

HYPNOSIS AND SELF-HYPNOSIS IN THE PRACTICE OF GYNECOLOGY, OBSTETRICS AND FERTILITY

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The goal of this article is to provide physicians and other health care professionals with a basic understanding of the uses and benefits of hypnotherapy and self-hypnosis in the treatment of a variety of conditions in the practice of gynecology, sexual medicine, obstetrics, and fertility. Topics in this article include: **1.** an introduction to hypnosis; **2.** identification of medical and psychological conditions and circumstances for which hypnotherapy and self-hypnosis are useful and appropriate; **3.** contra-indications; **4.** a brief presentation of hypnotic techniques; **5.** considerations of treatment; **6.** conclusions; and **7.** suggestions for the future. ●

HOW DID ISRAEL BECOME AN "IVF NATION": 40 YEARS SINCE LOUISE BROWN'S BIRTH, THE FIRST IN VITRO FERTILIZATION BABY

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This paper presents the scientific and clinical foundations for making Israel an "IVF nation" during the initial two centuries following the birth of Louise Brown the first In Vitro Fertilization baby. The scientific background was carried out mainly in the Hormone Research department at the Weizmann Institute of Science, while the clinical groundwork was established at two gynecologic departments: Hadassah and Sheba medical centers. Both of these infrastructures had an important and major impact role on the relatively fast implementation of in vitro fertilization in Israel. The original and unique scientific and clinical contributions made by Israel and Israelis to this new treatment placed this country in a prominent and leading role in this evolving field. ●

IN-VITRO FERTILIZATION (IVF) TREATMENT IN ISRAEL: THE PUBLIC FUNDING POLICY AND ITS IMPLICATIONS

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The funding policy of fertility treatments in Israel is generous, extensive, uses advanced technologies and is given to all women in the country. In vitro fertilization (IVF) treatments provide almost unlimited scope for the birth of 2 children for women up to the age 45, above and beyond all countries in the world. This policy, along with the importance people and legislature give to parenthood and family, led to a constant increase in the number of cycles performed in Israel over the years. The National IVF Database, which was set up in 2014, enables making informed decisions, based on up-to-date information, patient and treatment characteristics and outcome.

Israel is in the lower end of the spectrum for pregnancy and live-birth rates per treatment cycle. This stems from committing many treatment cycles in women with poor prognosis for success: according to the national database (2016), 36.4% of all eggs retrieval cycles were performed in women over the age of 40 and only 37.4% in women under the age of 35. Live birth rate per cycle (egg retrieval and embryo transfer) were 31.3, 22.8, 11.4, and 3.8% for women aged <35, 35-39, 40-42, and ≥43, respectively.

Another troublesome statistic was the high number of multiple-births (twins and triplets): 17.5% of the births, 30% of all newborns. In these pregnancies short and long time complications, such as prematurity, low birth weights and neonatal anomalies were considerably higher than in singletons. Pregnancy and live-birth rates from frozen embryo transfers were similar to fresh cycles.

We have to find ways to balance the costs and availability of treatment and avoid treatments with a low chances of success (such as in older women) that come with high-risk to the patient or newborns. Careful weighing of the number of embryos transferred to the uterus will enable reducing the number of multiple pregnancies without a decrease in the number of cumulative births. Public programs and education regarding the relationship between the age of the woman and her chances to give birth, with and without fertility treatments, should be accomplished. ●

FETAL LIFE IN THREE DIMENSIONS

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Most medical examinations are not supposed to cause pleasure to our patients, however ultrasound in pregnancy, when the results are normal, is probably the only examination that can cause a lot of pleasure to the woman and her mate. Three-dimensional ultrasound, along with its medical value (such as diagnosis of the morphing dysmorphic signs in the fetal face), is perfectly suited to emphasize the artistic and entertainment side of the fetal life within the uterus. The following pictures will give a nice "taste" of the three dimensional fetal life. ●

if the splitting occurs later than 8 days after fertilization – it will result in monoamniotic-monochorionic twins.

We report a very rare event of dichorionic triamniotic triplet pregnancy following a transfer of a frozen thawed single 96-hour embryo with morphologic criteria of expanded blastocyst. The pregnancy eventually ended in a missed abortion at 7 weeks. A review of the literature is included. ●

HPV TEST SCREENING FOR THE DETECTION OF PRECANCEROUS CERVICAL LESIONS AND CERVICAL CANCER

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Cytological screening for detecting cervical cancer and precancerous lesions (PAP smear) has proven itself in reducing morbidity and mortality from cervical cancer and should be performed once every 3 years. The main disadvantage of this method is the low sensitivity, and difficulty in identifying precancerous lesions and invasive cancer from glandular origin. In order to improve the sensitivity of the survey to detect malignant and pre-malignant lesions, it has been proposed to use HPV DNA test which detects the women who are carriers of the virus, even those with transitory infection and it is more sensitive than the cytological screening.

