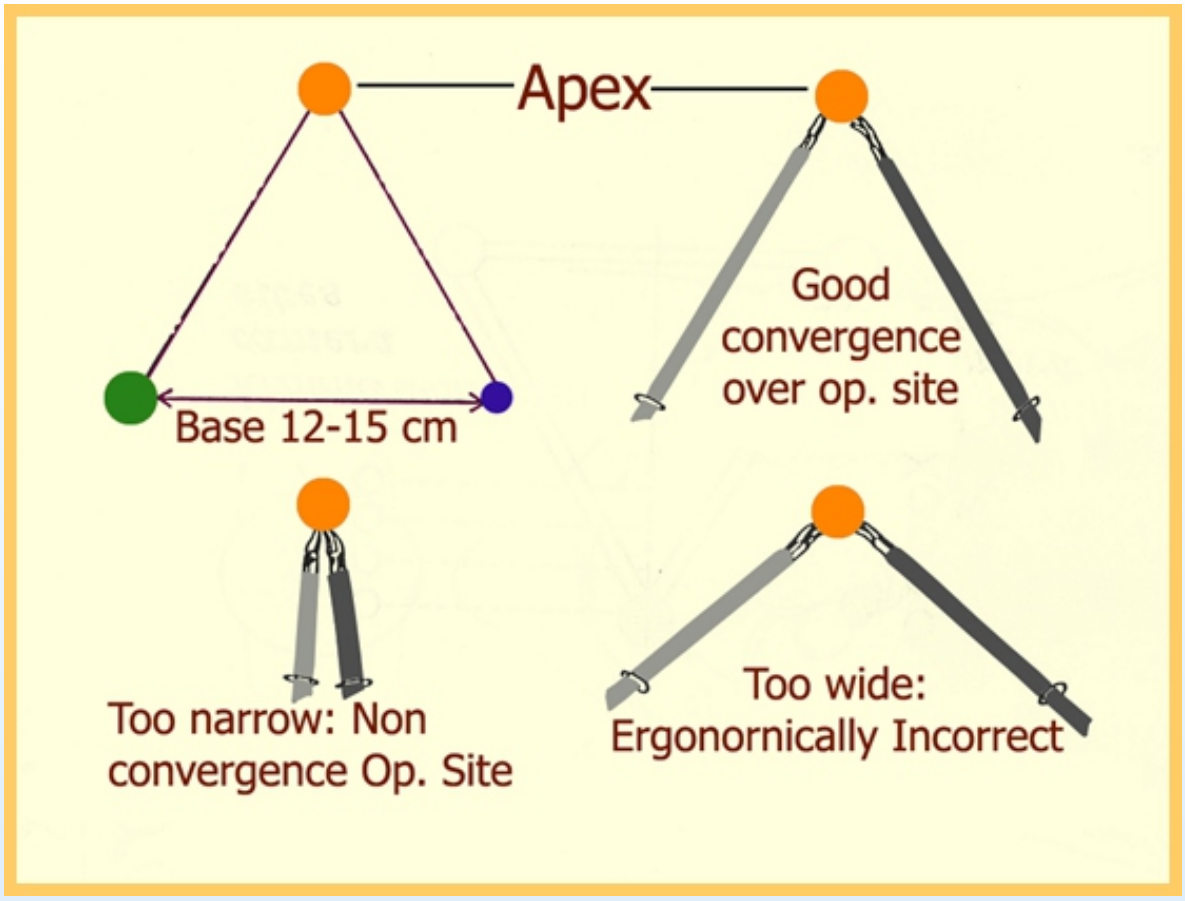
Author prefers to use no. 1 delayed absorbable braided suture on 40 mm half circle round body needle (Code No. 2347) for gynaecological surgeries such as myomectomy, vaginal vault closure and sacrocervicopexy and vault prolapse surgery. In the beginning of the suturing experience it is preferable to use suture length of 10 cm for simple interrupted sutures and 20 cm suture length for continuous suturing. Once the surgeon is familiar with the technique of laparoscopic suturing he or she may choose a longer length of the suture material. In case of long sutures such as more than 30 cm the suturing becomes cumbersome in the limited magnified abdomen.

Camera Port

Placement of camera port is now standardised. Author prefers to place the camera port intra umbilical or supraumbilical area.

Ancillary Ports

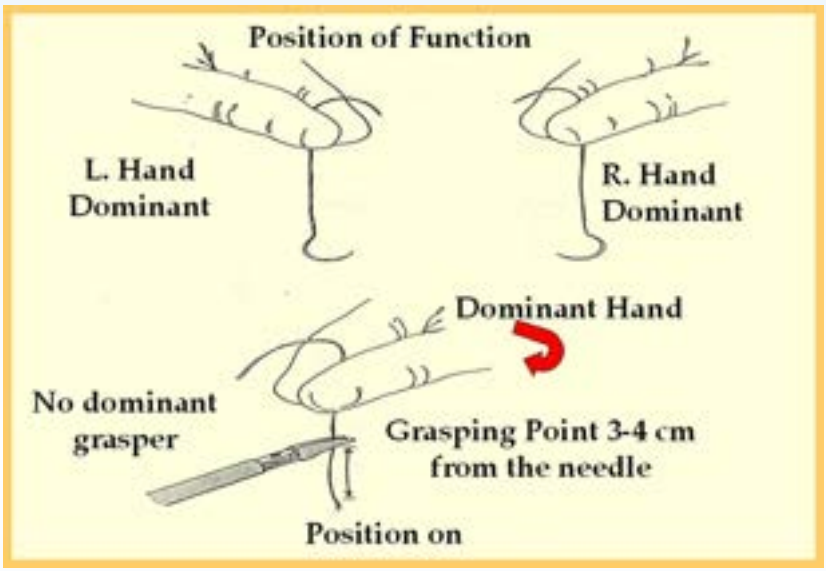
Laparoscopic surgery requires minimum two ancillary ports. Author prefers to put two ports on the right side of the midline. First ancillary port is placed at the spinoumbilical line two fingers medial to the anterior superior iliac spine and the second port is placed in the midclavicular line at the level or just above the level of the umbilicus. The distance between the two ancillary ports should be minimum of 12 to 15 cm in a distended abdomen. If the two ports are placed close to each other than the needle driver and tooth grasper in these ports will not converge at the tissue site and will be parallel to each other making the suturing experience more difficult. If these two ports are too widely separated then it will lead to unphysiological situation leading to pain at the arms and the shoulder after minimal operative time.

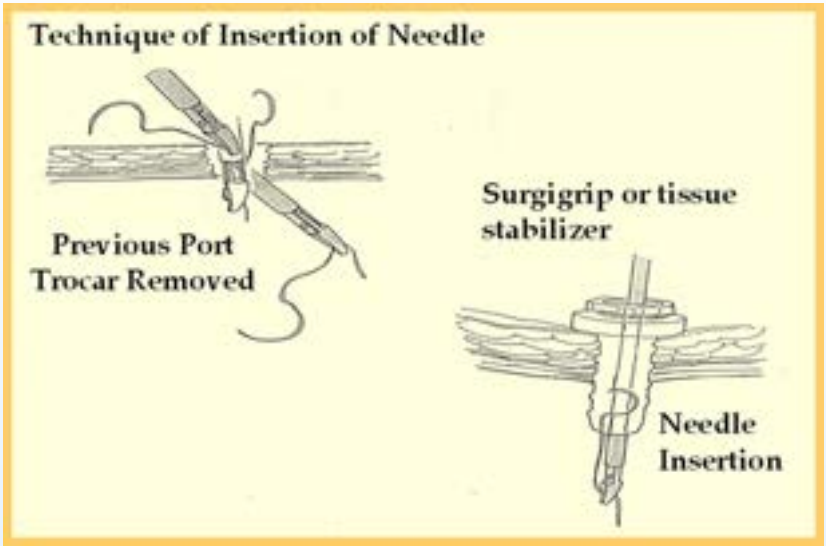


The Technique of Intracorporeal Suturing

Technique of Introduction of Needle and Suture Material Into the Abdomen:

After selecting the length of the suture material, the 5 mm lower ancillary cannula port is removed from its position. The needle driver is then introduced through this removed canula. Then the suture material is grasped with the needle holder 2-3 cm away from the needle. Now the needle holder is reintroduced along with the suture material, needle and cannula through the same original ancillary port in the direction towards the hollow of pelvic cavity under the laparoscopic guidance. After the entry of the suture and the needle, the remaining suture material is pulled inside the abdomen under laparoscopic guidance.



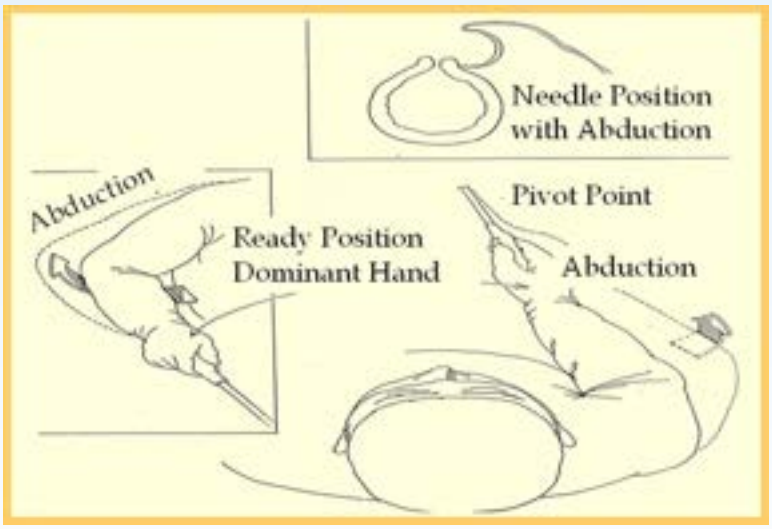


The needle is allowed to rest on the tissue and then it is grasped with the assisting needle grasper. The point to be grasped on the needle is the junction between the proximal and middle third of the needle. Needle can be manipulated indirectly by manipulating the thread with the needle holder to achieve final upright position. Direct manipulation of needle by the needle driver and the assisting grasper may be time consuming. Once the needle is placed in upright position in the non dominant hand assisting grasper then it is handed over to the needle driver for its final position for suturing. This technique is similar to the technique of laparotomy suturing.

