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GYNAE SPECTRUM

Dear Doctor,
Greetings from Micro Labs. We are happy to bring you "Gynae Spectrum", which contains latest and interesting news in the field of Obstetrics and Gynecology.

This issue contains:

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Best Regards,
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1. A prospective investigation of the cerebroplacental ratio and newborn outcome in low-risk pregnancies with less foetal mobility.

Introduction:

Approximately 40% of pregnant women experience at least one episode of foetal movement restriction (RFM). While most women only have one temporary episode, roughly 4–15 percent of them are sent to prenatal clinics owing to recurrence of foetal movement decrease. Pregnancies complicated by RFM have been linked to poor neonatal outcomes, as well as increased perinatal morbidity and death, according to prior research. RFM in combination with intrauterine growth restriction (IUGR) has also been proven in other studies to predict bad pregnancy outcomes. Fetal movement monitoring is a simple and commonly used approach for assessing foetal health because of the link between RFM and hypoxemia. [1] As a result, it's still uncertain if maternal monitoring of foetal movements to diagnose this condition is beneficial. The ratio of the middle cerebral artery pulsatility index (MCA-PI) to the umbilical artery pulsatility index (UA-PI) is known as CPR, and it is a measure of foetal blood redistribution. [2]

Methods:

The study's objective was to see how efficient the cerebroplacental ratio (CPR) was at predicting bad outcomes in low-risk pregnancies with limited foetal movements (RFMs). This prospective research looked at singleton pregnancies that were 28–40 weeks old and had RFM but no other risk factors. For pregnancies between 36 and 40 weeks, a subanalysis was done. The pulsatility indices (PIs) of the umbilical artery (UA) and the middle cerebral artery (MCA) were measured, and the MCA-PI to UA-PI ratio (CPR) was determined. The mode of delivery, gestational age, foetal monitoring category, Apgar score at 1 and 5 minutes, birth weight, presence of meconium, umbilical artery pH, and NICU hospitalisation were all documented. Doppler indicators and pregnancy variables were examined between women who had favourable and bad outcomes.

Result:

Out of 96 women, 86 had a positive outcome. Between the bad and good result groups, there were no significant differences in UA-PI, MCA-PI, or CPR. At the time of presentation, there

	Good outcome	Poor outcome	P 2-sided Wilcoxon Rank
UA-PI Mean (std. Deviation)	0.815 ± (0.195)	0.840 ± (0.184)	0.599
MCA- PI Mean (std. Deviation)	1.626 ± (0.382)	1.724 ± (0.403)	0.523
CPR Mean (std. Deviation)	2.08 ± (0.655)	2.14 ± (0.762)	0.931

UA, Umbilical artery; PI, pulsatility index; MCA, middle cerebral artery; CPR, cerebroplacental ratio (MCA-PI to UA-PI ratio)

Table 1: Results of Doppler studies in both groups of 36–40 weeks gestational age.

was no change in placenta placement, BPP score, foetal sex, or amniotic fluid index (AFI). In

the poor result group, the proportion of nulliparous patients was greater than that of multiparous individuals. There was no significant difference in UA-PI, MCA-PI, or CPR between the poor and excellent outcome groups after a subanalysis for 36–40 weeks (Table 1).

Discussion:

The objective of this study was to see if there was a link between CPR and newborn outcomes in low-risk RFM pregnancies. There has not been a study that looked at women who had no risk factors for bad outcomes. CPR that is abnormally redistributed to the brain is linked to emergent caesarean delivery owing to foetal discomfort, NICU hospitalisation, and poor newborn neurologic prognosis**.** [3]

When comparing RFM cases to control cases, CPR values assessed in multiples of the median (MoM) were found to be considerably lower in the RFM cases (women at a similar gestational age, but no RFM). They did not, however, examine risk variables, unlike this study. In low-risk RFM instances, unfavourable outcomes such as low Apgar score at 1 minute, greater probability of NICU admission, meconium presence, or caesarean delivery owing to suspected foetal distress were hard to predict just on CPR levels. In other words, in this research group, there was no association between the CPR score and pregnancy outcomes. Furthermore, there was no link between the complaint's features, such as diminished or missing motions, and the pregnancy result. Other research that looked at the CPR index as a predictor of poor perinatal outcomes found that low CPR is linked to an aberrant foetal heart rate, a lower Apgar score, and acidosis in newborns. [4]

