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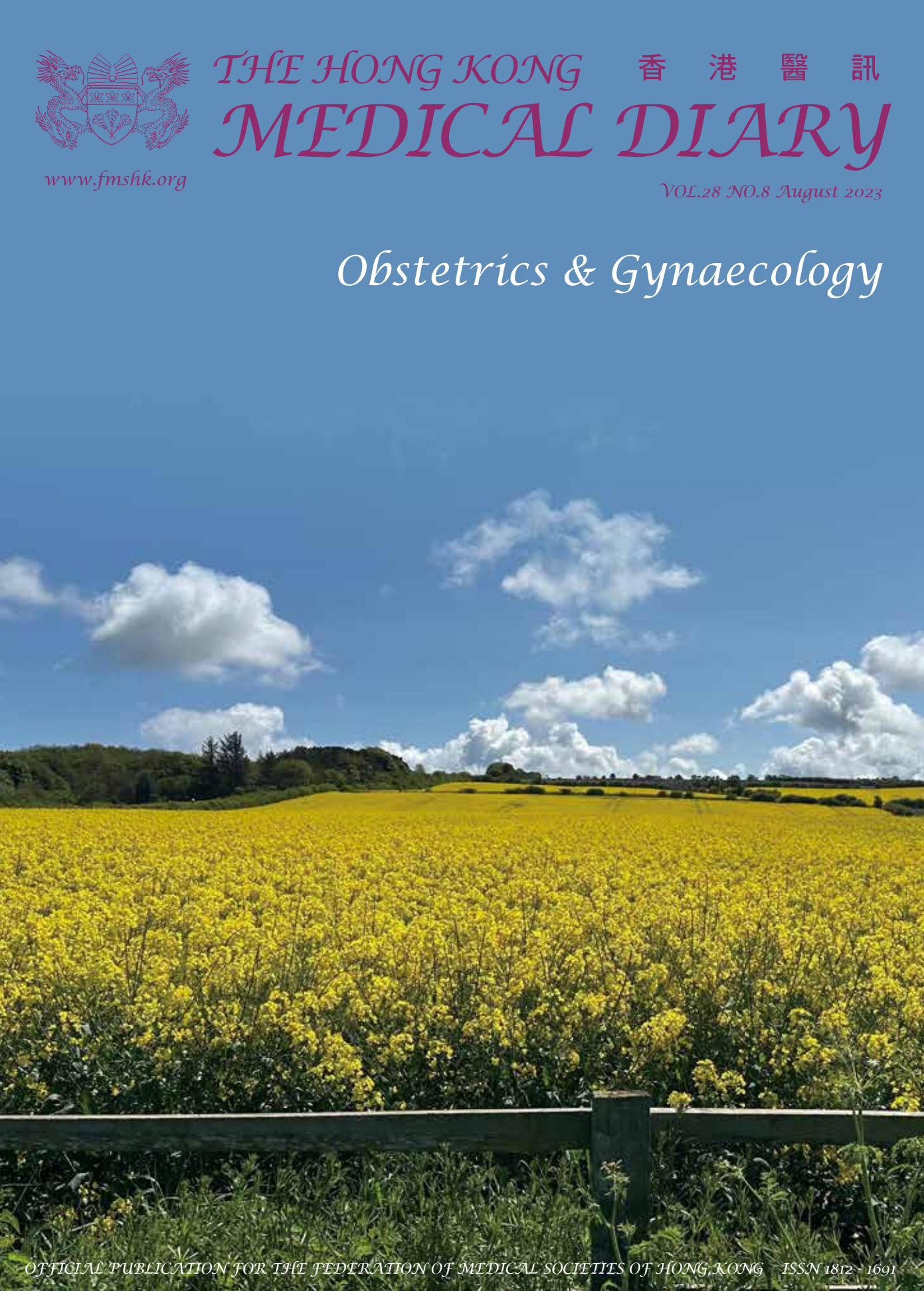

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100% OG Doctors interviewed Recommend Aptamil 白金版 for Cesarean Born Babies*

Aptamil 白金版

Formula Ingredients Clinically Proven to Support Immunity of Cesarean Born Babies[1,2]

OG = Obstetricians & Gynecologists.
*According to 2021 survey by Kantar HK, Respondents are doctors (Specialist in Obstetrics & Gynaecology). Sample size N=51.

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Important Notice: Breast-feeding is the best form of nutrition for babies and provides many benefits to babies and mothers. It is important that, in preparation for and during breast-feeding,pregnant and lactating women eat a healthy, balanced diet. Combined breast and bottle-feeding in the first weeks of life may reduce the supply of their own breast-milk, and reversing the decision not to breast-feed is difficult. Always consult healthcare professional for advice about feeding baby. If infant formula is used, mothers / care givers should follow manufacturer's instructions for use carefully- failure to follow the instructions may make baby ill. The social and financial implications of using infant formula should be considered. Improper use of an infant formula or inappropriate foods or feeding methods may present a health hazard.

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Disclaimer

The Cover Shot

On the last day of our coast to coast walk, we came across large fields of bright yellow flowers. They are very beautiful especially under the clear blue sky and they formed great backdrops for photo taking.

Our guide told us that these are rapeseed flowers. They are cultivated mainly for their oil rich seed, which are turned into edible vegetable oil.

In fact, Rapeseed is the third leading source of vegetable oil in the world. The residuals are converted into animal feed and biodiesel.

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Editorial

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Issue Editor

Dr Joseph WT CHAN

I am privileged to have the opportunity to contribute to this issue of the Medical Diary in HK. Together with my co-authors, we would like to explore different important themes about women's health, particularly in the areas of reproductive issues and gynaecological tumours.

Infertility is a prevalent medical condition that affects millions of couples worldwide. In Hong Kong, the total fertility rate decreased from 1,281 live births per 1,000 women in 1991 to 901 in 2003. Recent data from the Census and Statistics Department of HKSARG showed the total fertility rate in HK further decreased to 772 in 2021. During the whole period from 1991 - 2021, the total fertility rate of Hong Kong has been consistently below the replacement level of 2,100 (i.e. 2,100 live births per 1,000 women). According to the United Nations Population Fund, Hong Kong now has the lowest fertility rate in the world, with every woman giving birth to an average of 0.8 children. This is a worrying trend that has significant implications for our society, particularly regarding our ageing population and workforce.

Fortunately, assisted reproduction technologies such as artificial insemination and in vitro fertilisation (IVF) are now available to support couples who are seeking fertility assistance.

Prenatal screening is another crucial aspect of our work, as it helps ensure successful delivery and the health of both mother and baby. A range of screening tests, including non-invasive prenatal testing (NIPT), which can detect chromosomal abnormalities such as Down syndrome with high accuracy and low risk of miscarriage are available. Preimplantation genetic testing (PGT) for couples who are carriers of genetic diseases, allowing them to select embryos that are free of the disease before undergoing IVF.

Endometrial cancer is the most common gynaecological cancer in Hong Kong, with incidence rates increasing over the past decade. Uterine leiomyomas affect up to 80 % of women by the age of 50 and can cause heavy menstrual bleeding, anaemia, and pressure symptoms in some cases. Comprehensive screening and management for these conditions, including minimally invasive surgery are discussed.

While our work focuses on women's physical health, we also emphasise the importance of self-care and mental health. As a passionate hiker myself, I can attest to the benefits of outdoor activities for physical and mental wellness. Hiking not only provides a good workout but also allows us to appreciate the natural beauty of the world and clear our minds. It is a great way to take a break from our busy routines and recharge our batteries. In fact, our centre encourages our patients to engage in regular physical activity and self-care practices as part of their overall health and wellness management.

In this issue, I would like to share my aspiration with a group of hiker enthusiasts who love to explore the world. Over the last decade, we have left footprints in many corners of the globe. This year's walk took us to the Coast to Coast path in England. The 313-km walking trail

spans Northern England, starting at St Bees on the Irish Sea and ending at Robin Hood's Bay on the North Sea, and we spent eight days hiking the highlights of this trail. The views were magnificent yet soothing, and the trail was manageable but not without its challenges. I chronicled the entire experience in a brief way, and I hope this is a vivid testimony that hiking is a pastime that can be enjoyed by individuals of all ages, including those over 50. So, join us to "Walk the World"!

In conclusion, women's health is a complex and multifaceted area that requires specialised knowledge and skills.

Lastly, we acknowledge that women's health goes beyond physical health. Mental health is an integral part of overall well-being, and we strive to provide our patients with the resources and support they need to address any mental health concerns they may have. We offer counselling services and support groups for women who may be struggling with infertility, pregnancy loss, or other reproductive health issues.

We hope that this issue of the Medical Diary will provide good insights and information for our readers, and we look forward to continuing our work in promoting women's wellness in Hong Kong.