Taking A Bite With Needle:

The elbow of the dominant hand should be abducted 60-90 degrees away from the body. Extension of the dominant hand laterally to penetrate the tissue and rotation of the needle through the tissue

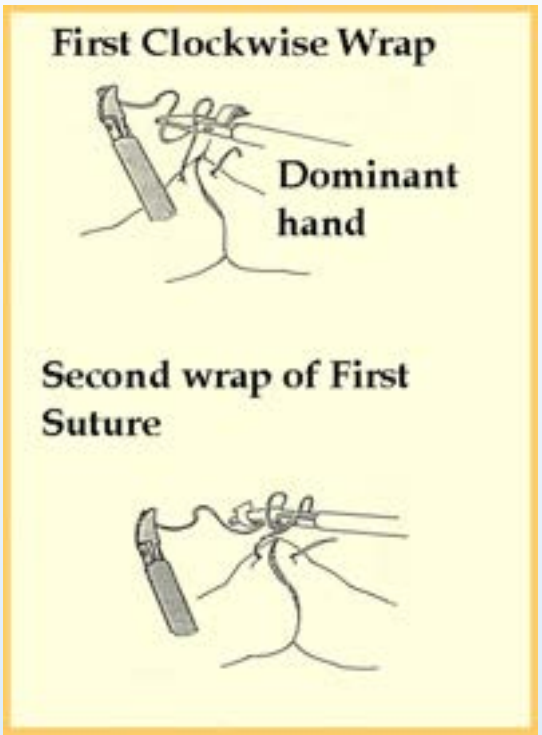
Premature rotation of the needle greatly reduces the suturing efficiency

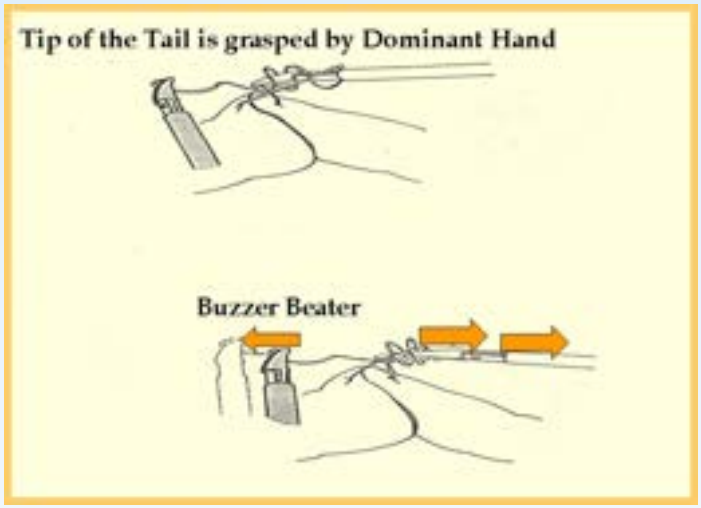


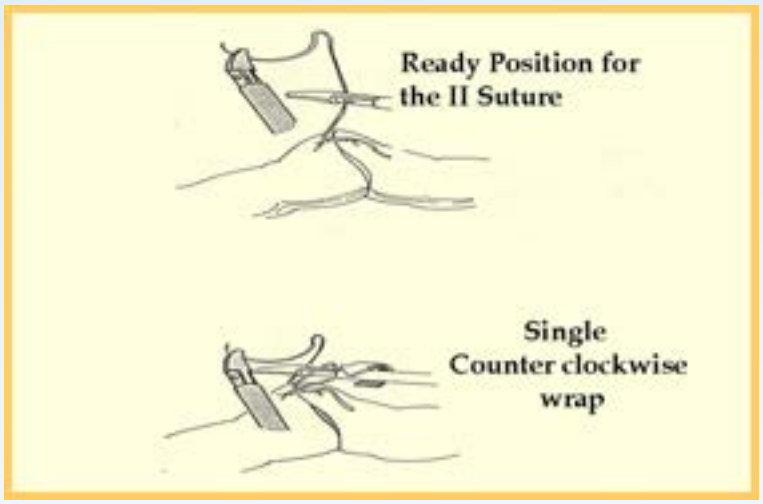
At all times, the needle should be maintained in an upright position so its tip comes through the tissue freely. This allows grasping of the tip of the needle with the non-dominant hand instrument without any interference & reduce the manipulation of the needle while tying the intracorporeal knots

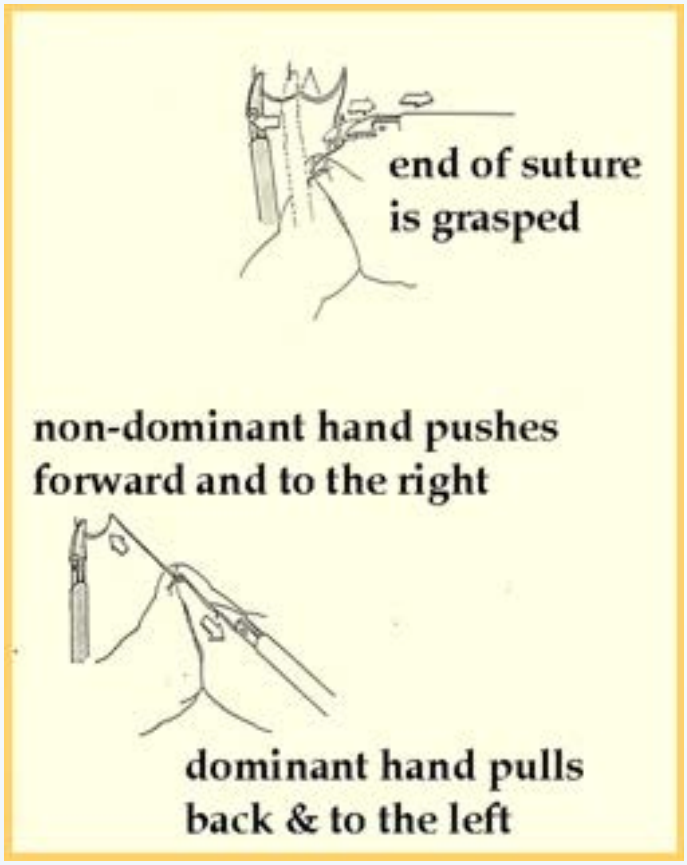
By holding the needle at a right angle to the long axis of the non-dominant hand grasper one should maintain the concavity of the needle facing up for tying the knot

With the dominant hand grasper the thread is pulled out keeping a short tail of 1.5-2 cm to prevent entanglement of the suture while tying knot Wrapping manoeuvre is accomplished using both hands









"There is no substitute to hard work"

MOGS PAST EVENTS

IMPORTANCE OF PROTEIN IN PREGNANCY

Dr. Rahi Pednekar
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Proteins are the major building blocks of human body. Proteins are degraded into amino acids which are then carried to the blood from small intestines. Amino acids are used for a wide variety of structural proteins and enzymes; and they serve as a source of energy, carbon, and nitrogen. There are 20 amino acids out of which 9 are essential amino acids which human body cannot synthesize and hence it must come from diet.

The proteins which have all essential amino acids are called “complete proteins”. Animal proteins, soy, quinoa are complete proteins. Proteins which lack any of the essential amino acids are called “incomplete proteins”. Most plant derived proteins are incomplete proteins. Hence plant foods can be combined with each other to form complementary pairs to make it a complete protein e.g. rice and beans. For meeting metabolic needs and promoting satisfactory rates of protein synthesis, the diet must provide amino acids of adequate quality and quantity.

Protein has an energy value of approximately 5.5 kcal/g. Of this, approximately 4 kcal/g is used during metabolism; the unmetabolized portion is excreted as urea and other compounds.

Pregnancy complicates the already complex metabolism of amino acids. Expansion of blood volume and growth of the maternal tissues require substantial amounts of protein (table-1). Growth of the fetus and placenta also places protein demands on the pregnant woman. Thus, additional protein is essential for the maintenance of a successful pregnancy and to support increasing maternal and fetal metabolism.

Table - 1 : Factorial Estimate of Protein Components of Weight Gain in a Normal Full-Term Pregnancy1

Component	Weight, g	Protein, g
Fetus	3,400	440
Placenta	650	100
Amniotic fluid	800	3
Uterus	970	166
Blood	1,250	81
Extracellular fluid	1,680	135
Total	8,750	925

There is growing interest in the functional roles of certain AAs in mammalian pregnancies. One of which is, L-arginine (Arg), which has been properly recognized as a "conditionally essential AA" in the diet, especially for embryonic growth and survival.