The researchers attempted to look at the link between the participants' demographic and obstetric parameters and their pregnancy outcomes. It discovered that nulliparous women with RFM were more likely than multiparous women to have a negative result (80% vs. 20%), which was unexpected because nulliparous women are predicted to be less conscious of RFM than multiparous women. Our findings, however, suggested that we should pay greater attention to RFM in nulliparous women. While placental placement did not indicate adverse pregnancy outcomes, a larger percentage of women had an anterior placenta, which is consistent with earlier research. The gestational age (GA) at the time of the assessment (28–40 weeks) combines two physiopathological situations. [5]

Conclusion:

The findings of the study reveal that CPR cannot be utilised to predict newborn outcomes in low-risk RFM pregnancies. However, this study's finding that nulliparous women had a higher risk of bad outcomes than multiparous women warrants more consideration.

- **In low-risk RFM pregnancies, CPR does not predict neonatal outcome. However, the fact that nulliparous women have a larger proportion of bad outcomes requires additional examination.**

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2. Short interpregnancy intervals and their correlation to placenta accreta spectrum.

Introduction:

The aberrant adhesion of placental trophoblasts to the uterine myometrium is referred to as the placenta accreta spectrum (PAS). As a result, the placenta does not separate from the uterus normally after birth, which can result in serious bleeding and increased morbidity and even death in pregnant women and newborns. [1] The risk of PAS grows dramatically with each consecutive caesarean birth; in patients with four previous caesarean deliveries with a placenta previa, the risk of PAS surpasses 60%. 6 Maternal age, past uterine surgery, in vitro fertilisation (IVF), and twin pregnancy are all risk factors. [2]

Methods:

The objective of this study was to see if there was a link between short interpregnancy intervals and placenta accreta spectrum. A retrospective cohort analysis of patients at risk for placenta accreta spectrum was done. Pregnant women who met the following criteria were included in the study: placenta previa with previous caesarean delivery and/or uterine surgery, anterior low-lying placenta with previous caesarean delivery and/or uterine surgery, 3 previous caesarean deliveries, or any previous caesarean delivery with sonographic findings suspicious for placenta accreta spectrum. The primary result was placenta accreta spectrum, which was proven surgically or histopathologically. A short interpregnancy interval was defined as 18 months between the last delivery and the index pregnancy's final menstrual cycle. The chi-square and Student's t-tests were used for univariable analysis, while Kruskal-Wallis was used for nonparametric variables. Multivariate logistic regression models were used to generate the unadjusted and adjusted odds ratios. P0.2 in univariable analysis or designated a priori as clinically important covariates were chosen. The final models were created by selecting variables in reverse stepwise order.

Results:

With full data, 112 (42.7%) of the 262 individuals at risk of placenta accreta spectrum developed placenta accreta spectrum. Pregnant women with 18-month interpregnancy intervals were no more likely than those with ideal interpregnancy intervals to develop previa (58 percent versus 46 percent) (49 percent vs 40 percent). The placenta accreta spectrum was not linked to a short interpregnancy period of 18 months. When previa and the number of prior caesarean births were taken into account, the