基層醫療指南
Primary Care Directory

Primary Care Directory (PCD), implement and administer by the Primary Healthcare Office of the Health Bureau, is a web-based database set up to facilitate the public to search for suitable primary care service providers according to their practice information

The Primary Healthcare Blueprint

PCD is required for family doctors and healthcare professionals enrolling in Government-subsidised primary healthcare initiatives for standardization and assurance of quality of primary healthcare services

OCT
6

From 6 October 2023, doctors will be required to be enlisted in PCD in order to enrol in Government-subsidised Primary Healthcare (PHC) programmes

醫療券 Health Care Voucher

門診協作 General Outpatient Clinic Public-Private Partnership Programme

地區康健中心 District Health Centre

2022/23 疫苗資助計劃 Vaccination Subsidy Scheme

Health Bureau
The Government of the
Hong Kong Special Administrative Region
of the People's Republic of China

All members of the public to each be paired with a family doctor of their own for development of personalised care plan

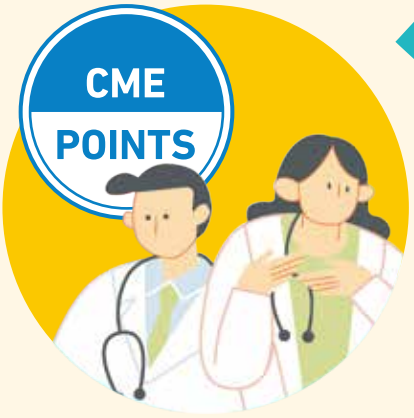
Entry Requirement of PCD

- Registered medical practitioners with valid practicing certificate
- Committed to the provision of directly accessible, comprehensive, continuing and co-ordinated person-centred primary care services

You are strongly encouraged to enrol in the PCD as early as possible

Maintaining Listing in PCD

Upon successful listing in the PCD, doctors have to comply with the relevant requirement in order to maintain listing in the PCD, particularly on accumulation of adequate Continuing Medical Education (CME) points



If interested in joining the PCD, please visit our home page via the following link or scan the QR Code

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Contained Morcellation

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INTRODUCTION

Morcellation is the slicing of a large solid tissue into smaller fragments to allow removal from the abdominal cavity through a small incision. It is not confined to minimal invasive surgery. For decades, morcellation has been commonly performed with a scalpel during vaginal and mini-laparotomy hysterectomies and myomectomies for the removal of leiomyomas (fibroids) or leiomyomatous uterus. With the development of laparoscopic surgery, specially designed electro-mechanical or power morcellator is used to enhance the morcellation process, reduce time, and avoid open surgery-related morbidities.

Traditionally, morcellation with or without the use of a power morcellator, was performed directly in an open operative field. The problem of uncontained morcellation, especially when using a power morcellator with the spinning of the specimen, is the widespread scattering of cells and small fragments of tissues, together with blood and fluid content, in the whole abdomen. Removal of these fragments is tedious, sometimes difficult, and often incomplete. This may lead to the implantation of the residual tissue fragments.

THE FDA SAFETY WARNINGS

In 1995, the laparoscopic power morcellator was approved for use in gynaecological procedures, particularly in hysterectomies and myomectomies to remove uterine fibroids. In December 2013, the US Food and Drug Administration (FDA) received the first adverse report of the spread of unsuspected uterine cancer following the use of a power morcellator. In April 2014, the FDA issued a safety communication statement "warned against" the use of laparoscopic power morcellation during hysterectomy or myomectomy for uterine fibroids[1]. In December 2020, the FDA recommended performing laparoscopic power morcellation for myomectomy or hysterectomy only with a tissue containment system, legally marketed in the United States for use during laparoscopic power morcellation and performing these procedures only in appropriately selected patients[2]. The containment system is intended to isolate and contain tissue that is considered benign. Laparoscopic power morcellators should not be used in patients with known or suspected malignancy and for women who are post-menopausal or over 50 years of age. As a result of the FDA warnings, the use of power morcellation decreased, and more and more minimal invasive the hysterectomy and myomectomy were reverted back to open surgery[3,4]. This was associated with an increased risk of complications and hospital readmission among women undergoing surgery for uterine fibroids[5,6].

RISK OF OCCULT MALIGNANCY IN PRESUMED FIBROID UNDERGOING SURGERY

Uterine leiomyomas are the most common benign uterine tumour, found in approximately 75 % of all women. Uterine leiomyosarcoma is a rare disease, accounting for only 1 - 2 % of all uterine malignancies, with an annual incidence of 0.64/100,000 women[7]. The great majority arise de novo; only 0.2 % may result from a sarcomatous transformation in a benign leiomyoma[8]. No imaging method can enable a reliable preoperative diagnosis of leiomyosarcoma from leiomyoma.

The estimated incidence of occult sarcoma for presumed benign leiomyomas varies among studies and is difficult to determine. In 2014, the FDA reported the prevalence of unsuspected malignancy in women undergoing hysterectomy or myomectomy for presumed benign leiomyomas was 1 in 352 for sarcoma and 1 in 498 for leiomyosarcoma[9]. Pritts et al. in a meta-analysis described the estimated rate of leiomyosarcoma as being 1 in 1961 procedures[10]. Lately, the Agency for Healthcare Research and Quality (AHRQ) reported that an unexpected leiomyosarcoma occurs in fewer than one and up to 13 of every 10,000 surgeries performed for symptomatic fibroids[11]. These new data showed that the actual risk is far smaller than originally reported by the FDA.

RISK OF UNCONTAINED MORCELLATION

There are little data on the frequency of morcellator injuries, largely because reporting of injuries is inconsistent and underreporting is expected. In a systematic review of the FDA Medical Device Reporting, Manufacturer and User Facility Device Experience databases and the medical literature regarding the power morcellator-related injuries published in 2014, a total of 55 complications were identified during the past 15 years from 1992 to 2012, including 31 small bowel injuries and 27 vascular injuries. Six patients died of morcellator-related complications. All these complications seemed to be related to the surgeon's experience[12].

Uncontained morcellation is associated with the spreading of cells and tissue fragments inside the abdominal cavity. In a systematic review, the risk of iatrogenic dissemination in patients with uncontained myomectomy or hysterectomy was 1.4 % for endometriosis, 0.6 % for adenomyosis, and 0.9 % for parasitic myoma[13]. These cases were more frequent than malignancy conditions and required re-operation.

The biggest concern related to the dissemination of tissue during morcellation is the inadvertent dissemination of malignancy. Hysterectomy with morcellation of leiomyosarcoma was associated with a significantly higher recurrence rate and peritoneal sarcomatosis than hysterectomy without morcellation (44 vs. 12.9 %)[14]. A meta-analysis showed that morcellation of uterine leiomyosarcoma increased intra-abdominal recurrence rates (39 vs. 9 %; odds ratio, OR 4.11, 95 % confidence interval, CI 1.92, 8.81) and death rate (48 vs. 29 %; OR 2.42, 95 % CI 1.19, 4.92)[15]. The 2017 AHRQ meta-analysis showed that the expected 5-year survival was 30 % in women undergoing power morcellation, 59 % with scalpel morcellation and 60 % in women in whom no morcellation was used; however, confidence intervals were wide and overlap[11]. The use of containment systems in tissue morcellation represents a possibility to minimise the risk of cell dissemination.

TECHNIQUES OF CONTAINED MORCELLATION

The first in-bag morcellation of uterus was reported in 12 patients undergoing laparoscopic single-site hysterectomy in an abstract in 2012, and the laparoscopic incision need to be enlarged to accomplish the specimen extraction[16]. Subsequently, the technique was modified for dual port morcellation[17,18,19]. This required placing a lateral port through the abdominal wall and piercing into the insufflated bag. A 5-mm extra long (15 cm) balloon-tip trocar (Applied Medical, Rancho Santa Margarita, CA) was used in an attempt to seal the puncture site and avoid leakage. However, during the removal of the bag, the puncture site could not be closed, and spillage from the puncture site was found in 9.2 % in a preliminary assessment[20]. Penetrating the bag inside the abdominal cavity should not be done in order to preserve the bag's integrity and prevent tissue leakage.

The Yuen's Technique

The author started performing contained laparoscopic power morcellation using dual port since Oct 2014. At that time, there were no specially designed specimen bags for laparoscopic power morcellation, and the commercially available specimen bags were generally not big enough for dual port morcellation. The author used a transparent long rectangular plastic bag that comes with the Suction Connecting Tubing (Product Code CT4092, Pennine HealthCare, UK). The bag measured 18 x 39 cm with a calculated volume of around 1.4 L. It can accommodate specimens up to 12 cm in maximum diameter. The bag can be easily introduced via a 12 mm port (the side port in the left lower abdomen) after folding up. After putting the specimen into the bag, the blind end corner of the bag on the left side was pulled out of the 12 mm port site and was cut opened later to insert the port into the bag for morcellation. The opening of the bag was then exteriorised out of the 11 mm umbilical port site, and the port was re-inserted for the laparoscope and insufflation. There is no need to pierce the bag with another trocar and the bag is totally intact inside the abdomen. Once morcellation was completed, the opening of the bag was closed with suture tightly and the bag was then removed via the left lateral port by pulling the bag out of the abdomen.