Results of recent studies indicate that Arg enhances placental angiogenesis and growth to improve blood flow across the placenta, thereby increasing nutrient transfer from the mother to her fetus. NO and polyamines are also necessary for implantation, and they are known to regulate steroid hormone synthesis and stimulate cell proliferation and migration in the conceptus (embryo and its associated extra-embryonic membranes). Hence, dietary supplementation of Arg has been found to improve reproductive performance and increase embryonic survival and growth.2

Dietary supplementation of 3g of Arg daily for four weeks to women with pre-eclampsia reduced blood pressure, improved fetal health and growth, and also beneficially prolonged pregnancy. In addition, daily intravenous infusion of 20 g Arg for seven days during late gestation (week 33) increased birth weight by 6.4% in IUGR babies.2 Furthermore, Arg supplementation also decreases placental apoptosis and improves development of IUGR fetuses.2

Maternal nutrition during all trimesters plays a critical role in fetal survival, growth, and development. Therefore, both maternal undernutrition and overnutrition can be detrimental to the developing fetus (table-2). Specifically, insufficient or excessive maternal dietary protein intake can cause lifelong consequences for the neonate due to fetal programming (the heritable changes in gene expression without alterations in DNA sequences within the genome). Malnutrition alters expression of the fetal genome, leading to metabolic disorders, organ dysfunction, hormone imbalances, and cell signaling defects.

High maternal dietary protein intake is also linked to IUGR and can cause fetal or neonatal death due to ammonia toxicity (figure-1). Excess production of other metabolites of AAs, such as homocysteine, H2S and indoles, may also impair embryonic/fetal survival and growth.3

Table-2: Adverse consequences of excessive or inadequate intake of dietary protein or amino acids (AAs) in humans

Excessive protein/AA intake in humans
1. Intrauterine growth restriction
2. Reduced placental transport and umbilical uptake of AAs
3. Low birth weights
4. Increased abdominal visceral fat in fetuses
5. Decreased insulin-like growth factor-II activity

Inadequate protein/AA intake in humans
1. Intrauterine growth restriction
2. Preterm labor
3. Pre-eclampsia

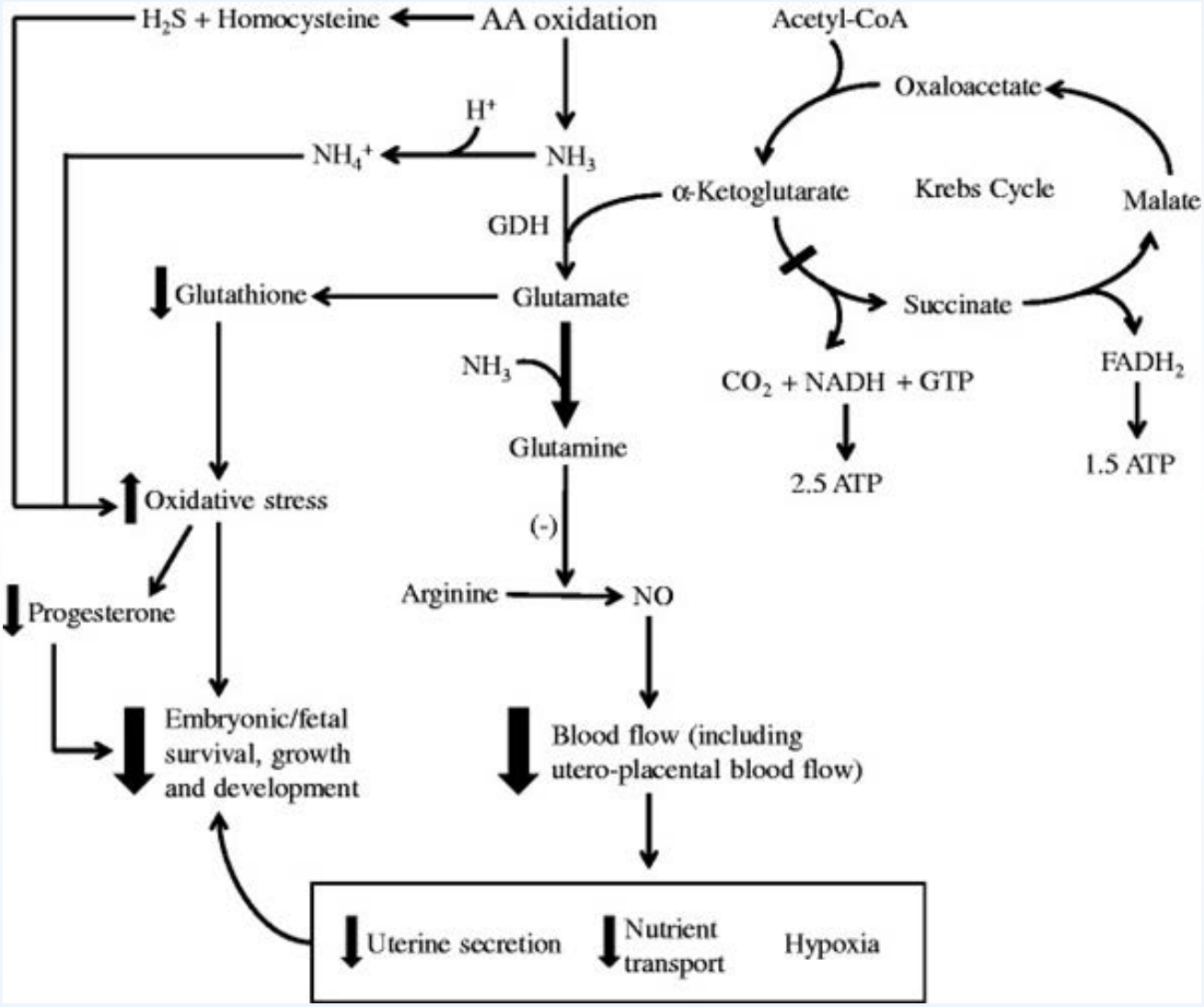

Figure-1 depicts effects of ammonia toxicity on embryonic/fetal growth.4

Maternal dietary protein deficiency decreases amino acid availability to the fetus, thereby contributing to retarded fetal growth. Decrease in concentrations of the essential and nonessential amino acids in the fetus may be a mechanism whereby maternal dietary protein restriction results in fetal growth retardation. Maternal protein restriction, results in decrease in amino acid concentration in maternal and fetal plasma as well as in fetal amniotic and allantoic fluids, suggesting impaired placental transport of amino acids.11

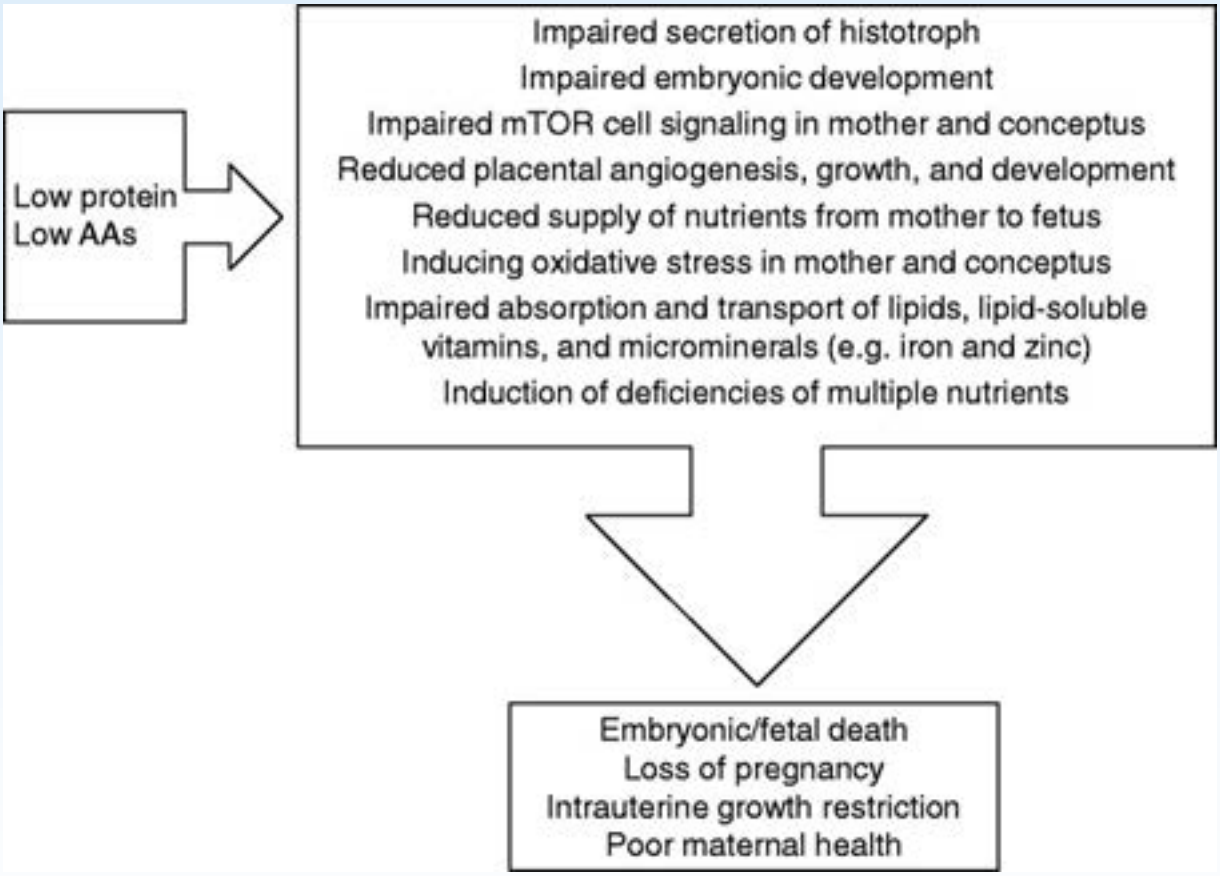

Figure-2 summarizes mechanisms responsible for adverse consequences of maternal protein malnutrition and deficiencies of AAs (e.g., Arg and Gln) on fetal growth and development.4

Requirement:

The deposition of protein is not necessarily linear throughout pregnancy. During early pregnancy, the fetal component is minimal, whereas the requirement for maternal volume expansion and tissue growth may be significant. Later in pregnancy, the fetus may account for the major increase in protein needs.