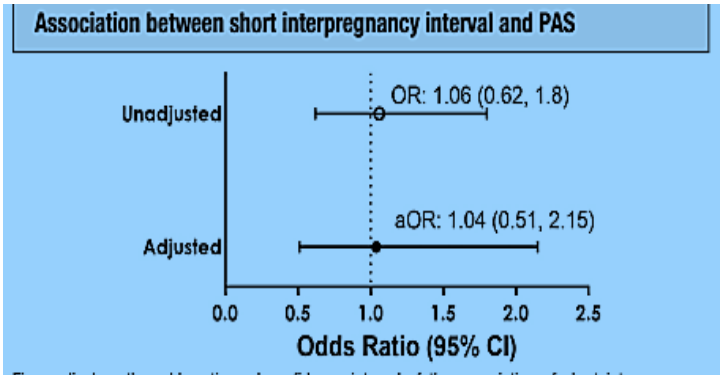

Figure displays the odds ratio and confidence interval of the association of short interpregnancy interval of <18 months and PAS (unadjusted OR, 1.06; 95% CI, 0.62–1.80). As shown, the odds ratio after adjusting for previa and number of previous cesarean deliveries did not change the association (adjusted OR, 1.04; 95% CI, 0.51–2.15).

result remained the same (adjusted odds ratio, 1.04). A 12-month interpregnancy gap was also found to be unrelated to placenta accreta spectrum in a secondary analysis (unadjusted odds ratio, 0.79; adjusted odds ratio, 0.52).

Discussion:

Short IPI was not related with PAS in patients at risk for PAS in a tertiary academic PAS referral hospital, even after controlling for the number of prior caesarean births and previa. As a result, short IPI is unlikely to constitute a significant modifiable risk factor for PAS. The findings of this study back up prior research that found no link between IPI and PAS. Multiple risk variables for PAS were discovered in a case-control study, which revealed no association between the intercesarean interval and PAS. Controls in that research were pregnant women who gave birth shortly after a PAS case at a specific hospital and did not have PAS, indicating that they may not have had any risk factors for PAS. [3] A research published recently revealed no link between IPI and PAS in a retrospective observational analysis in which controls were matched to patients with a history of caesarean birth based on placental position. The prior caesarean delivery date was also used to define IPI in this study. [4]

Conclusion:

In conclusion, PAS was not associated to a short interpregnancy period. These findings expand on and corroborate those of prior research, suggesting that the interpregnancy interval is unlikely to represent a significant modifiable risk factor for individuals at risk of PAS when compared to those findings.

- **Short interpregnancy intervals of 18 months or 12 months were not related with placenta accreta spectrum in individuals at risk for placenta accreta spectrum, even after controlled for the number of prior caesarean births and previa. Short interpregnancy intervals are unlikely to be a significant modifiable risk factor for placenta accreta spectrum.**

Reference:

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3. Complications of Gynecological Laparoscopic Surgery-Induced Ureteral Injury

Introduction:

Laparoscopic surgery has become increasingly popular in clinical areas as minimally invasive surgery continues to advance. As a result of its benefits of minor trauma, less bleeding, quick postoperative recovery, attractive incision, and integration of diagnostic and therapy, laparoscopic surgery is becoming increasingly popular and widely employed in the field of gynaecology. Minimally invasive, however, is not the same as noninvasive. The grounds for laparoscopic surgery are rising as laparoscopic equipment and technology mature, the operation complexity is increasing, and the frequency of surgical complications is increasing. The anatomical link between the ureter and the uterus is very intimate, and ureteral injuries are becoming increasingly common. [1] Previous studies have found varying incidences of laparoscopy in gynecologic patients, ranging from 0.2 % to 1.6 %. [2]

Discussion:

Accidental ureter damage during gynaecological laparoscopic surgery is mostly caused by the operation's style and difficulties. The risk of ureteral damage induced by surgery is considerably enhanced when the following variables occur. The ureter is compressed and displaced by the excessively enlarged uterus, which affects the surgical field's exposure and operation, increasing the risk of ureteral damage. Endometriosis, pelvic inflammatory illness, a history of pelvic surgery, and other factors create pelvic adhesion, resulting in ambiguous tissue levels, ureter displacement to the midline, and ureter injury during surgery. Laparoscopic surgery requires the use of a gadget.

The laparoscopic surgical field is a two-dimensional realm, the operator lacks a sense of depth, and it requires more expertise and abilities than standard open surgery. Unskilled microscopy or unfamiliarity with pelvic anatomy make it easier to harm or puncture the ureter by accident. It is easy to accidentally injure the ureter by blind clamping, electrocoagulation, or suture in cases of massive bleeding during surgery; additionally, a large number of free ureters can easily lead to insufficient ureteral blood supply and ischemic necrosis, resulting in secondary ureteral injury such as ureteral fistula.