SAFETY AND EFFECTIVENESS OF CONTAINED MORCELLATION

Contained morcellation is performed in a separate and isolated compartment in the abdominal cavity to prevent the spreading of tissue fragments and dissemination of cells. However, the absolute safety of this technique has not been established. A recent randomised controlled study showed that peritoneal washing for smooth muscle cell cytology was negative after laparoscopic contained morcellation and positive in 29 % of cases with uncontained morcellation[21]. The duration of the surgical procedure and morcellation did not differ significantly between the two groups. The use of a morcellation bag is efficient in preventing the spread of smooth muscle cells during the morcellation of leiomyoma or myomatous uterus.

Although most studies reported no breaches of bag integrity after contained morcellation, leakage or damage to the containment bag could not be guaranteed. Loss of bag integrity after vaginal contained manual morcellation was reported to occur in 33 %[22] and 40.6 %[23] for total laparoscopic hysterectomy and 9.7 % for laparoscopic myomectomy[24]. For abdominal contained manual morcellation, bag perforation rate was 8.3 % - 13.3 % [23,25]. For laparoscopic power morcellation, the perforation rate was observed at 6.1 % - 9.7 %[26,27]. The impact of breaches in bag integrity during morcellation on the risk of intra-abdominal cell dispersal is unknown.

Several studies evaluated the microscopic tissue dissemination with contained morcellation using abdominopelvic washings. Ikhena et al. reported no cytologic evidence of intraabdominal cell dissemination before and after contained power morcellation in laparoscopic myomectomy[28]. Contrarily, Takeda et al. reported a dispersal of leiomyoma cells in 83.3 % of cases after laparoscopic myomectomy with contained manual morcellation and no loss of bag integrity[29]. Recent small studies[26,30,31] on the detection of smooth muscle cells on peritoneal washing at different times of during myomectomy showed a positive cytology rate of 6.9 % - 37.5 % after myometrial closure and 2.6 % - 31.3 % after uncontained morcellation, in some cases cytology was already positive before morcellation. Tissue disruption with myomectomy can cause cell spread even in the absence of morcellation. Irrigation and suctioning with 3 L normal saline or sterile water after morcellation may reduce cell dissemination[31]. The clinical significance of this microscopic dissemination and whether this will affect survival in case of malignancy are largely unknown. In fact, the risk of dissemination and development of parasitic implants

seems to be more related to tissue fragments left in the peritoneal cavity rather than to isolated cells[32,33].

CONCLUSION

Current trends have moved toward the use of containment bags in morcellation procedures, irrespective of the route and mode of morcellation and type of surgery. The use of contained morcellation in hysterectomy eliminates the possibility of tissue spread. However, myomectomy carries an inherent risk of cells and tissue dissemination at the time of hysterotomy. The use of contained morcellation can reduce the amount of tissue spread. A final irrigation and suctioning procedure after uncontained and contained morcellation may further reduce the risk of cell dispersal.

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Abbreviated Prescribing Information of DURATOCIN

Active Ingredient: Carbetocin. **Indications:** Prevention of postpartum haemorrhage due to uterine atony. **Dosage & Administration:** *Caesarean section under epidural or spinal anaesthesia* 100 mcg (1mL) IV slowly over 1 min. *Vaginal delivery* 100 mcg (1mL) IV slowly over 1 min or IM. **Contraindications:** Hypersensitivity. During pregnancy & labour before delivery. For induction of labour. Hepatic or renal disease. Serious CVD. Epilepsy. **Special Warnings and Precautions:** Must only be administered after delivery of infant & ASAP, preferably before delivery of placenta. Intended for single administration only. No data on additional doses of carbetocin or the use of carbetocin following persisting uterine atony after oxytocin. Monitor early signs of hyponatraemia e.g. drowsiness, listlessness & headache, particularly in patients receiving large vol of IV fluids. Use with caution in migraine, asthma, CVD or any state in which a rapid addition to extracellular water may produce hazard for an already overburdened system. Carefully monitor patients with eclampsia & pre-eclampsia. No studies on gestational DM. No established safety & efficacy, and dosage recommendation on adolescents. **Side Effects:** *IV* Headache, tremor, hypotension, flushing, nausea, abdominal pain, pruritus, feeling of warmth. *IM* Anaemia, headache, dizziness, tachycardia, hypotension, chest pain, nausea, abdominal pain, vomiting, back pain, muscular weakness, chills, pyrexia, pain. **Interactions:** Concomitant use w/ vasoconstrictors in conjunction w/ caudal block anaesthesia may lead to severe HTN. May enhance BP enhancing effect of ergot-alkaloids e.g. methylergometrine. Prostaglandins may potentiate effect of carbetocin. Some inhalation-anesthetics e.g. halothane & cyclopropane may enhance hypotensive effect of carbetocin, weaken effect of carbetocin & cause arrhythmias.

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Assisted Reproductive Technologies - Applications Beyond the Treatment for Infertility

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INTRODUCTION

Childbirth is a major life event and the cry of a baby brings vitality and hope to most women. Unfortunately, natural conception is not a must as infertility affects one in every six couples. Causes and treatment modalities of infertility can be variable, but many women eventually have to resort to assisted reproductive technologies (ART) for a higher success rate. ART, by the American Center for Disease Control (CDC) definition, are any fertility-related treatments in which eggs or embryos are manipulated. The first successful in vitro fertilisation (IVF) treatment in humans was performed in 1978 in England[1], in which a single oocyte was retrieved laparoscopically from the ovary, then fertilised in vitro and subsequently transferred as an embryo into the uterus.

ART are most frequently performed secondary to infertility. IVF can bypass the fallopian tubes and be offered to women with tubal factor infertility. Other infertility aetiologies in which IVF is employed include male factor infertility, diminished ovarian reserve, advanced maternal age, ovulatory dysfunction, pelvic endometriosis, and unexplained infertility. Over the past few decades, ART has developed enormously and nowadays IVF is also used beyond the scope of infertility. The advance in ART can be of significant importance to modern families as it now offers women more choices regarding their fertility options and avoids the unnecessary oppression related to their limited reproductive span.

FERTILITY PRESERVATION

A growing problem in the developed world is that women tend to start families at a continuously later stage in life. Between 1986 and 2018, the median age of first marriage increased from 25.3 to 29.7 for women and the median age of women at first childbirth rose from 26.6 in 1986 to 31.8 in 2018[2]. Unfortunately, women have insufficient knowledge about age related fertility decline and many of them have an overoptimistic belief that IVF will help to overcome age-related infertility[3]. In fact, the success rate of IVF also declines with the age of the women due to age related decline in the quality of the eggs. Oocytes cryopreservation therefore can be seen as a method of fertility preservation for women who are not ready to conceive at desirable young reproductive age, with the concept to freeze oocytes in time, protecting the higher pregnancy success associated with the use of younger oocytes[4].

In the past, eggs freezing was a strategy which enabled women to preserve a number of unfertilised eggs when faced with the threat of infertility due to a medical condition or medical treatment. The first successful pregnancy following fertilisation of a frozen oocyte was reported in Australia in 1986[5], and it remained a marginal reproductive option for over a decade due to low oocyte survival after thawing, low fertilisation rates, and poor pregnancy results. The improved outcomes using new technologies of vitrification (ultra-rapid freezing) and intra-cytoplasmic sperm injection (ICSI) have led to the wider application of egg freezing for non-medical reasons and is no longer considered to be experimental. Elective eggs freezing for non-medical reasons in unmarried women was introduced in Hong Kong in the late 2010s and is now offered by most private clinics in Hong Kong. The international guideline states that elective eggs freezing for non-medical reasons is ethically acceptable provided that the woman receives thorough information about the procedure, the risks, and the chance of having a child by use of the cryopreserved eggs[6]. Ideally, the oocyte freezing programme should achieve success rates comparable to fresh oocytes. A review published by the practice committee of the American Society for Reproductive Medicine and the Society for Assisted Reproductive Technology reported post-thaw oocyte survival rate of 90 % - 97 %, thawed oocyte fertilissation rate after ICSI of 71 % - 79 % and the implantation rate at 17 % - 41 %[7]. The clinical pregnancy rate per vitrified and thawed oocyte is 4.5 % - 12 %, and the live birth rate is 2 % - 12 % for women under 38 years of age. However, it should be noted clinical pregnancy rates may decline with advanced maternal age at the time of freezing. Collectively, literature data clearly indicate that the optimum age for oocyte freezing is below the age of 35 years, and that oocyte freezing above that age is likely to be associated with lower rates of post-thaw oocyte survival and live birth per thawed oocyte. Currently in Hong Kong the maximum storage period for gametes stored for patients' own use for non-medical reason is ten years and it is important to note that the cryopreserved eggs can only be used if the woman is legally married under the law of Hong Kong[8]. Women should be well informed of the above prior to their decision. They should be aware that egg freezing by choice means no guarantee of having a child but offers them a means to take better control of their fertility at their own pace.