Recommended protein intake during pregnancy is 60g/day, which represents an increase from 46g/d in non-pregnant states. In other words, this increase reflects a change to 1.1g of protein/kg/day during pregnancy from 0.8g of protein/kg/day for non-pregnant states.5
The recommended daily allowance for protein during lactation is an additional 25 g/day.

Food Sources:

Lean meat, poultry, fish and eggs are great sources of protein. Other options include dairy, beans, peas, nuts, seeds and soy products.

The Food and Drug Administration says you can safely consume up to 12 ounces of cooked, low mercury seafood each week while pregnant or breastfeeding. Three ounces of safe options like salmon, sardines, cod, tilapia, shrimp, or canned light — not albacore — tuna supply 15 to 23 g of protein.

Food	Serving size	Protein content
Cottage cheese	1 cup (226 g) low-fat, 1% milk cottage cheese	28g
Poultry	3 oz. (86 g) boneless, skinless grilled chicken breast	26g
Fish	3 oz. (85 g) canned pink salmon with bones	17g
Lentils	1/2 cup (99 g) boiled lentils	9g
Wheat germ	2 tablespoon	3.3g
Whole oats, amaranth, spelt, quinoa, or wild rice	1 cup	6-11g
Milk	1 cup (237 mL) skim milk	8g
Soy milk	1 cup	6-7g
Yogurt (depending on the fat content)	1 cup	8-14g
Peanuts, walnuts, cashews, pistachios, and almonds	1 ounce (about a handful)	4-7g
Pumpkin, sunflower, chia, flax and sesame seeds	1 ounce (about a handful)	5-9g
Peanut butter	2 T (32 g) peanut butter	7g
Eggs	1 large hard-boiled egg (50 g)	6g

Source: USDA National Nutrient Database for Standard Reference, Release 28

Protein powders:

Protein in a protein powder can be sourced from animal (dairy)- whey or casein, from egg or from plant. It should at least have 15 mg of protein per serving.

Things to check while prescribing protein powder routinely to antenatal mothers:

- It should be devoid of caffeine, excessive vitamins/ micronutrients, herbal supplements, artificial sweeteners, fillers or flavouring agent.

- Where the powder is sourced from:

  - If the product is free of pesticides, chemicals, and hormones. Dairy products often contain traces of hormones such as rBGH (bovine growth hormone) which is not good for the foetus. If choosing a whey protein powder, opting for a grass-fed option will provide anti-inflammatory omega-3 fatty acids.

  - Plant-based protein is good when it's organic.

WHO recommendations on antenatal care for a positive pregnancy experience6:

a) antenatal nutritional education with the aim of increasing energy and protein intake in the general obstetric population appears to be effective in reducing the risk of preterm birth, low birthweight, increasing head circumference at birth, increasing birthweight among undernourished women, and increasing protein intake.

b) Balanced energy and protein supplementation (i.e. an energy supplement in which less than 25% of the energy is from protein) seems to improve fetal growth, and may reduce the risk of stillbirth and infants born small- for-gestational age. Balanced-protein supplementation alone had no significant effects on perinatal outcomes.

c) High-protein supplementation (i.e. an energy supplement in which more than 25% of the energy is from protein) does not seem to be beneficial and may be harmful to the fetus.
Hence, it is prudent to emphasize on "balanced energy and protein supplements" during pregnancy for positive pregnancy experience.14

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Practical tips and tricks for approaching Erectile Dysfunction in Gynecological practice

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Introduction

Erectile Dysfunction (ED) may present as failure to get an erection, or as an erection that is poorly sustained or not rigid enough. History of ED in infertile couples is often missed leading to unnecessary tests.

The following are the common scenarios with ED that a gynecologist may encounter:

- Unconsummated marriages
- ED post marriage in young couples
- Infertility due to infrequent intercourse
- Periovulatory ED
- ED in middle aged men (reported to gynecologists by wives)

Evaluation

Psychogenic ED can arise from a number of personal, inter-personal, marital, social or psychological factors. Some of these issues will need professional help but many problems can be detected and remedied by a gynecologist who is willing to take the time to talk to the man, and his partner, individually and together. Some helpful questions are listed in table-1, but just listening to their history will often give the experienced doctor many clues to the problem.

Table-1: History

History	Remarks
Since how long? when was it normal?	Sudden onset is usually psychogenic
Libido - Desire for sex ? Frequency of masturbation?	Low desire but frequent masturbation indicates normal libido but discomfort with intercourse
Erection during masturbation ?	If normal it suggests psychogenic cause
Sexual fantasies and preferences	Can explain lack of arousal with partner
Morning erections: rigidity, frequency	If normal it excludes organic pathology
Rigidity and sustainence of erection	Quantifies degree of ED
Penetration	Partial or full? Easy or painful? Lubrication?
Orgasm	Reached? Satisfaction? (both partners)
History of treatment taken in past	Decides next line of therapy
Medical History	Diabetes , Hypertension , IHD , Hyperlipidaemia, Smoking, are risk factors for organic ED

Ongoing Medications	Nitrates – oral ODE5 contra -indicated, Psychiatric medications – cause ED, delayed ejaculation
H/O penile , pelvic , back trauma	Neurological or vascular damage
Relationship History	Fight , stress , partners interest in intercourse
Female History	Vaginismus , satisfaction , sexual problems

Most gynecologists are reluctant to examine male patients, especially ones with ED. While examination is always preferable, gynecologists can start initial treatment without a physical evaluation or any investigation.

Therapy

Sex education and counseling. A significant proportion of young couples with sexual dysfunction are sexually naïve - basic sex education and advice on inter-personal relationships can be very helpful to them, and these are well within the skills of a mature gynecologist. If there is severe marital stress or psychological problems then referral to a suitable expert should not be delayed.

Oral medication – PDE5 inhibitors. The availability of phosphodiesterase-5 (PDE5) inhibitors has simplified the management of ED. Two main PDE5 inhibitors available in India are sildenafil and tadalafil.

The dose of sildenafil is 50mg or 100mg, on demand, consumed one hour before sexual activity. The effect lasts for up to 8 hours giving an adequate window of opportunity. A heavy meal can delay absorption. It is important to tell the couple that the drug will not automatically give an erection. It is a facilitator – it will help obtain, maintain and regain an erection if there is sexual stimulation. Hence, the couple have to attempt intercourse after taking the tablet. Often, men report that they were waiting for an erection and “nothing happened”. If there is very high level of anxiety, or lack of arousal, then the medication will not work.

It can be safely given to most men, including those on medication for diabetes, hypertension, or depression. The only contra-indication is concomitant use of nitrates in any form. Minor side-effects (seen in 10%) that the patient should be cautioned about are headache, warmth in the body, redness of the eyes, acidity, nasal congestion or bluish discoloration of bright lights. These pass in a few hours.

Tadalafil has a similar action to sildenafil. However the half-life is much longer, so the drug is effective for 36 hours. On demand dose is 10 mg or 20 mg, 2- 3 hours before intercourse. Because of its long action it can also be given in a daily dose of 5 mg. PDE5 inhibitors can be safely used by couples trying for a pregnancy.

Intra-penile injections

Oral agents will fail if there is high sympathetic tone due to anxiety or if there is a neurological or vascular problem. Many of these men will get a good erection with an intra-penile injection of a vaso-active mixture containing papaverine and chlorpromazine. Responders are taught intra-penile self-injection and are instructed to take the injection at home 10 minutes prior to intercourse. This has proven highly effective in many cases of severe psychogenic ED and unconsummated marriage where the stress levels are high. After a few successes with the injection the patient can switch to oral medication, and eventually stop all medicine.

Surgery

If there is severe ED, that did not respond to the above measures, a final cure can be provided by implantation of a penile prosthesis. This consists of a pair of silicon rods (inflatable or non-inflatable) that are surgically placed in the two corpora cavernosa and provide enough stiffness for intercourse. Orgasm and ejaculation is preserved. Many young men have fathered children after a penile implant.

Some men have tight phimosis and may need circumcision. Rarely, severe congenital penile curvature may be the cause of non-consummation and would need surgical correction.

Specific clinical scenarios

Unconsummated Marriage – This is a surprisingly common problem in our population, and unfortunately treatment is frequently delayed due to shyness, misconceptions about treatment, and ignorance even amongst doctors. Non consummation should be treated as a semi emergency and it is important to start therapy as soon as possible. Delay results in frustration, anger and loss of intimacy, and makes subsequent therapy more difficult.

Basic sex counseling to correct misconceptions, allay fears, and teach correct techniques , positions and anatomy, can be done by the gynecologist. Social counseling helps improve interpersonal communication between husband and wife.

Women with vaginismus or fear of pain during penetration should be taught vaginal self-dilatation. When she is able to insert a large diameter dilator this alleviates her fear of penetration and allows her to relax during intercourse. This is a very important step in treatment of the couple but is often ignored by gynecologists who do a single-finger PV examination and then reassure the wife that she is fine (and the problem is therefore with her husband!). The man's erection can be supported with oral or injectable agents till they are successful and he gains confidencel

ED post marriage in young couples – Counseling about interpersonal relations and balancing work and family life, and life-style advice by a mature authority figure like the family gynecologist, can play a vital role in setting the couple on track.

If premature ejaculation is the issue then dapoxetine 30mg or 60mg, one hour before intercourse, can be advised to help prolong intercourse. If the man has a very hectic work schedule that leaves him too tired for sex then supportive treatment in the form of sildenafil 50 mg one hour before intercourse, or a daily 5 mg dose of tadalafil can help.