The risk of cervical cancer is significantly lower following a HPV test negative, compared with negative PAP. Protection against cervical cancer is significantly higher with HPV test screening. An additional benefit of the HPV DNA test is based on the ability of early detection of glandular cervical lesions, which is not possible in the PAP survey. The chances of developing pre-cancerous lesion or cervical cancer after HPV DNA test negative after 5 years is similar to the risk one year after a negative Pap smear. ●

BAD DESIGN IN THE HUMAN EMBRYO - EVOLUTION IN PRACTICE

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The development of the human body involves processes of modifications and adjustments throughout evolution, which began from our early ancestors. As defined by Lemarck and later on by Darwin, the process is formed according to the theory of descent with modification, with the final result being a complex and sophisticated system, the human body. However, as we describe in this work, despite the adjustments made during evolution, there still exist a considerable number of systems in our body which could

have been better "designed" and "planned". The results of this "imperfect planning" are anatomical defects, with clinical relevance, which we have to deal with on a daily basis. ●

MENSTRUAL SYNCHRONY, MYTH OR TRUTH?

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Menstrual synchrony is a process in which the first day of menstruation in different women merges at the same time. Many factors thought to influence menstruation have been evaluated – moon phase/light, women who live together for long periods of time, pheromones and the presence of the vomeronasal organ. McClintock tried to prove that women who live together for long periods of time and pheromones both caused menstrual synchronization. Other studies conducted later failed to reproduce McClintock results and their authors criticized the methods of McClintock. Many studies performed by an Israeli group have found the existence of menstruation synchrony to be inconclusive. The presence and function of pheromones in humans is still controversial, therefore, their effect on timing of menstruation is questionable. Moreover, the presence and function of the vomeronasal organ in human adults is questionable and so is its effect on menstrual synchrony. ●

LABOR INDUCTION BY ORAL MISOPROSTOL – EFFECTIVE, SAFE, EASY TO ADMINSTRATE AND INEXPENSIVE

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About 15% of pregnancies undergo labor induction. Misoprostol (Prostaglandin E1) has several prominent advantages over other induction methods, mostly related to the possibility of oral administration and its low cost. Nevertheless, this method is not widely used in our country, since the only tablets available in Israel contain 200 mcg Misoprostol, as opposed to the most explored dosage, supported by several guidelines, of 25 mcg. By reviewing literature evidence examining the efficacy of Misoprostol in labor induction, we show that the use of a 50-mcg dose once every four hours is as effective and safe as any other birth-induction method. ●

SPERM SELECTION TECHNIQUES: VISUAL ASSESSMENT VERSUS THE BINDING POTENTIAL TO HYALURONIC ACID

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Background/Aims: The human oocyte is surrounded by hyaluronic acid (HA), which acts as a natural selector. Only spermatozoa expressing HA receptors can reach and fertilize the oocyte. This study aims to compare two sperm selection techniques by correlation to fertilization rates and embryo quality.

Methods: Couples undergoing IVF-ICSI treatment due to mild male infertility were enrolled in a prospective study. According to the randomization, the sperm suspensions were put into a polyvinylpyrrolidone (PVP) droplet or an HA-containing medium droplet (Sperm Slow). In the PVP group motile spermatozoa with the best morphology were selected for injection. From the HA-containing medium those sperm demonstrating vigorous tail beating and an absence of progressive motility as well as good morphology, were selected. Primary outcome measures were fertilization rate and embryo quality.

Results: Thirty couples were randomized to the PVP group and 24 to the slow sperm group; 353 oocytes were injected. There was no statistical difference in fertilization or cleavage rate. Furthermore, in the PVP group, the mean number of embryos was higher and the average morphology of the best embryo was superior.

Conclusion: Considering that the HA-based sperm selection technique is more expensive and time consuming, the current study does not support using it as a routine method. ●

COMPARISON OF TWO APPROACHES FOR PLACENTA ACCRETA: UTERINE PRESERVATION VERSUS CESAREAN HYSTERECTOMY

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Background: Placenta accreta defines abnormally adherent and invasive placentation into the myometrium and in some cases invades adjacent organs. In recent years the incidence of placenta accreta cases has risen due to the increasing prevalence of cesarean delivery. The clinical manifestation of placenta accreta might be life threatening maternal bleeding during the attempt to detach the placenta following delivery. In cases where removing the placenta and controlling the bleeding is not possible, the last option is to perform cesarean hysterectomy.

Aims: To compare the maternal and newborn outcome between cases that underwent conservative surgery with uterine preservation (Group A) to cesarean hysterectomy (Group B).

Methods: A retrospective cohort study, was conducted between the years 2004-2015, in order to compare the above two groups. The data are based on patients' records, surgeon reports and histopathologic specimens.

Results: Data has been obtained from 148 patients, 49 (33%) of them underwent cesarean hysterectomy. For those who underwent cesarean hysterectomy, it has been found that the time of surgery was shorter, 68 minutes comparing to 113 minutes ($P=0.000$), there was less amount of blood loss, 965 ml versus 1658 ml ($P=0.006$), and shorter hospitalization, 8 days compared to 15 ($P=0.004$), in Group B versus A, respectively. In addition, only one patient from Group B developed fever following surgery (2.7%) compared to 22 patients (20.2%) in Group B versus A, respectively ($P=0.009$). The 1st and 5th min of Apgar scores were higher, 9,8 and 10,9 in the Group B versus Group A, respectively ($P=0.027$, $P=0.000$).