PREIMPLANTATION GENETIC TESTING (PGT)

Many couples, on the other hand, can conceive without difficulties but suffer from recurrent pregnancy losses

or are carriers of genetic problems. Chromosomal aneuploidy is a major reason that is believed to lead to pregnancy loss and congenital anomalies following natural conception and IVF pregnancies. It is well known that embryo aneuploidy increases with advanced reproductive age, leading to a decrease in live-birth rates[9]. To avert this problem, preimplantation genetic testing for aneuploidy (PGT-A) was developed as an embryo-selection technique and had been increasingly applied in the IVF practice in the past two decades. This involves biopsy of few cells from the trophectoderm at the embryonic blastocyst stage and assessment of the comprehensive chromosome copy numbers by using a platform such as next-generation sequencing (NGS). The aim is to select an euploid embryo among the available embryos for transfer, hence reducing implantation failure, miscarriage or foetal abnormality associated with aneuploidy, i.e. abnormal number of chromosomes[10]. It does not, however, generate a "normal" embryo or correct the genetic aberration of an individual affected embryo. Despite the potential benefits, misdiagnosis can still occur with the comprehensive chromosome screening platform. A recent published data from Friedenthal et al. estimated the clinical error rates of NGS at 0.7 % per embryo, at 1 % per pregnancy with gestational sac, and at 0.1 % per live birth[11], thus making pre-treatment genetic counselling mandatory to women who are considering PGT-A. In addition, the potential risk of trophectoderm biopsy on the developing embryo and possible discordance of trophectoderm biopsy with the rest of the embryo, e.g. in mosaicism may also affect the success rate[12]. The STAR (Single Embryo Transfer of Euploid Embryo) trial was a global, multi-centre randomised controlled trial published in late 2019 in attempt to address and assess the current worldwide practice of PGT-A[13]. Patients included were between 25 and 40 years old and they were randomised to the PGT-A or control group. The PGT-A group (n = 330) was then compared with the morphology/control group (n = 331) and results showed that the 20-week ongoing pregnancy rate was similar in both groups per embryo transfer (50 % vs 46 %) or per intention to treat at randomisation (41.8 % vs 43.5 %). This implies that PGT-A does not improve ongoing pregnancy rates per cycle started when routinely applied to the general IVF population, and this is in concordance with the current recommendations from both the American College of Obstetricians and Gynaecologists and the American Society for Reproductive Medicine[14,15]. Post-hoc analysis of women aged 35 - 40 years in the STAR trial showed a significant increase in ongoing pregnancy rate per embryo transferred (51 % vs 37 %), implying that PGT-A may, however, be effective as a selection tool in the subgroup of patients between 35 - 40 years old with normal ovarian reserve.

For families that are at high risk of transmitting the inherited disease to the offspring, preimplantation genetic testing can be offered to avoid the psychological trauma associated with the termination of pregnancy in the case of an affected foetus or the birth of an affected child. It is usually indicated for specific monogenetic diseases (PGT-M) and structural chromosomal rearrangements (PGT-SR), in which the conditions or abnormalities would significantly affect the health of an individual who might be born. The commonest condition that PGT-M is performed in Hong Kong is beta/alpha thalassemia, which is an autosomal recessive disease[16]. Other indicated conditions include but not limited to spinocerebellar ataxia, Huntington's disease, and haemophilia A. Patients require extensive counselling by geneticists and specialists in reproductive medicine before treatment and options other than PGT such as prenatal diagnosis after pregnancy, gamete donation, or adoption should be discussed.

CONCLUSIONS

ART nowadays allows individuals and couples to achieve pregnancy in situations other than infertility alone. According to the 2020 Annual Statistics published by Council on Human Reproductive Technology, approximately 7,511 ART cycles with an embryo transfer were performed, with 1,633 live births in that year, and around 27,771 embryos and 5,692 oocytes were cryopreserved[17]. With increased access to ART and rate of delayed childbearing increases, these numbers will likely increase. As such women's health and reproductive health providers need to have a basic functioning knowledge of indications and appropriate timing for referral to a specialist in reproductive medicine.

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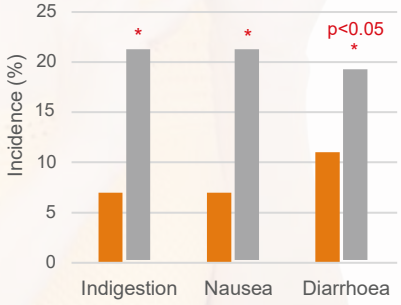

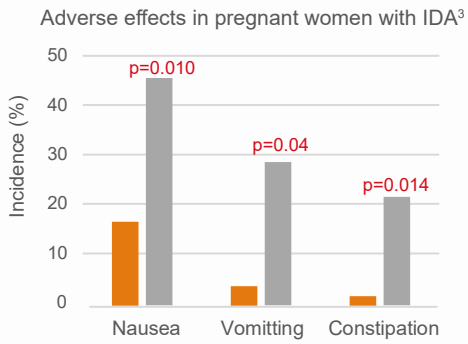

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The Role of Molecular Pathology in the Management of Endometrial Cancers

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INTRODUCTION

Endometrial cancer is currently the most common malignant disease arising from the female genital tract. In Hong Kong, the incidence of endometrial cancer has been rising in the last one to two decades, with the age-standardised rate increasing from 10 - 11 in 2006 to 16.2 in 2020[1]. Despite knowledge of the risk factors for developing this disease, there is still no solid explanation for the rapidly increasing numbers in our locality.

When we talk about cancer, most people would be interested in the staging of the disease. Among obstetricians and gynaecologists, the FIGO (International Federation of Gynecology and Obstetrics) staging system is the most commonly used[2]. The other ways of classifying endometrial cancer include classifications using the histological cell types or using the molecular classification.

The prognosis of endometrial cancer is favourable compared to other gynaecological malignancies due to its early presentation. According to the Hong Kong Cancer Registry 2020, about 75 % of patients were diagnosed with stage 1 or 2 diseases and the 5-year survival for stage 1 and 2 diseases were 89.7 % and 73 % respectively[1]. Surgical removal is the mainstay, and often the only treatment, for patients with early stage disease[3]. Consequently, only a small proportion of patients require systemic therapy in the treatment of their endometrial cancers. This is one reason why the development of systemic therapy in endometrial cancer lags behind other cancers such as ovarian cancer. As a result, patients with metastatic diseases have a poor survival due to the limited number of available or effective systemic therapies.

This article aims to explore the role of molecular pathology in the management of endometrial cancer, including its potential for prediction of the outcome and guiding the selection of therapies.

CLASSIFICATION OF ENDOMETRIAL CANCER

Traditionally, endometrial cancers are classified by the morphology on histological examination[4]. Since Bokhman's publication in the early 1980s, it was generally accepted that endometrial cancers fall into two distinct groups. Type I tumours are generally hormone related endometrioid carcinoma, presenting early with a good prognosis. While Type II tumours are poorly differentiated non-endometrioid tumours with early metastasis and thus an unfavourable outcome[5]. Non-endometrioid carcinomas include serous carcinoma, clear cell carcinoma, carcinosarcoma, and other rare tumour types. For high grade tumours, an accurate typing could be difficult even with the experienced pathologist, and there have been interobserver variations in the histologic typing[6]. The adoption of immunohistochemistry (IHC) can sometimes help in differentiating different cell types in difficult cases.

In 2013, The Cancer Genome Atlas Research Network published the first comprehensive genomic classification of endometrial cancer based on the type of mutations and somatic copy number variations, genome, and exome sequencing, and microsatellite instability assay. All endometrial cancers are scategorised into four molecular subgroups, as shown in Table 1[7].

Table 1. Adapted from reference 7

Type	Mutations
POLE mutation / ultramutated endometrial cancer	Mutation in the extranuclease domain of polymerase epsilon DNA
MMR deficient / hypermutated endometrial cancer	DNA MMR systems defects
P53 abnormal / CN-high endometrial cancer	High copy number of somatic alterations or p53 abnormalities
CN-low endometrial cancer	Low number of somatic alterations with wild type POLE and p53, and MMR proficient

POLE: polymerase epsilon; CN: copy number;
MMR: mismatch repair

There have been different algorithms being used to allocate the endometrial cancers into different molecular subgroups[8,9]. The process can start with the mismatch repair (MMR) deficient status using the IHC to detect the presence or absence of mismatch repair proteins. If the wild type MMR proteins are not detected, this cancer is classified within a MMR deficient subgroup or sometimes it is also named as hypermutated endometrial cancer. If MMR proteins are detected, the next step is to perform a PCR test to identify the mutation of the polymerase epsilon (POLE). If the mutation is detected, the endometrial cancer is classified into the POLE or ultramutated group. If MMR or POLE mutations are not found in the specimen. The last step is to perform the IHC for the p53 status. If p53 mutation is detected, the tumour is classified as p53 abnormal or also named copy number-high (CN-high) endometrial cancer. If no mutation is detected in all the above tests,

the tumour is classified as No Specific Molecular Profile (NSMP) or copy number-low (CN-low) endometrial cancer.