Periovulatory ED – the gynecologist should be sensitive when advising couples about the fertile period. The couple should be told that sperm will survive inside the female tract for 48 hours and so there is no need to worry about matching intercourse exactly with the time of ovulation. They should have sex as per their natural urge, and alternate day intercourse during the fertile period is fine. PDE5 inhibitors can be used safely if erectile support is needed.

Infertility due to infrequent sex - Some couples are unable to have frequent intercourse due to hectic lifestyle or infrequent cohabitation. Counselling regarding the frequency of intercourse and timed intercourse according to ovulation can help. Situational or performance anxiety during this period can be overcome by "on demand sildenafil".

ED in middle aged Men, brought by wives – Quite frequently women in their 40s or 50s will complain to the gynecologist about diminished desire or erections in their partners. The etiology is often due to endothelial dysfunction related to diabetes, hypertension or hyperlipidemia. In such cases it is important to explain to the wife, who is often feeling unattractive and unwanted, that the problem is a physical one and is not due to loss of interest on part of the spouse. PDE5 inhibitors can be very helpful and the couple should be reassured that it is safe to take these medicines long-term since couples are often scared due to various misconceptions about these drugs. The gynecologist can also probe for psycho-social factors and encourage lifestyle changes with correct diet and exercise.

Conclusion

The gynecologist will encounter ED in a variety of clinical situations. Even though not trained in the management of ED the gynecologist can help many of the couples through commonsense counseling, basic sex education and the judicious use of PDE5 inhibitors. When a problem is not solved by these measures the gynecologist should be prompt in referring to a specialist since early intervention helps avoid a lot of stress and frustration, and make therapy easier.

MOGS FIT IS IT: HEALTH STARTS WTH US!

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Managing Committee Member MOGS

Although gynaecologists have selflessly contributed to the health and well-being of daughters women and grandmoms of our society there is a need to address the health and well-being of thedoctors themselves. Long work hours frequently contribute to stress related consequences as well as mind and body wear and tear.

Attention to the well-being of the following parts of the body are some of the important steps to reduce aches and pains which come as part of our wonderful profession.

1. Eyes : Constant focus during surgeries and in particular looking at the screen during endoscopy can result in dry eyes and fatigue. This can be reduced by blinking exercise and application of cold packs.

2. Neck: Our neck is frequently at odd angles and not in the normal anatomical position. It is often flexed while operating and simple neck rotational exercises can help reduce neck pain.

3. Upper back: gynaecologists frequently bend during hospital examinations as well as during
surgery and the upper back faces the brunt of this. Sitting in a chair and rotating upper part of a
body clockwise and anticlockwise as well as forwards and backwards is useful.

4. Lower back: The lower back and buttocks support the entire body and are needed to be in shape to prevent any unforeseen accidents. A brisk walk and some stretching exercises (snake and prayer position) help to reduce stress on the lower back.

5. Hands: Operating and even sitting at a desk writing produces a lot of stress on the fingers and hands. This can be reduced by opening and closing exercise for a few minutes.

6. Feet: As we are constantly on our feet , they take the weight of our entire body and must be givenrest for sometime during the day. Rotational exercises as well as flexion extension can lead to some relief.

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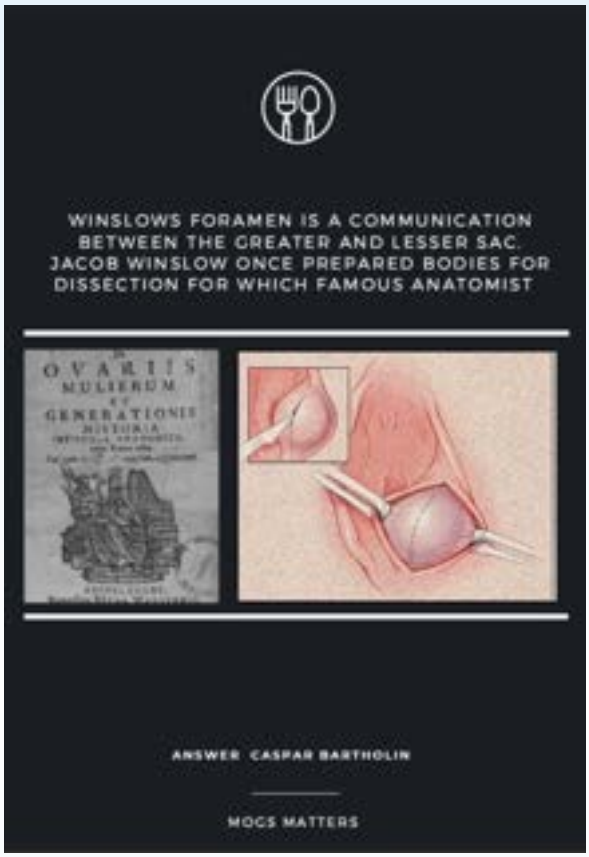
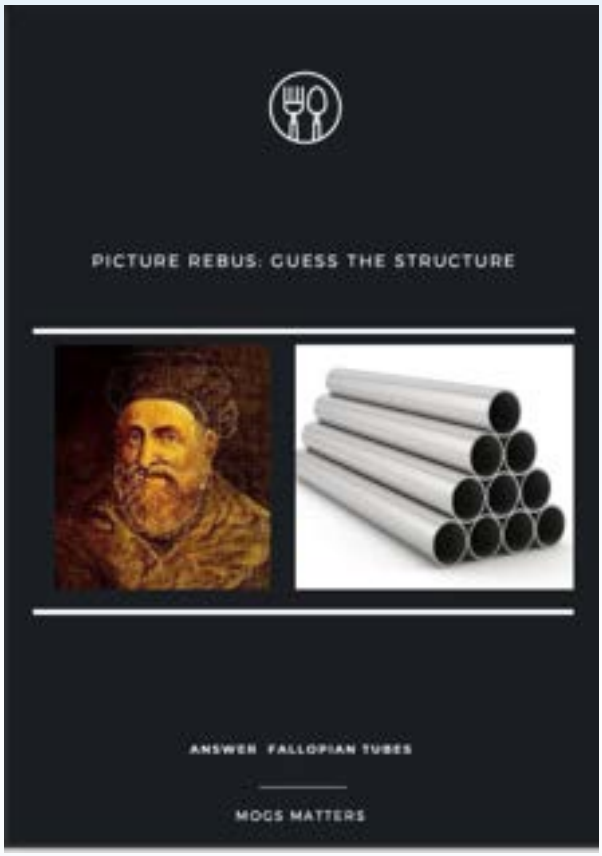
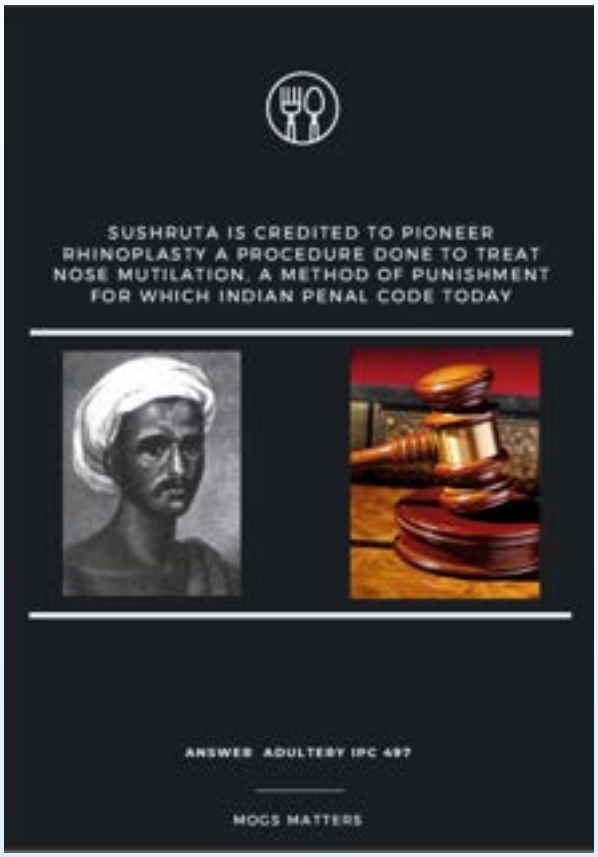
QUIZ







URODYNAMIC STUDIES

What Every Obstetrician Should Know.....

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Urodynamic studies (UDS) describes a group of physiological tests that are used in clinical practice to investigate abnormalities of lower urinary tract function. It is the dynamic study of transport, storage & evacuation of urine.

Urodynamics has two basic aims:
To reproduce the patient's symptomatic complaints during urodynamics and to provide a pathophysiological explanation by correlating the patient's symptoms with the urodynamic findings; i.e. to determine the cause.

Common female urological problems that require involvement of a Urologist and urodynamic assessment in selected cases are: (1) Genuine stress urinary incontinence i.e. involuntary leakage due to sudden rise in intra-abdominal pressure; when intravesical pressure exceeds intraurethral pressure in absence of detrusor overactivity. (2) Overactive Bladder i.e. urgency, usually with frequency and nocturia, with or without incontinence, in the absence of UTI or other obvious pathology. (3) Diagnosis is uncertain/mixed disorder (stress + urge); (4) Surgery is being considered for refractory genuine stress urinary incontinence (SUI); (5) Failure of multiple surgical corrections; (6) Overflow incontinence i.e. involuntary release of urine from overtly full bladder, often in absence of urge to urinate. It is usually associated with bladder outlet obstruction. (7) Lower urinary tract symptoms (LUTS) due to Bladder outlet obstruction / mental stenosis with elevated postvoid residue. (8) Neurological condition / Diabetic cystopathy and (9) Marked pelvic organ prolapse

UDS Armamentarium includes Uroflowmetry, filling & voiding cystometry, urethral pressure studies and pressure flow micturition studies; in selected cases video-urodynamic studies and electromyography. Clinical role of UDS is in characterization of detrusor function, evaluation of bladder outlet, evaluation of voiding function, diagnosis and characterization of neuropathy.