Thermal damage is the most common cause of ureteral injury induced by laparoscopic surgery because electrocoagulation and electroresection are often employed. The usage of electrocoagulation, the length of electrocautery time, the power, and the scope of operation all influence the range and degree of heat conduction. Too much power or a wide electrocoagulation range are more likely to produce ureteral ischemia and necrosis, and ureteral thermal damage is difficult to detect during surgery. Almost all symptoms appear one to three weeks after surgery, and the clinical signs are unusual, making it easy to confuse with postoperative infection.

Longer electrocoagulation times, higher power, and a wider electrocoagulation range are more likely to produce ureteral ischemia and necrosis, and ureteral thermal damage is difficult to

detect during surgery. Almost all symptoms appear one to three weeks after surgery, and the clinical signs are unusual, making it easy to confuse with postoperative infection. As a result, ureteral thermal injury is typically diagnosed late, but the effects are often severe, including ureteral leakage, chronic renal function loss, and so on.

Detecting and diagnosing ureteral damage early on during laparoscopic surgery can help prevent permanent harm and increase the success rate of injury healing. In general, however, only about a third of ureteral injuries are discovered after surgery. [2]

The major symptom of intraoperative ureteral damage is that the operation field has more wounds and clear liquid comes out. Because there is no tissue edoema or adhesion at this time, it should be corrected as soon as the reason is determined. The procedure is straightforward, and the prognosis is favourable. It is the most advantageous period for therapy. After a surgery, ureteral damage should be detected and treated promptly to protect renal function and avoid significant infection. Depending on the location and severity of the damage, the appropriate therapy should be used. A D-J tube should be implanted for internal stent drainage in small injuries, which are usually treatable. If the implantation fails, surgery, such as ureteral end-to-end anastomosis or ureteral bladder replantation, should be undertaken. [3]

Conclusion:

To summarise, during and after various gynaecological laparoscopic surgeries, great attention should be paid to whether there is ureteral damage. Once discovered, early action should be taken to safeguard renal function and improve the prognosis. However, because ureter repair has always been difficult for surgeons, ureteral damage avoidance should take precedence. Most ureteral injuries in gynaecological laparoscopic surgery may be avoided technically. As a result, surgeons should enhance their operation technology, be familiar with the local anatomical relationship of the pelvic cavity, keep a high level of awareness throughout the procedure, and attempt to avoid difficulties. However, because ureter thermal damage is difficult to detect during surgery and frequently leads to difficulties thereafter, the operator should pay close attention and use caution.

Gynecological laparoscopic surgery-related ureteral damage is a rather uncommon complication. Because of its rarity, clinicians do not pay enough attention to it. Depending on the location and degree of the ureteral damage induced by gynaecological laparoscopic surgery, the clinical symptoms vary substantially.

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4. Pituitary functioning gonadotroph microadenoma accompanied by ovarian hyperstimulation syndrome: A rare case report

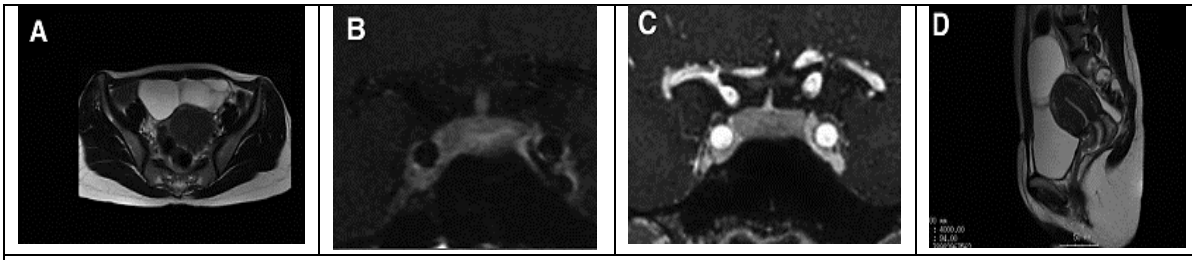
Introduction:

Pituitary gonadotroph adenomas (GAs) are generally clinically nonfunctioning adenomas in which patients have symptoms related to the mass effect, such as visual problems, hypopituitarism, and headache. [1] Functional gonadotroph adenomas (FGAs) of the pituitary, on the other hand, are uncommon, accounting for just 1% of all pituitary adenomas. The functioning gonadotroph adenomas can release physiologically active versions of luteinizing hormone (LH) [2] and follicle-stimulating hormone (FSH). FGAs cause larger ovaries in women of reproductive age, indicating an excess of FSH secretion. [3]

Case Report:

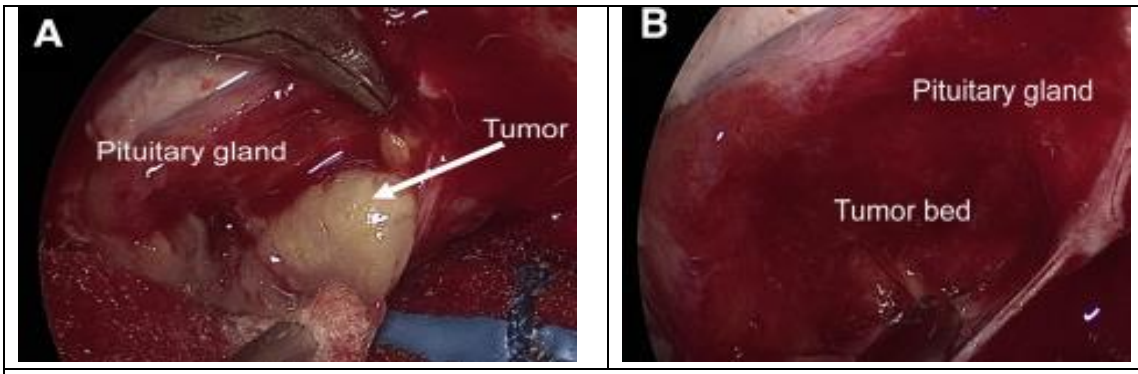
Transvaginal ultrasonography and abdomen MRI results in a 42-year-old female indicated enlargement of the ovaries with a multifollicular appearance, similar to that seen in individuals with OHSS. Her medical and family histories were both normal. Her menarche occurred when she was 13 years old, and her menstrual cycle has been regular ever since. She had been infertile since her 34th wedding anniversary, and she sought treatment in a private clinic for her infertility, where she was diagnosed with unexplained infertility. She was treated in the in vitro fertilisation and embryo transfer programme with ovarian stimulation after failed treatment with intrauterine insemination for >10 cycles, and a second oocyte retrieval and subsequent embryo transfer resulted in pregnancy.

Her delivery was through caesarean section, and no enlarged ovaries were discovered during the procedure. She remained amenorrheic with lower abdomen discomfort after the postpartum period ended. Despite ovarian swelling, a brain MRI scan taken one year and six months following parturition revealed no evident pituitary gland injury. Serum FSH, LH, prolactin (PRL), E2, thyroid-stimulating hormone, and antimullerian hormone levels were 13.9 mIU/mL, 0.2 mIU/mL, 11 ng/mL, 527.0 pg/mL, 2.36 IU/mL, and 1.28 ng/mL, respectively, when she arrived to the hospital.