About 25 - 30 % of the endometrial cancers are scharacterised by MMR defects. While POLE mutation type accounts for 7 - 12 % of the cases. Around 25 % of the endometrial cancers are of the CN-high/p53 group and the rest belongs to the CN-low/NSMP group[7,10].

CLINICAL SIGNIFICANCE OF MOLECULAR CHARACTERISTICS IN ENDOMETRIAL CANCER

Prognostic Implications

Traditionally, the prognosis of endometrial cancer patients was assessed according to the histological cell type, grading and stage of the disease. This formed a basis for the decision on adjuvant treatments after primary surgery. In the past decade, there have been studies looking into the application of the molecular characteristics in the decision for the need and mode of adjuvant treatments.

Patients having tumours with POLE mutation are of excellent prognosis. Patients in this group are generally younger with endometrioid cell type in the early stage and less lymphovascular space invasion (LVI)[11]. Despite the good prognostic outcome in the POLE mutation, about 50 % of the endometrial cancers in this group have high grade tumours[7]. A significant proportion of POLE mutated tumours are of mixed or serous cell type with or without p53 mutation[12]. However, the presence of p53 mutation or MMR mutation in POLE mutant endometrial cancer does not seem to affect the prognosis and the histological typing seems to have no value in the case of POLE mutation[13,14]. It is believed that a strong immune response in POLE mutated tumours, as reflected in lymphocytic infiltration in the tumour tissue could be the explanation for the good prognosis[15].

Patients with the p53 mutated tumours are considered to have the worst prognosis. Most of the tumours in this group are high grade non-endometrioid carcinomas. A relatively high proportion of patients were found to have deep myometrial invasion and LVI[11] Patients having p53 mutation associated with substantial LVI and more than 10 % L1 cell adhesion molecule (L1CAM) expression is the strongest prognostic indicator for recurrence of disease and poor overall survival[16]. About 85 % of all MMR deficient tumours are endometrioid with about half of them are high grade tumours[17]. In the presence of p53 mutation, MMR status overrides p53 mutation and governs the prognosis, while the presence of POLE mutation overrides the MMR status and give a better prognosis[11,18]. The clinicopathological factors have more effect on the prognosis of MMR mutated group than the POLE mutated group[19]. The prognosis of MMR deficient tumours is considered intermediate in the risk level.

NSMP tumours account for about 40 % of all endometrial cancers[7]. This is the most heterogeneous group and the prognosis is most affected by the clinicopathological factors[19]. Individual biomarkers such as L1CAM and CTNNb1 may be potentially useful in this category to further stratify the risk level[20].

In the PORTEC-3 trial for high-risk endometrial cancer, it showed that molecular classification has a strong prognostic value in high risk endometrial cancers. Patients with POLE mutation had an excellent survival while the p53 mutated group had the worst prognosis. The other two subgroups were considered as intermediate in terms of prognosis[21].

Therapeutic Considerations

In 2020, the ESGO/ESTRO/ESP published the guidelines for the management of patients with endometrial cancer. Recommendations concerning molecular testing were included in the guidelines. MMR IHC or MSI testing was recommended in all patients with endometrial cancer with a view to identify those high risk families for further management, including counselling, screening and prophylactic operations. Molecular classification was encouraged in all endometrial cancers, especially those high grade tumours. POLE mutation analysis may be omitted in cases with low grade histology. In defining the cancers in different prognostic risk groups, the molecular classification was incorporated[22].

In the POLE mutated tumours, even for those high grade tumours with substantial LVI, the prognosis is still exceptionally favourable with rare relapse regardless of adjuvant therapy. Therefore, it was advised that stage 1 or 2 POLE mutated tumours were considered as low risk and did not need adjuvant treatment[21]. However, this was not agreeable to some others due to the lack of srandomised controlled trials to substantiate the above advocate.

In the PORTEC 3 study, high risk patients included in the study were defined if one of the following criteria was matched: 1. Endometrioid endometrial cancer (EEC) grade 3, stage 1A with documented LVI; 2. EEC grade 3, stage 1B; 3. EEC stage 2-3; 4. Non-EEC stages 1-3. As aforementioned, p53 abnormal endometrial cancer carries the worst outcome. A survival benefit was shown when combined chemotherapy and radiotherapy was given compared to radiotherapy alone. For the MMR deficient tumours, it was regarded as intermediate risk. Addition of chemotherapy on top of radiotherapy did not show a reduction in the rate of recurrence[21].

Patients with endometrial cancer, in general, have a good prognosis but the survival is poor for recurrent or metastatic diseases[22]. The standard treatment for metastatic diseases has been chemotherapy and hormonal therapy if tumours are hormone sensitive. In recent years, there are studies showing the potential use of targeted therapies. Those therapies are targeting the immune system, DNA repair mechanism and cellular pathways. Among the above, more data is available for the therapies targeting the immune system. A list of check point inhibitors, including the programmed death protein 1 (PD-1) inhibitors such as pembrolizumab and dostarlimab; as well as programmed death-ligand 1 (PD-L1) inhibitors such as durvalumab and avelumab have been studied and most of them are in the early phases.

In September 2021, FDA approved the use of pembrolizumab in combination with lenvatinib (a multikinase inhibitor) for the treatment of advanced endometrial cancer in MMR proficient tumours irrespective of the PD-1 status. In the study, lenvatinib plus pembrolizumab led to significantly longer progression-free survival and overall survival than chemotherapy among patients with advanced endometrial cancer[24].

In February 2023, FDA approved the use of dostarlimab in MMR deficient advanced or recurrent endometrial cancers. It was shown in a phase 1 single arm study that, the overall response rate for single agent dostarlimab was 43.5 % in the MMR deficient/MSI-high cohort[25]. Lately, a phase 3 global, double-blind, randomised, placebo-controlled trial was published on the use of dostarlimab with carboplatin and paclitaxel. It showed that, in the MMR deficient/MSI-high cohort, the 24 months progression free survival was 61.4 % with the addition of dostarlimab compared to 15.7 % in the group using carboplatin and paclitaxel along[26].

A lot of clinical studies on the targeted agents are still ongoing. With the understanding of the molecular basis of endometrial cancer and the emergence of the novel targeted agents, the treatment outcome for high risk and advanced endometrial cancer could probably be improved in the next one to two decades.

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Non-invasive Prenatal Screening

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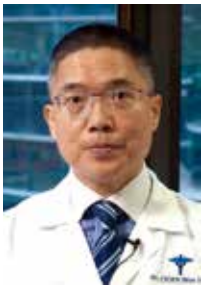

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This article has been selected by the Editorial Board of the Hong Kong Medical Diary for participants in the CME programme of the Medical Council of Hong Kong (MCHK) to complete the following self-assessment questions in order to be awarded 1 CME credit under the programme upon returning the completed answer sheet to the Federation Secretariat on or before 31 August 2023.

INTRODUCTION

The presence of male DNA in the blood of women carrying male foetuses was first detected in 1997[1]. Non-invasive prenatal screening (NIPS)/non-invasive prenatal testing (NIPT) is based on the analysis of cell-free DNA (c-f DNA) circulating in maternal plasma. It has been available clinically to screen for chromosomal abnormalities in China, Europe, and the United States since 2011[2]. As with the introduction of traditional serum screening in the late 1980s, NIPS primarily aimed to identify pregnancies with trisomy 21[3]. NIPS has continued to evolve with an ongoing expansion of applications to common trisomies, sex chromosome aneuploidies and goes well beyond chromosomal screening covered by traditional methods. The use of NIPS by low-risk patients has, most significantly, led to its widespread adoption across all age groups and risk categories, including certain national healthcare systems[4,5]. With the rapid development of the technology, although there remains a considerable debate, its use extends to additional chromosomal aberration and genome-wide NIPS(G-W NIPS).

NIPS: A SCREENING TEST

NIPS is highly sensitive and specific for fetal trisomies. However, it is still considered a screening test due to infrequent false-positive and false-negative results. An invasive procedure (e.g. chorionic villus sampling (CVS) or amniocentesis) and subsequent cytogenetic analysis are considered the gold standard diagnostic test. An invasive diagnostic test is recommended for women screened positive by NIPS, particularly those considering pregnancy termination.