Urodynamic equipment and set up consists of : 1. Urodynamic table /couch 2. Catheters (double lumen catheter for bladder filling/ intravesical pressure measurement and rectal balloon catheter for intra-abdominal pressure measurement). 3. Pressure transducers and EMG electrodes. 4. Uroflow meter. 5. Display monitor and printer. 6. Computer software program installed on PC– for secure storage of pressure and flow measurement data. (fig. 1)

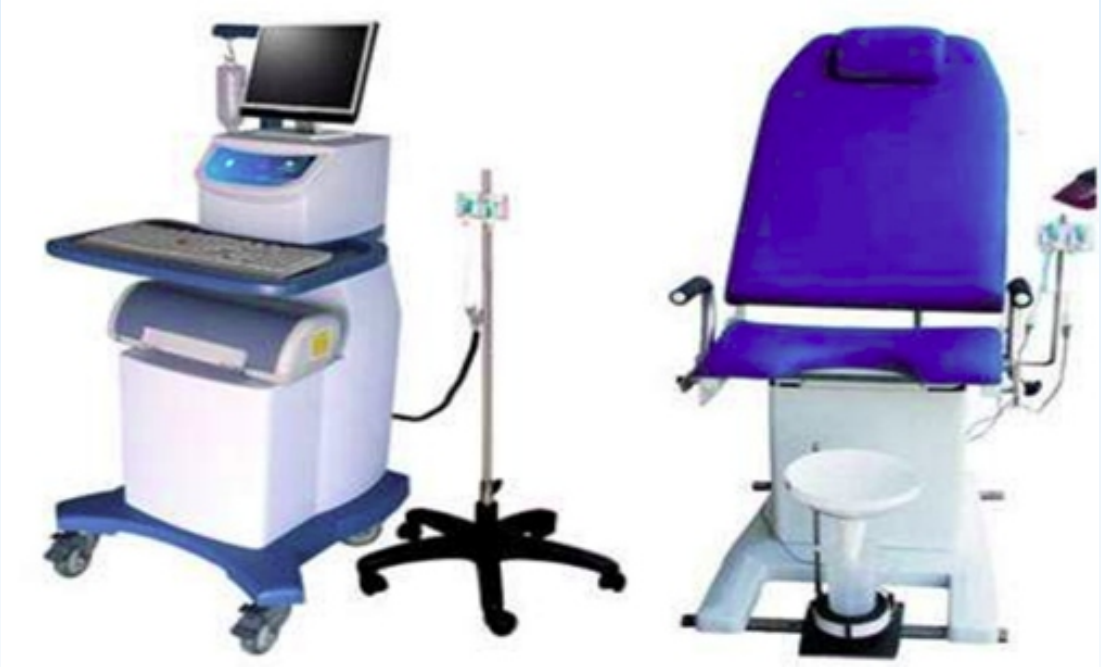


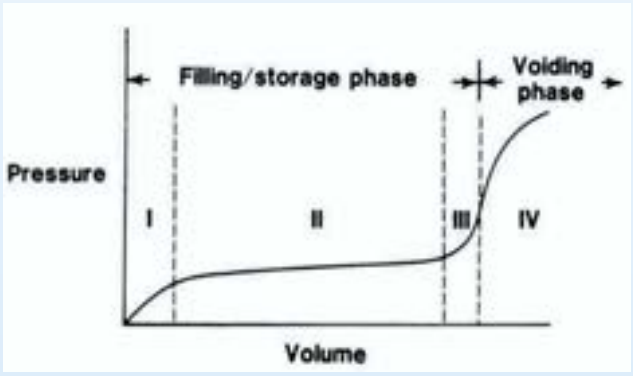
Fig . 1

Uroflowmetry (noninvasive) is the measurement of the rate of urine flow over time. Normal flow rate is 15-25ml/sec. Time to peak flow is the estimate of effectiveness of the act of voiding along with PVR. It is influenced by effectiveness of detrusor contraction, completeness of sphincteric relaxation and patency of the urethra.

Cystometrography (CMG) is used to assess bladder sensation, capacity, compliance, urethral function and detrusor activity.

Normal CMG – Maximum cystometric capacity (MCC) - 350-600 ml; volume at first desire to void approx. 50 % of MCC; volume at normal desire to void approx. 75 % of MCC, volume at strong desire to void approx. 90 % of MCC. Constant low pressure that does not reach more than 6- 10 cm H2O above baseline at the end of filling is suggestive of good bladder compliance. Normal compliance >30 ml/cm H2O. Provocative maneuvers (cough, fast fill etc.) should not provoke a bladder contraction normally. There should be no uninhibited detrusor contraction despite provocation. There should be no urine leak on coughing. Voiding cystometry showing detrusor pressure rise of < 70 cm H2O with a peak flow rate of > 15 ml / s for a volume > 150 ml. Postvoid residual urine should be less than 25 ml. (fig. 2)

Phases of cystometrogram



CMG parameters (International Continence Society standardization subcommittee) used for interpretation of Urodynamic Study:

- Intravesical pressure (Pves)
- Abdominal pressure (Pabd)
- Detrusor pressure (Pdet): = Intravesical pressure - Intraabdominal pressure.
- Filling cystometry: pressure and volume relationship of the bladder is measured during bladder filling.
- Compliance: Normal bladder is highly compliant and can hold large volumes at low pressure. Decreased compliance < 20 ml/cm H2O is suggestive of poorly distensible bladder. Impaired compliance with prolonged elevated storage pressures is a urodynamic risk factor and needs treatment to prevent renal damage.
- Detrusor overactivity: Abnormal uninhibited detrusor contractions during the filling phase with or without urine leak. Neurogenic detrusor overactivity is known as detrusor hyperreflexia. Idiopathic detrusor overactivity i.e. overactivity without concurrent neurologic cause is also known as detrusor instability.
- Urodynamic (genuine) stress incontinence is noted during filling cystometry and defined as the involuntary leakage of urine during increased abdominal pressure in the absence of a detrusor contraction.
- Abdominal leak point pressure (ALPP) / Valsalva leak point pressure (VLPP): Intravesical pressure at which urine leakage occurs because of increased abdominal pressure in the absence of a detrusor contraction. ALPP is a measure of sphincteric strength or ability of the sphincter to resist changes in Pabd. ALPP can be demonstrated only in a patient with SUI. There is no normal ALPP, because patients without stress incontinence will not leak at any physiologic Pabd. Lower the ALPP, weaker is the sphincter.
  ALPP<60 cm H2O: significant ISD
  ALPP 60-90 cm H2O: equivocal
  ALPP>90 cm H2O: urethral hypermobility; little or no ISD
- Detrusor leak point pressure (DLPP): Lowest detrusor pressure at which urine leakage occurs in the absence of either a detrusor contraction or increased abdominal pressure. It is the measure of Pdet in a patient with decreased bladder compliance. Higher the urethral resistance, higher the DLPP, the more likely is upper tract damage as intravesical pressure is transferred to the kidneys. DLPP > 40 cm H2O is suggestive of upper tract deterioration.

n cycle. It is the best method of quantitatively analyzing voiding function.

- Urethral pressure: fluid pressure needed to just open a closed urethra.
- Urethral pressure profile (UPP): a graph indicating intraluminal pressure along the length of urethra. UPP is obtained by withdrawal of a pressure sensor (catheter) along the length of urethra. (Fig. 5)
- UPP Parameters:

1. Urethral closure pressure profile : urethral pressure – intravesical pressure.
2. Maximum urethral closure pressure (MUCP) : maximum difference between urethral pressure and intravesical pressure. MUCP <20cm of water is suggestive of poor prognosis after surgery
3. Functional profile length: length of urethra along which urethral pressure exceeds intravesical pressure in women. In most continent women, functional urethral length:approx.3 cm & MUCP is 40 to 60 cm H2O.

Pressure flow micturition studies: Simultaneous measurement of bladder pressure and flow rate throughout the micturition cycle. It is the best method of quantitatively analyzing voiding function.

- Detrusor pressure at maximal flow(Pdet at Qmax): It is the magnitude of micturition contraction at the time when flow rate is at its maximum. It is normal when the detrusor contracts to empty the bladder with a normal flow rate; underactive when either the detrusor contraction is unable to empty the bladder or the bladder empties at a lower than normal speed and acontractile when no measured detrusor pressure change occurs during voiding. Pressure > 100 cm H2O indicate outlet obstruction even if the flow rate is normal. Normal male generally voids with Pdet 40-60 cm H2O and woman with lower pressure around 20-40 cm H2O.

- Urethral function during voiding: Urethral overactivity can be divided into:

- Detrusor-sphincter dyssynergia (DSD) is seen only in patients with neurological disease and most classically in high-level (cervical) spinal cord injury. It is characterized by phasic contractions of the intrinsic urethral striated muscle during detrusor contraction. This produces a very high voiding pressure and an interrupted flow.

- Dysfunctional voiding (DFV) produces the same urodynamic pattern as DSD but occurs in a different group of patients and has a different cause. DFV occurs, most characteristically, in children who are neurologically normal but present with urinary incontinence and/or infections. The interrupted flow in these children is due to pelvic floor overactivity rather than to intrinsic striated muscle as in DSD.