Abdominal findings on magnetic resonance imaging (MRI) indicate enlarged ovaries, and pituitary MRI scan show scarce but apparent lesions. Abdominal MRI scans obtained before the patient visited our hospital show enlarged and polycystic ovaries of approximately 7 cm in diameter. (A) T2 width, axial view. (B) T2 width, sagittal view. (C) A contrast-enhanced coronal T1-weighted MRI scan obtained 2.5 years before surgery. (D) A contrast-enhanced coronal spoiled gradient recalled acquisition MRI scan obtained 1.25 years before surgery. Coronal

Transvaginal ultrasonography revealed a 1 cm uterine myoma and enlarged bilateral ovaries (right: 56.6 x 38.4 mm, left: 35.4 x 24.5 mm, represented as major axis and orthogonal short diameter), which resembled ovaries under controlled ovarian stimulation in a woman undergoing IVF (Fig. 1A and B). Two years following her first visit, a comprehensive pituitary MRI revealed a tiny pituitary adenoma with a maximal diameter of 10 mm, positioned in the core of the pituitary gland. Her abdominal distension deteriorated, and she was given relugolix (40 mg/d), a gonadotropin-releasing hormone (GnRH) antagonist, for a month, but it was unsuccessful (Fig. 1C and D).



Operative procedure and histologic findings of the tumor. (A) Exploratory pituitary surgery was performed; a microadenoma (arrow) was found in the center of the pituitary gland. (B) Selective complete tumor resection was performed. On immunohistochemical analysis, most adenoma cells were immunopositive for follicle-stimulating hormone-b, as seen on 3,30 -diaminobenzidine staining

Her abdomen distension increased after she stopped taking the medication; she had exploratory pituitary surgery, and a microadenoma was discovered intraoperatively (Fig. 2A). To address OHSS and FSH and E2 hypersecretion, a selective total tumour excision was undertaken (Fig. 2B). Transvaginal ultrasonography revealed a 1 cm uterine myoma and enlarged bilateral ovaries (right: 56.6 x 38.4 mm, left: 35.4 x 24.5 mm, represented as major axis and orthogonal short diameter), which resembled ovaries under controlled ovarian stimulation in a woman undergoing IVF. Two years following her first visit, a comprehensive pituitary MRI revealed a tiny pituitary adenoma with a maximal diameter of 10 mm, positioned in the core of the pituitary gland. Her abdominal distension deteriorated, and she was given relugolix (40 mg/d), a gonadotropin-releasing hormone (GnRH) antagonist, for a month, but it was unsuccessful.

Discussion:

The most common symptom of OHSS is ovarian enlargement, which occurs following gonadotropin stimulation, also known as managed ovarian stimulation. Although the goal of controlled ovarian stimulation is to develop oocytes for eventual conception, continuous stimulation with endogenous FSH has the same clinical effect. In most cases of FGA, FSH levels might be normal or modestly increased, and tumour growth does not reflect endogenous FSH levels. [4] The thickness of the section slice is 1–1.2 mm, and pictures obtained with the SPGR approach have better soft-tissue contrast and resolution. As a result, the SPGR approach was found to be superior at identifying microadenomas.

The use of dopamine agonists can lower FSH levels; however, tumour shrinking is not

predicted to play a role. [3] Patients with GAs may also be administered GnRH analogues. GnRH-a, on the other hand, has a flare-up function immediately after administration. This is a highly unwanted side effect that might promote tumour development and E2 secretion. Because of its adherence, the recent introduction of oral GnRH antagonists might be another therapy option. The secretion level of E2 reduces after 4 hours after taking oral GnRH antagonists, making this family of medicines preferable to the currently existing GnRH-a antagonists.

Conclusion:

Complications after abnormal release of physiologically active hormones and mass effect, including visual field problems and hypopituitarism, are two scenarios in which surgical therapy should be considered for individuals with FGA. The pathogenesis of OHSS was reflected in the study patient's increased FSH and E2 levels. Because the tumour was undetected, the patient was originally treated medically. Overall, the data suggest that ovarian appearance can predict FSH hypersecretion, that PRL levels can confirm the existence of pituitary lesions, and that tiny pituitary lesions should not be overlooked. In individuals with difficult-to-identify FGA abnormalities, a repeated pituitary gland study and cranial MRI should be undertaken.

- **A case report of a functioning pituitary microadenoma secreting sufficient amounts of FSH to cause OHSS. Medical therapy failed to stop the high FSH production, but surgical surgery was eventually successful.**

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