COMMON TRISOMIES: TRISOMY 21 (T21), TRISOMY 18 (T18), TRISOMY 13(T13)

Screening for Down's syndrome has been changing dramatically in recent decades. It started with a direct invasive procedure for advanced maternal age, followed by second-trimester serum screening, the addition of nuchal translucency, and combined first-trimester screening in sequence. The first large-scale validation study demonstrated that NIPS was 100 % sensitive and 97.9 % sensitive for detecting Down Syndrome[3].

In screening for common trisomies (T13, T18 & T21), NIPS is highly sensitive and specific compared with traditional screening[6]. In the pooled analysis of NIPS for T21, T18 & T13, the clinical sensitivities were 99.2 % (78.2 % - 100 %), 90.9 % (70.0 % - 97.7 %), and 65.1 % (9.16 % - 97.2 %) respectively[7]. The corresponding clinical specificities were above 99.9 % for T21, T18 and T13[7]. The detection rates for NIPS in foetal T21, T18 and T13 were 98.8 % (95 % CI = 97.8 % - 99.3 %), 98.83 % (95 % CI = 95.45 % - 99.71 %), and 92.85 % (95 % CI = 81.15 % - 97.5 %) with a corresponding false-positive rate (FPR) of 0.04 % (95 % CI = 0.02 % - 0.08 %), 0.07 % (95 % CI = 0.03 %-0.17 %) and 0.04 % (95 % CI = 0.02 % - 0.08 %) respectively[6]. The positive predictive values (PPVs) in screening for T21, T18 and T13 were 91.8 % (95 % CI = 88.4 % - 94.23 %), 65.8 % (95 % CI = 45.3 %-81.7 %) and 37.2 % (95 % CI = 26.1 %-50.0 %) respectively[6]. The sensitivities and specificities for detecting common trisomies using NIPS in general-risk populations are essentially the same as those demonstrated in high-risk cohorts. Similar test performances were found in twin gestations. American College of Medical Genetics and Genomics (ACMG) recommends NIPS over traditional screening methods for all pregnant patients with singleton and twin gestations to screen common trisomies[6].

SEX CHROMOSOME ANEUPLOIDIES (SCAs)

The option for foetal SCAs screening is exclusive to NIPS and hasn't been available through conventional screening. The screening performance of NIPS for SCAs was high in all four common types: monosomy X, XXX, XXY, and XYY. The overall detection rate for any SCAs was 99.6 % (95 % CI = 94.8 % - 100 %), and specificity was 99.8 % (95 % CI = 99.7 % - 99.9 %)[6]. However, there are differences in PPVs across the different SCAs. The PPVs of NIPS for monosomy X, XXX, XYY and XXY were 29.5 % (95 % CI =22.7 % - 37.4 %), 54 % (95 % CI = 40.6 % - 66.8 %), 74 % (95 % CI = 59.5 % - 84.7 %), and 74.5 % (95 % CI = 58.4 % - 85.8 %) respectively[6]. Known biological causes, such as confined placental mosaicism, true foetal mosaicism, or mosaic maternal karyotype, may account for discrepant NIPS results that result in a decreased PPV. The PPV was higher for sex chromosome abnormalities with a supernumerary Y chromosome and lower for monosomy X[8]. The reasons for lower PPV for monosomy X are related to higher rates of placental mosaicism and maternal mosaicism[6].

Because of this, a diagnostic test by amniocentesis is usually recommended after screening positive for SCAs.

NIPS for SCAs are now widely available through commercial providers but are not yet included in publicly funded programs[4,5]. There has been debate over whether SCAs screening should be offered because of the variable phenotype of SCAs. International guidance from professional and medical organisations varies, with no consensus on its ethical acceptability[9]. Because of the controversies, commercial companies usually provide an opt-out option for SCAs. In my centre, almost all patients choose to have SCAs screening when doing NIPS.

SUBCHROMOSOMAL COPY NUMBER VARIANTS (CNVs)

Subchromosomal CNVs are abnormalities in which genome sections are deleted or duplicated. They are relatively common in prenatal diagnosis. The prevalence of pathogenic/likely pathogenic CNVs ranges from 2.5 % to 5.3 % in pregnant women undergoing prenatal diagnosis[10,11]. Some common CNVs are associated with severe phenotypes, including structural anomalies, intellectual disability, developmental delay, and autism spectrum disorders. Traditionally, no screening options exist to identify CNVs at the prenatal stage. G-W NIPS randomly sequences and sanalyses all chromosomes, which has the inherent advantage of detecting CNVs anywhere in the genome instead of targeted sequencing. With the use of G-W NIPS, screening of CNVs is becoming more popular. Some NIPS screening panel includes common microdeletion syndromes with well-defined, severe phenotypes. They are DiGeorge syndrome (22q11.2 deletion), Prader-Willi and Angelman syndromes (15q11.2 - q13 deletion), 1p36 deletion syndrome, Cri-du-chat syndrome (terminal 5p deletion), Jacobsen syndrome (terminal 11q deletion), Wolf-Hirschhorn syndrome (terminal 4p deletion), and Langer-Giedion syndrome (8q24 deletion). The best-validated and most often reported conditions are the first five listed above[12]. A prospective study using genome-wide NIPS in 94,085 pregnancies demonstrated that the PPVs were 92.9 % for DiGeorge syndrome, 75 % for Prader-Willi/Angelman syndromes, 0 % for 1p36 deletion syndrome, and 50 % for Cri-du-chat syndrome[13]. Based on findings from two national-wide first-tier G-W NIPS studies, the incidences of CNVs were 0.16 % and 0.07 %[4,5]. The corresponding PPVs were 33 % and 47 %, which were comparable with the PPV for trisomy 13 (37.2 %)[4,5,6].

Clinical validation of NIPS for CNVs is challenging. There was a lack of complete follow-up of pregnancies screened for CNVs. CNV-driven syndromes, with mild phenotype, often escape detection even at birth and thus making an accurate determination of birth prevalence, PPV, and negative predictive value (NPV) difficult[6]. Although ACMG has not endorsed the screening of CNVs by G-W NIPS, G-W NIPS detects pathological/likely pathological CNVs, which will affect clinical decision-making. This screening practice is common in commercial settings and carried out in national-wide screening[4,5]. Therefore, pretest counselling is critical in allowing individuals to make well-informed decisions about pursuing this option.

RARE AUTOSOMAL TRISOMIES (RATs)

G-W NIPS can detect aneuploidies involving all chromosomes, including RATs. RATs are any trisomy other than those involving chromosomes 13, 18, 21, X, or Y. Related to the rarity of viable foetus with RATs, sensitivity, specificity, and detection rate are usually unavailable. Based on Netherland and Belgium NIPS studies, RATs were detected in 0.18 % and 0.23 % of cases, and the corresponding PPVs were low, 6 % and 4.1 %[4,5]. There are several reasons for low PPVs in RATs: (1) Non-mosaic RATs usually result in miscarriage in early foetal life before diagnostic amniocentesis; (2) Demise of a RAT-affected co-twin may be a cause of false positive; (3) NIPS is testing for placenta c-f DNA instead of foetal c-f DNA and confined placental mosaicism (CPM) is common for NIPS detected RATs[6]. Selected RATs related CPM were associated foetal growth restriction, adverse perinatal outcomes and other phenotypic consequences[14]. In addition, RATs are prone to "trisomy salvage", leading to an increased incidence of uniparental disomy (UPD). Imprinted genes are present on chromosomes 6, 7, 11, 14, 15, and 20. Therefore, when false positive RATs are present in chromosomes with imprinted genes, UPD testing is recommended.

FOETAL FRACTION (FF)

The proportion of c-f DNA in maternal blood from the placenta is known as the foetal fraction. It comprises approximately 10 % of the total c-f DNA in maternal blood in the late first trimester and increases throughout gestation[15]. FF should be measured and must be at least 4 % when offering NIPS to avoid false negative results due to insufficient c-f DNA in the maternal plasma[16]. Factors contributing to a low FF include early gestational age (< 10 weeks), high maternal body mass index, inadequate blood sample, maternal use of heparin, foetal or maternal mosaicism, and pregnancy with more than one foetus[16,17]. Low FF may be associated with hypertensive disease of pregnancy, small for gestational age, preterm birth, gestational diabetes & structural anomaly[18].

ULTRASOUND BEFORE AND AFTER NIPS

The ACOG recommends a baseline ultrasound before NIPS[16]. Small foetal size, multiple pregnancies, foetal demise, and the presence of large uterine fibroid may affect the performance of NIPS.[16] Some advised the exclusion of grossly thick nuchal translucency, > 3.5 mm, is complimentary to NIPS. However, medical/nursing staff not trained in nuchal translucency may perform a dating scan. The exclusion criteria are, therefore, not very applicable in practice. Patients with positive NIPS results should undergo a comprehensive ultrasound evaluation with an opportunity for diagnostic testing to confirm results. A detailed foetal ultrasound may detect significant foetal structural anomalies, assist post-test counselling, and assist recommendation of amniocentesis or CVS.[19]

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NO CALL TEST RESULT

Approximately 1 % of samples submitted for NIPS are not reported by the laboratory or are uninterpretable (no call test result)[6]. Low FF, maternal autoimmune illness, maternal malignancies, and maternal use of heparin are the potential causes. When the test is repeated later in gestation for low FF, the result is reportable in 75 % to 80 % of the time[20]. Some studies suggested low FF has a higher rate of chromosomal disorders, while others have not confirmed the association[21,22].