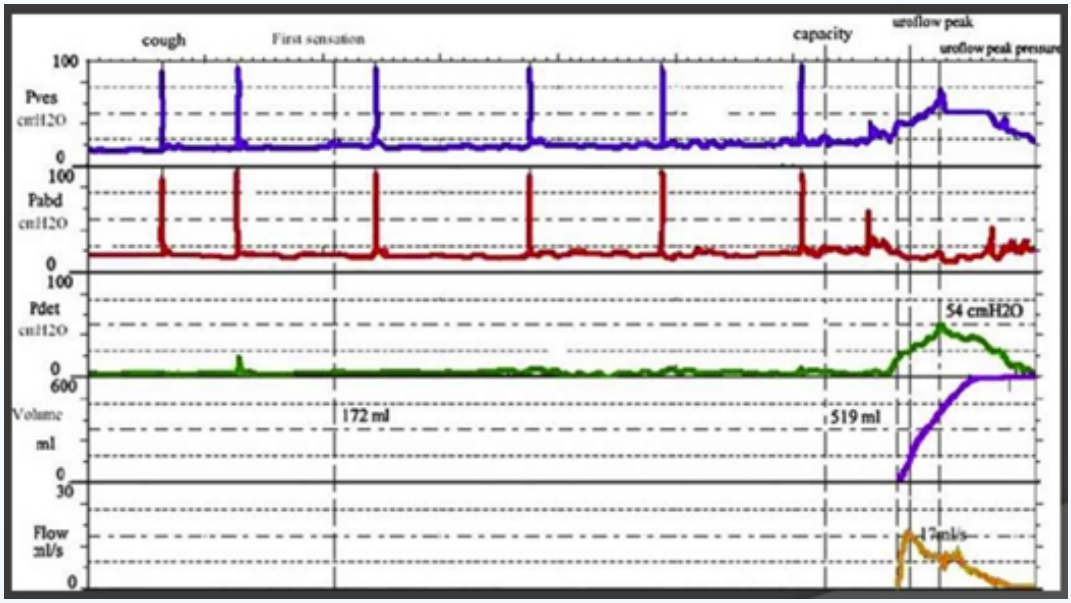
Video-urodynamics - UDS with simultaneous fluoroscopic image of lower urinary tract. Clinical applicability of video – urodynamics is in complex BOO, evaluation of Vesicoureteric reflux during storage &/or filling, neurogenic bladder dysfunction and identification of associated pathology. Diagnosis of primary bladder neck obstruction & differentiation from dysfunctional voiding in women may require video – urodynamics.

Electromyography (EMG) : In case of UDS, EMG measurement of striated sphincteric muscles of the perineum is done to evaluate possible abnormalities of pelvic floor muscle function. Most important information obtained from sphincter EMG is whether there is coordination or not between the external sphincter and the bladder. EMG activity gradually increases during filling cystometry (recruitment) and then cease and remains so for the time of voiding. Failure of the sphincter to relax or stay completely relaxed during micturition is abnormal. In patient with neurologic disease, this is called detrusor-sphincter dyssynergia (DSD). In the absence of neurologic disease, it is called pelvic floor hyperactivity, or dysfunctional voiding.

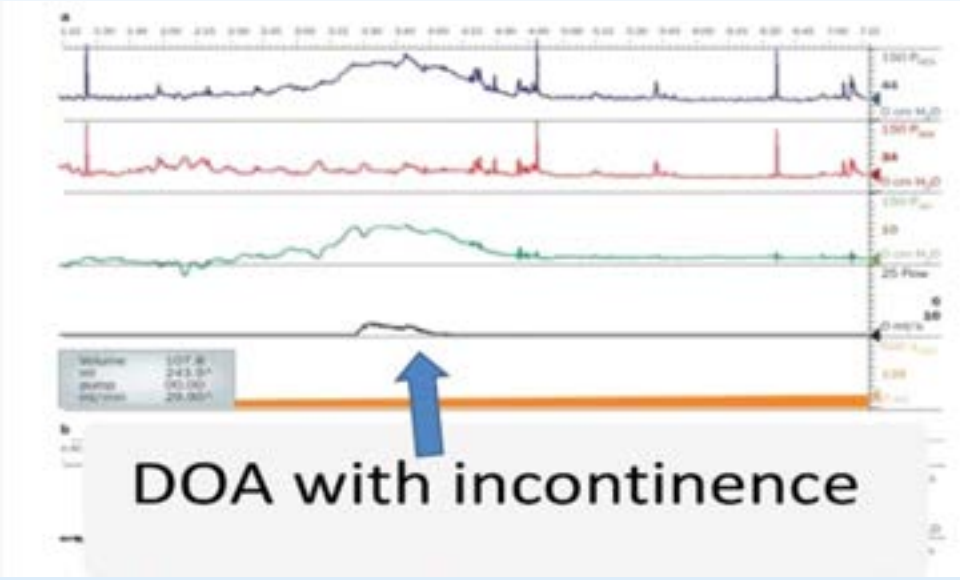
Characteristic features of various types of lower urinary tract symptoms, including urinary incontinence, bladder outlet obstruction and neurogenic bladder, can be identified by Urodynamic studies.

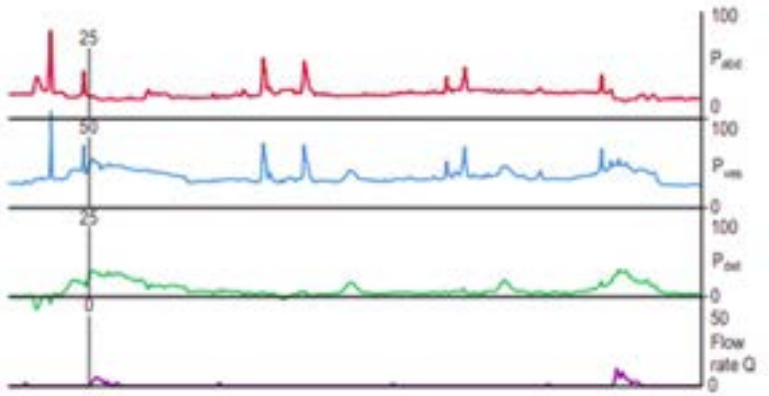
Sample traces of UDS graphs :

Normal UDS Curve (graph. 1)



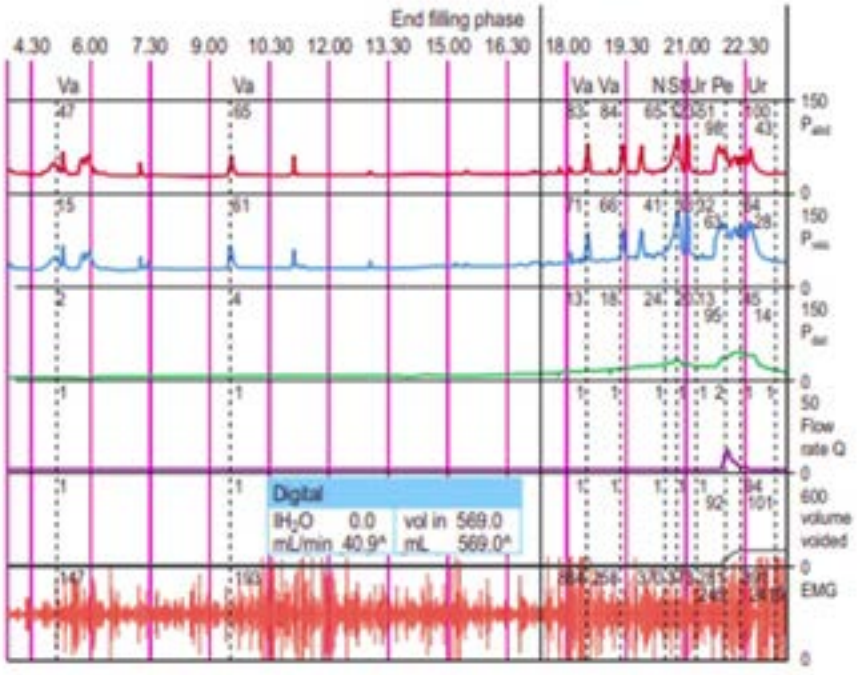
Overactive Bladder (graph. 2)





	Storage phase	Voiding phase
Detrusor function	Detrusor overactivity following coughing	Not shown
Urethral/bladder outlet function	Urinary incontinence due to detrusor overactivity	Not shown
Quality	Acceptable	
Diagnosis	Cough-induced detrusor overactivity with incontinence	

Cough induced detrusor overactivity with incontinence (graph 3)
Detrusor underactivity with DSD (Graph 4)



	Storage phase	Voiding phase
Detrusor function	Normal	Low-pressure void associated with abdominal straining
Urethral/bladder outlet function	Competent	Low flow rate with incomplete emptying; increased electromyography activity compatible with abdominal straining
Quality	Acceptable	
Diagnosis	Poor detrusor contractility (detrusor underactivity)	

Detrusor underactivity (Graph 5)

MOGS UPCOMING EVENTS

3rd-4th April 2021

MOGS Annual Conference Free Papers

Free Paper Team : Dr Gaurav Desai, Dr Madhuri Mehendale, Dr Punit Bhojani
Dr Mansi Medhekar, Dr Priya Vora Thakur, Dr Sanket Pisat

9th-11th April 2021

MOGS Annual Conference

Office Bearer Incharge : Dr Niranjan Chavan, Dr Suvarna Khadilkar
Convenors : Dr Atul Ganatra, Dr Sudha Tandon, Dr Parikshit Tank
Dr Ameya Purandare, Dr. Priti Vyas

18th April 2021

MOGS with World Endometriosis Society:
Refresh Revise and Revisit Endometriosis

25th April 2021

MOGS GSK cme on menopause

Convener : Dr Priya Vora, Dr Punit Bhojani, Dr Riddhi Shah

TRAVELOGUES

Complied by Dr. Riddhi Desai
MS. PGDMLS
Dip Endoscopy (Pune, USA), Dip Office Hysteroscopy (Italy)
Certified Medical Writer

"Travelling – it leaves you speechless, then turns you into a storyteller."
– Ibn Battuta

Wanderlust is an emotion! The past year made us appreciate and cherish this emotion. In 2021, no more just dreaming of bucket lists! We are saying yes to new destinations and to new experiences. The year started on a promising note with the vaccines being rolled out. Let's hold on to hope that the stars will align soon and bring us unrestricted travel. Meanwhile, our young travellers share their most cherished trips to fuel that wanderlust within!