Conclusions: For parturient women who have completed their family planning, cesarean hysterectomy without detaching the placenta accreta is the safer treatment option. ●

TRIPLET PREGNANCY AFTER SINGLE FROZEN-THAWED EMBRYO TRANSFER IN IVF

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The ultimate goal of ART treatments is to achieve a healthy singleton pregnancy. The main risk factor for dizygotic multiple birth is the transfer of two and more embryos. Splitting of a single embryo at early stages of development which results in monozygotic twinning is reported in 0.42% of all births in the USA. When an embryo splitting occurs within 4 days after fertilization, then monozygotic dichorionic diamniotic twins develop that cannot be differentiated, in view of embryonic sac structures, from dizygotic twins originating from two fertilized eggs. A splitting of a single embryo between 4-8 days following fertilization, results in monochorionic-diamniotic twins, and

OBSTETRICS, GYNECOLOGY AND INFERTILITY – THE FUTURE IS ALREADY PRESENT

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As in the other fields of medicine, the influence of technology on the advancement of the fields of Obstetrics, Gynecology and Infertility is enormous. The breakthroughs result from the creativeness of clinicians and scientists, to implement those technologies to improve the physical and mental health of our patients. In this special issue, which is devoted to obstetrics and gynecology, we tried to cover some of the topics where technology had a major influence on our practice.

Those subjects included fertility treatments and IVF, where Israeli clinicians and scientists have contributed significantly to the development of this fascinating and challenging field. Furthermore, the introduction of ultrasonography and especially the vaginal probes and the 3-D technologies have revolutionized our fields of obstetrics, gynecology and infertility. They have enabled us to dramatically upgrade our field of fetal-maternal medicine, both diagnostically and therapeutically.

The issue of precancerous and cervical cancer screening in Israel is still under debate. However, the advancement in HPV – DNA diagnosis enhances our diagnosis accuracy and hopefully, will facilitate inclusion into our basic Israeli "medical basket" as a mandatory national screening program. Due to the advances of technology, our field of obstetrics and gynecology has evolved to subspecialties. Fortunately, under my leadership as the president of the Israeli Obstetrics and Gynecology Association between the years 2014-2017, we were able, together with the scientific council of the Israeli Medical Association, to establish formal Israeli fellowship programs in different fields of our specialty. It is our duty to prepare our future generations of gynecologists for the scientific and moral challenges which are already present. ●

Q FEVER IN PREGNANCY – IS IT MORE ENIGMATIC OR IS IT MORE CONTAGIOUS?

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Q fever is a highly contagious zoonotic infection. There is paucity of data regarding Q fever acquisition during pregnancy. Small case series suggested its occurrence may be associated with severe maternal and perinatal consequences. We present a case of a 2nd trimester

pregnant patient diagnosed with Q fever infection during evaluation for fever of unknown origin. This case highlights the challenging diagnosis, treatment and labor management in this setting. ●

PROLONGED SECOND STAGE OF LABOR: CAUSES AND OUTCOMES

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Introduction: Professional bodies have published guidelines defining the length of the second stage of labor and when it is "prolonged", according to parity and epidural anesthesia administration. Recently these guidelines have been extended, aiming to reduce rates of unplanned cesarean deliveries.

Aims: To examine the risk factors and outcomes of a prolonged second stage of labor, in order to understand its causes and implications for mothers and neonates, including the delivery mode.

Methods: A retrospective study based on 26,476 electronic medical records of deliveries to primiparous mothers of a term singleton fetus, at Hadassah Medical Center, between 2003 and 2015.

Results: A prolonged second stage of labor was recorded in 3,225 (12.2%) of mothers (i.e. exceeding 2 hours without epidural anesthesia and 3 hours with it). Epidural anesthesia, persistent occiput posterior, and head circumference or birth weight above the 90th percentile, increased the risk of the prolonged second stage. The risk of unplanned cesarean delivery rose significantly before the 2- or 3-hour cut-off defining a prolonged second stage. Risks of maternal and neonatal complications included: grade III-IV perineal tear, maternal hemorrhage, 5-minute Apgar₅ ≤7, umbilical artery pH < 7.1, neonatal intensive care admission were also increased.

Conclusions: Epidural anesthesia and fetal parameters increased the risk of prolonged second stage; risks of maternal and fetal complications were also increased. The risk of interventional delivery increased significantly well before the defined cut-off.

Discussion: Prolongation of the second stage of labor is a common pathway of many obstetric outcomes. Obstetric management should be based on considerations of individual maternal and neonatal well-being, rather than administrative goals.

Summary: While reducing cesarean rates is an important goal, attempts to achieve this by prolonging the second stage of labor exposes mothers and neonates to excess risk of cesarean and vacuum delivery as well as obstetric and neonatal complications. ●