The genomic aberrations in malignant cells may manifest as an uninterpretable result in NIPS. The likelihood of maternal malignancy is the highest when the NIPS result demonstrates multiple aneuploidies or autosomal monosomy that are not confirmed with foetal diagnostic testing[23]. However, there is no data regarding the sensitivity or specificity of NIPS in identifying maternal neoplasms. In addition, no validated clinical approach exists to evaluate pregnant women with NIPS-indicated neoplastic disease, though some centres have suggested protocols[24]. Patients with no-call results should receive further genetic counselling and be offered comprehensive ultrasound evaluation and diagnostic testing[16].

POST-TEST COUNSELLING

Patients with a negative screening test result should be made aware that this substantially decreases their risk of the targeted aneuploidy but does not ensure that the foetus is unaffected. This is known as residual risk. It is extremely important that the provider fully explains the limitations of this screening test.

For screen-positive results, the clinician's primary task is to explain the meaning and PPV of this result. However, knowledge among professionals about NIPS is limited, not infrequently leading to inaccurate genetic counselling and a significant impact on parental anxiety[25,26]. The high sensitivity and specificity of NIPS are often confused with a high PPV or even considered a diagnostic result. Consequently, it has been reported that a proportion of these patients opt for termination of pregnancy without performing a diagnostic test[27].

DIAGNOSTIC TEST AFTER POSITIVE NIPS

Diagnostic testing options after positive NIPS include chorionic villus sampling (CVS) and amniocentesis. While CVS can provide an earlier answer, it may not always be the appropriate test given the potential for CPM, the rate of which varies with specific aneuploidies. Positive NIPS with ultrasound anomaly and chromosomal aberration with a low level of CPM may be suitable for CVS. Positive NIPS with a high level of CPM without ultrasound features should be advised to undergo amniocentesis[19]. In addition, parental variables should be taken into account for earlier diagnostic procedures.

LOCAL PRACTICE

In my centre, a private hospital, we introduced NIPS in 2011. Increasing uptake of NIPS has been shown in local data[28]. Currently, it replaces traditional serum screening for Down Syndrome in my centre. (Table 1) Before 2018, abnormal findings of NIPS other than common trisomies and SCAs are reported as additional findings. In 2018, NIPS was divided into the basic panel (T13, 18, 21 & SCAs & 6 common microdeletions) and the advanced panel (the basic panel component plus other chromosomal aberration > = 3 Mb). NIPS is also available in the public sector in Hong Kong since 2019. It is a second-tier test for women with positive conventional Down syndrome screening. Foetal sex is not usually reported in public settings. However, major sex chromosomal abnormalities, chromosomal duplications, or deletions are reported on individual cases at the laboratory's discretion[29]. G-W NIPS beyond common trisomies are not recommended by professional authority. Clinically significant positive findings beyond the common trisomies detected during G-W NPIS should be reported and shared with the patient, and genetic counselling should be provided. The failure to do so may be construed as serious negligence[5].

Table 1: Data of NIPS of Hong Kong Sanatorium and Hospital OG centre. (Internal data summarised by author)

Year	1TC DSS	NIPS total	Selected Panel NIPS	G-W NIPS
2013	696	625	/	/
2014	611	926	/	/
2015	231	1,137	/	/
2016	143	1,160	/	/
2017	49	1,568	/	/
2018	5	1,552	1,490	64 (4%)
2019	0	1,840	847	993 (53%)
2020	0	993	470	523 (53%)
2021	0	882	334	488 (55%)
2022	0	787	294	493 (63%)

1TC DSS: First trimester combined Down syndrome screening
Selected Panel: T13, T18, T21, SCAs and 6 microdeletions (-1p,2q,5p,8q,15q,22q)

CONCLUSION

NIPS using c-f DNA is the most sensitive and specific screening for trisomy 21, 13, and 18 and sex chromosome aneuploidies in pregnancy after ten weeks. The service provider should know the basic data regarding NIPS. (Table 2) High sensitivity and specificity in NIPS should not be confused with high PPV. Positive NIPS results need a diagnostic test for confirmation before making critical pregnancy decisions. Expanding the scope to G-W NIPS allows patients and providers to identify additional, clinically relevant chromosomal abnormalities that would otherwise go undetected by limited-panel NIPS. Although G-W NIPS is currently not recommended by professional authorities, it provides more reproductive options for pregnant women. With the advance of technology, cost reduction, commercial interests, and consumer demand, the G-W approach will likely be more prevalent. Currently, G-W NIPS is widely

adopted in private settings and national-wide screening programs. At the same time, we must emphasise that this test has limitations. Pretest and post-test counselling are, therefore, very important, and patients should be aware of the pros and cons of NIPS of various panels, especially when faced with an abnormal result.

Table 2: Summary of available data on NIPS. (Developed by author)

	Positive rate	PPV	Sens	Spec	DR
T21	0.32 %[5] - 0.33 %[4]	91.8 %[6]	99.2 %[7]	99.9 %[7]	98.8 %[6]
T18	0.07 %[4,5]	65.8 %[6]	90.9 %[7]	99.9 %[7]	98.83 %[6]
T13	0.06 %[5] - 0.07 %[4]	37.2 %[6]	65.1 %[7]	99.9 %[7]	92.85 %[6]
SCAs	0.61 %*	77 %[30]	/	99.8 %[6]	99.6 %[6]
45,X	0.27 %*	29.5 %[6]	/	/	/
XXX	0.09 %*	54 %[6]	/	/	/
XXY	0.15 %*	74 %[6]	/	/	/
XYY	0.05 %*	74.5 %[6]	/	/	/
CNVs	0.07 %[5] - 0.16 %[4]	32 %[4] - 47 %[5]	/	/	/
RATs	0.18 %[4] - 0.23 %[5]	4.1 %[5] - 6 %[4]	/	/	/
T13,T18, T21	0.45 %[5] - 0.48 %[4]	/	/	/	/
G-W NIPS**	0.75 %[5] - 0.84 %[4]	/	/	/	/

Sens: sensitivity Spec: specificity DR: detection rate
*Pooled data of reference 31, 32, 33, 34
** excluding SCAs

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MCHK CME Programme Self-assessment Questions

Please read the article entitled "Non-invasive Prenatal Screening" by Dr CHAN Wan-pang and complete the following self-assessment questions. Participants in the MCHK CME Programme will be awarded CME credit under the Programme for returning completed answer sheets via fax (2865 0345) or by mail to the Federation Secretariat on or before 31 August 2023. Answers to questions will be provided in the next issue of The Hong Kong Medical Diary. (Address: Duke of Windsor Social Service Bldg., 4/Fl., 15 Hennessy Rd., Wan Chai. Enquiry: 2527 8898)

Questions 1-10: Please answer T (true) or F (false)

1. In screening for common trisomies (T13, T18 & T21), NIPS is highly sensitive and specific compared with traditional screening.
2. Both chorionic villus sampling and amniocentesis are suitable diagnostic tests after a positive NIPS result for monosomy X with no ultrasound anomaly.
3. Subchromosomal CNVs are abnormalities in which genome sections are deleted or duplicated. They are not common in prenatal diagnosis.
4. Low Fetal fraction may be associated with hypertensive disease of pregnancy, small for gestational age, preterm birth, gestational diabetes & structural anomaly.
5. Patients with positive NIPS results should undergo a comprehensive ultrasound evaluation with an opportunity for diagnostic testing to confirm results.
6. The likelihood of maternal malignancy is the lowest when the NIPS result demonstrates multiple aneuploidies or autosomal monosomy that are not confirmed with fetal diagnostic testing.
7. The high sensitivity and specificity of NIPS are often confused with a low PPV or even considered a diagnostic result.
8. Positive NIPS with a high level of CPM without ultrasound features should not be advised to undergo amniocentesis.
9. NIPS using c-f DNA is not the most sensitive and specific screening for trisomy 21, 13 and 18 and sex chromosome aneuploidies in pregnancy after ten weeks.
10. Pretest and post-test counseling are very important and patients should be aware of the pros and cons of NIPS of various panels.

ANSWER SHEET FOR AUGUST 2023

Please return the completed answer sheet to the Federation Secretariat on or before 31 August 2023 for documentation. 1 CME point will be awarded for answering the MCHK CME programme (for non-specialists) self-assessment questions.