THE MIDDLE KINGDOM

Dr. Nishita Shah
MBBS, DNB
ICOG Certificate Course in Reproductive Medicine

"Honeymoon in China?" This was my reaction when my husband raised the question initially. Well, it turned out to be a crazy, memorable one!

We started off in Lijiang (Yunnan) which is a quaint little town nestled below Jade Mountain (5600m) with one of the world's highest cable cars. The town itself is rather romantic, with a number of boutique shops along the walking street selling everything from perfumes, traditional grain sweets, painter shops, wood crafts, calligraphy stores, etc.

The drive from Lijiang into Sichuan province, took us through one of the world's deepest gorge, the Tiger leaping Gorge, where the Jinsha river squeezes through a 20m gap between two 5000m peaks.

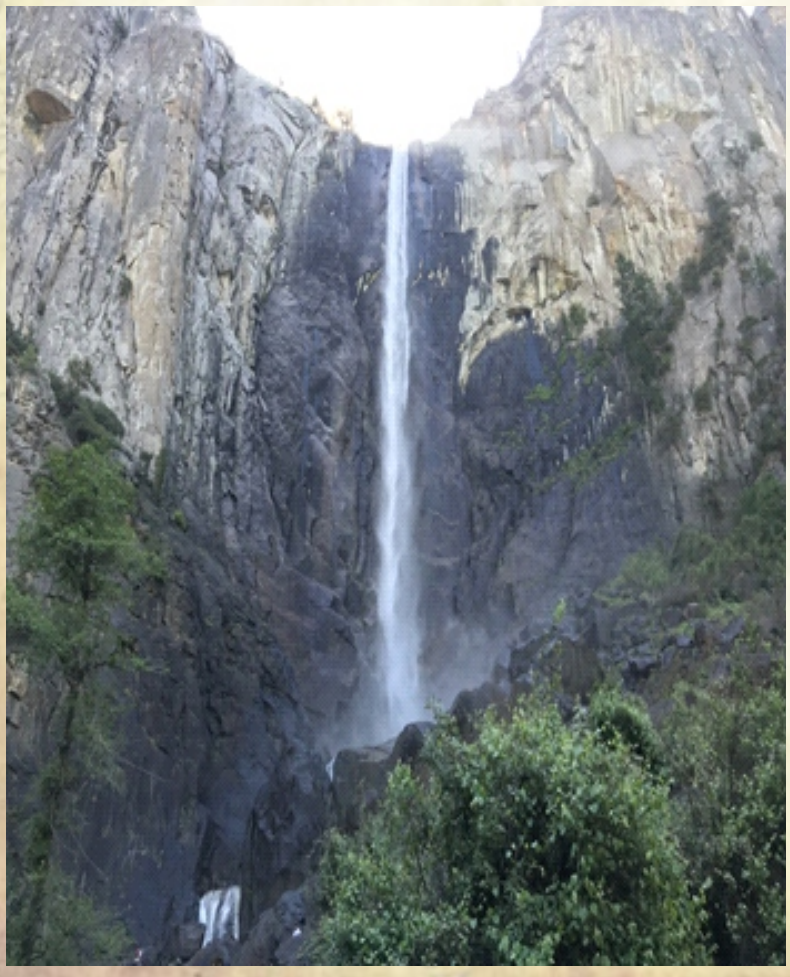
From there on, the road climbs up-to Shangri-La which is the entrance to the Tibetan Plateau of the Sichuan region. The road passes through a number of passes more than 4000 m in Height and towering gigantic mountains.

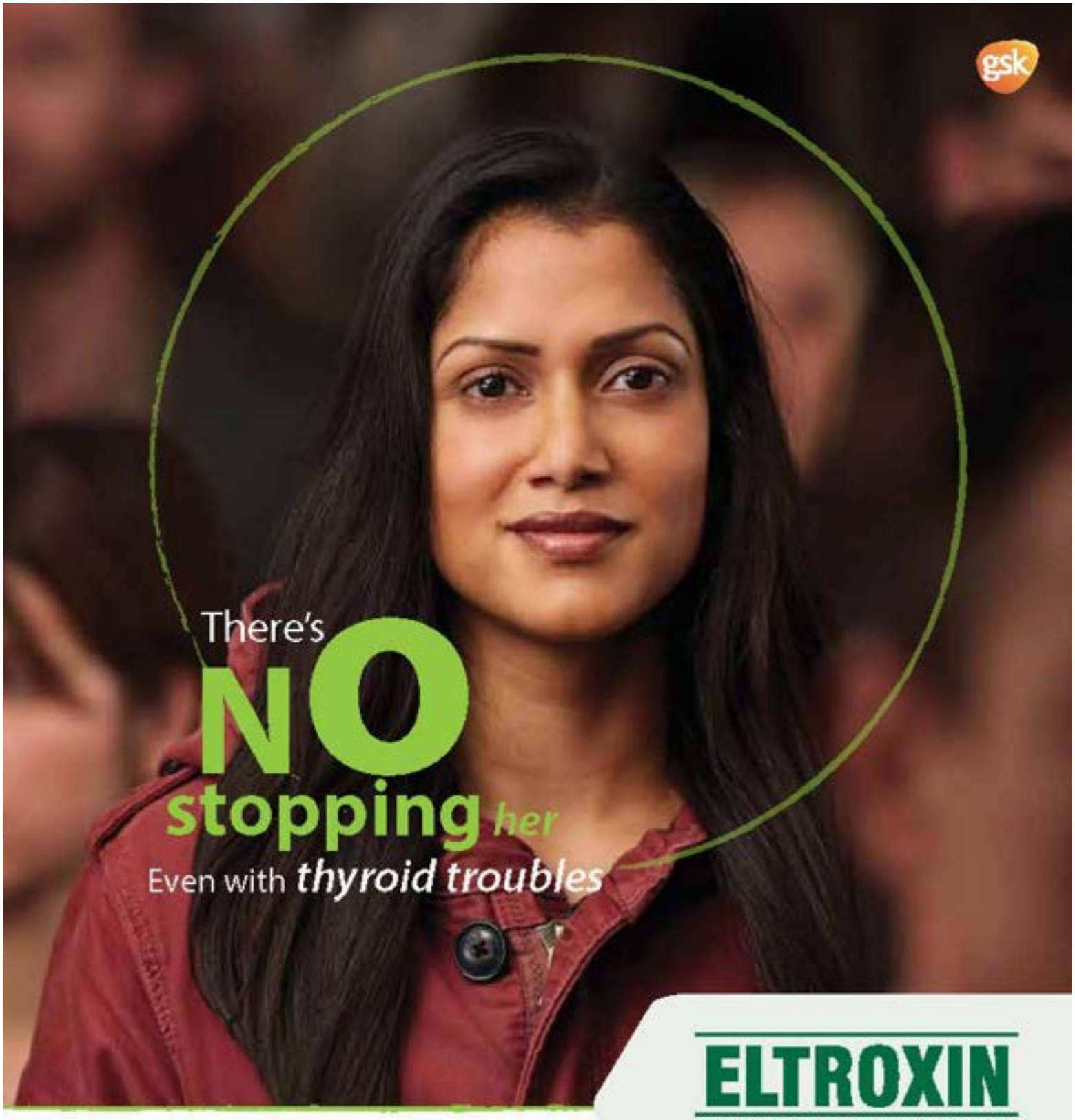
THE MAJESTIC VALLEY

Dr Riddhi Desai

Yosemite National Park, a treasure of natural beauty and breath-taking scenery, is located in the western Sierra Nevada, California. It is a World Heritage Site. Almost 95% of the park is designated wilderness and only 1% of the park is open to tourists for camping. It is home to the famous California Bear.

We came out of the Yosemite Valley moved by its wonders and its power!
Yosemite is a perfect place to disconnect, detox and rejuvenate.
The photos I took to capture the majestic marvels, can never really convey what I saw and felt when I was there, you just need to experience it for yourself





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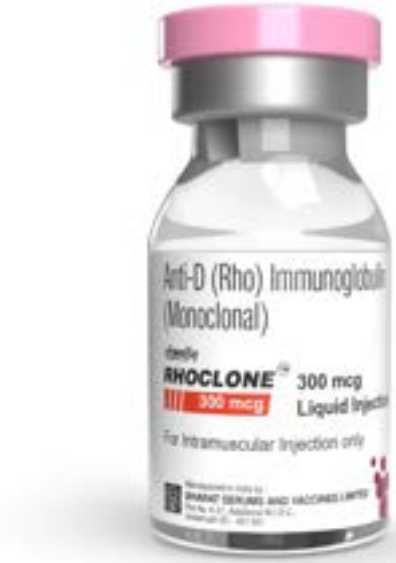

*** ACOG:** American College of Obstetricians and Gynecologists. **** FOGSI:** Federation of Obstetric and Gynaecological Societies of India.

†AWACS SEP 2019.

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Protein Plus: ^Based on in-vitro GIST method results (<55), data on file.GI is defined as the relation of the incremental area under the blood-glucose response curve (Incremental Area Under Curve, IAUC) of a tested meal containing 50 g of digestible carbohydrates and the average incremental area under blood-glucose response curve of a reference food."; ^ Blend of 3 good quality proteins (whey, soy, casein).