Non-invasive Prenatal Screening

Dr CHAN Wan-pang

MBChB, FRCOG, FHKCOG, FHKAM(O&G), Cert HKCOG(MFM)

Specialist in Obstetrics and Gynaecology

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐

Name (block letters):_____ HKMA No.: _____ CDSHK No.: _____

HKID No.: __ __ - __ __ __ __ X X (X) HKDU No.: _____ HKAM No.: _____

Contact Tel No.:_____ MCHK No. / DCHK No.: _____(must fill in)

Answers to July 2023 Issue

Comprehensive Geriatric Assessment for Older People with Diabetes Mellitus

1. F **2.** T **3.** T **4.** F **5.** T **6.** T **7.** T **8.** T **9.** F **10.** T

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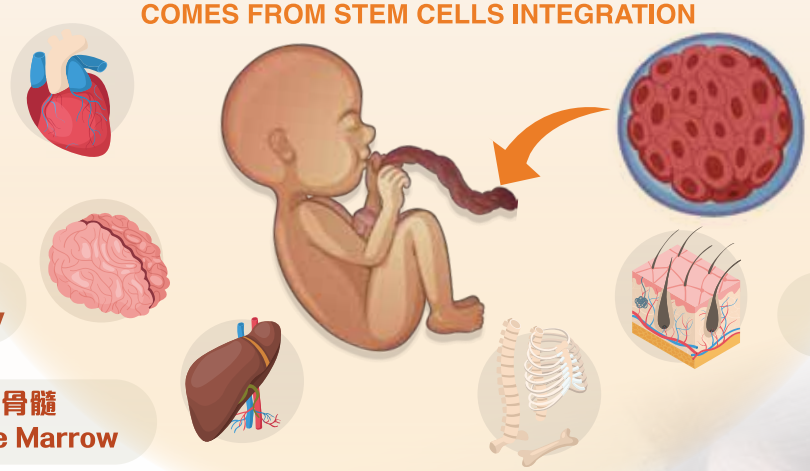

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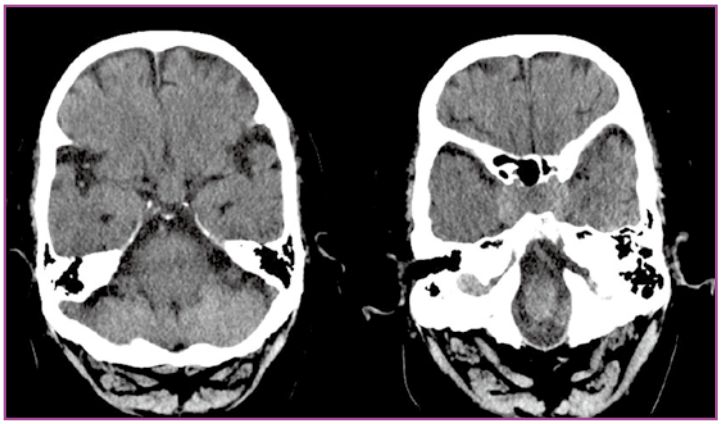
Radiology Quiz

Dr Ivan CHEUNG
MBBS, FRCR

Dr Ivan CHEUNG



Questions

1. What is the abnormality in the non-contrast CT brain?
2. What are the most likely differential diagnoses?
3. What is the next step of the investigation?

(See P.36 for answers)

Certificate Course on

Renal Medicine 2023

(Video Lectures)

Jointly organised by

The Federation of Medical Societies of Hong Kong

Hong Kong Society of Nephrology

Objectives:

To update the participants on new advances in renal medicine and clinical practice of common renal problems, and to help the participants to interpret results of common renal investigations.

Date	Topics	Speakers
21 September 2023	Common investigation tests for renal disease including approach to proteinuria and haematuria	Dr. Ronald LIN Associate Consultant Department of Medicine & Geriatrics Caritas Medical Centre
	Update and management of acute kidney injury	Dr. Chun-Hay TAM Clinical Associate Professor (Honorary), Department of Medicine & Therapeutics, The Chinese University of Hong Kong; Honorary Clinical Assistant Professor, Department of Medicine, University of Hong Kong
28 September 2023	Update and management of glomerular disease	Dr. Jason IP Associate Consultant Department of Medicine Tseung Kwan O Hospital
	ABC of hemodialysis therapy	Dr. Connie Ping-kwan CHAN Associate Consultant Alice Ho Miu Ling Nethersole Hospital
5 October 2023	Nutritional management in kidney diseases	Ms. Cherry Pui-yee LAW Dietitian Pamela Youde Nethersole Eastern Hospital
	Kidney involvement in multi-system disorders	Dr. Benjamin SO Resident Specialist Division of Nephrology Department of Medicine Queen Mary Hospital
12 October 2023	Drug prescribing in renal failure	Dr. Andrew LUK Associate Consultant Department of Medicine & Geriatrics Pok Oi Hospital
	ABC of peritoneal dialysis therapy	Dr. Joseph Ho-Sing WONG Associate Consultant Department of Medicine Queen Elizabeth Hospital
19 October 2023	Update on diabetic kidney disease	Dr. Sam LAU Resident Specialist Prince of Wales Hospital
	Update and management of chronic kidney disease	Dr. Lorraine KWAN Associate Consultant Department of Medicine Tung Wah Hospital 东华中醫師
26 October 2023	Update and management of hypertension	Dr. Lo-yi HO Honorary Associate Consultant Kwong Wah Hospital
	ABC of renal transplantation	Dr. Ivy Lok-yan WONG Associate Consultant Renal Unit Princess Margaret Hospital

Date : 21,28 September & 5, 12, 19, 26 October, 2023 (Thursday)
Duration of session : 1.5 hours (6 sessions)
Time : 7:00 pm – 8:30 pm
Course Feature : Video lectures (with Q&A platform for participants to post the questions)
Quiz for doctors : DOCTORS are required to complete a quiz after the completion of each lecture
Language Media : Cantonese (Supplemented with English)
Course Fee : HK$1,000
Certificate : Awarded to participants with a minimum attendance of 70%
Deadline : 14 September 2023
Enquiry : The Secretariat of The Federation of Medical Societies of Hong Kong
Tel.: 2527 8898 Fax : 2865 0345 Email : vienna.lam@fmshk.org

CME / CNE Accreditation in application
Online Application from website: http://www.fmshk.org

Let's Walk the World

Dr Joseph WT CHAN

MBBS (HK), FRCOG, FHKCOG, FHKAM (Obstetrics and Gynaecology)

Honorary Clinical Associate Professor (HKU)
Specialist in Obstetrics and Gynaecology

Dr Joseph WT CHAN

" The fleeting hour of life of those who love the hills is quickly spent, but the hills are eternal. Always there will be the lonely ridge, the dancing beck, the silent forest; always there will be the exhilaration of the summits. These are for the seeking, and those who seek and find while there is still time will be blessed both in mind and body."

- Alfred Wainwright

Hiking is one of my favourite hobbies, offering me not only good physical exercise but also the opportunity to appreciate the world's wonder to clear my mind.

My passion for hiking began when I stumbled upon an article titled "When you are over 50, you can do this", which chronicled a trek up Mount Kilimanjaro in Tanzania, the highest peak in Africa at 5,895 meters. The article sparked a burning desire in me to explore the world, starting with Mount Kilimanjaro, in August 2013. The journey was unforgettable: a group of 14 (including four doctors and two nurses), hiked for six days, accompanied by a band of 60 porters who carried our luggage and all necessities. With tents set up for dining and bathroom use, we hiked during the day and rested and slept in tents at night. Finally, six members of our group reached the summit, making it to the top.

Inspired by this experience, we formed a hiking fraternity called "Walk the World" which has taken us to some of the most breath-taking destinations around the world, featuring stunning scenic beauty. It has brought us to places that are often inaccessible by vehicles, allowing us to fully immerse ourselves in nature's wonders. From the UNESCO pilgrimage route of Kumano Kodo in Japan to Overland Track in Tasmania, from the Torres del Paine W Trek in Patagonia of Chile to Dolomites Mountain's Alta Via 1 in Italy, we have left footprints in many corners of the globe since 2013. Among all, Japan stands out as our favourite destination, having visited this country five times, thanks to its proximity (only a few hours away by plane), excellent cuisine, and relaxing hot springs. Each of our journeys has been unique, offering spectacular landscapes and a tremendous sense of accomplishment upon completion, which fuels our desire to continue exploring the world on foot.

This year's walk took us to the Coast to Coast path in England. Originally laid out by Alfred Wainwright in his book "*A Coast to Coast Walk*" in 1973, this 313-km walking trail spans Northern England, starting at St Bees on the Irish Sea and ending at Robin Hood's Bay on the North Sea. Along the way, it passes through three National Parks in the Lake District, the Yorkshire Dales and the North York Moors, and we spent eight days hiking the highlights of this trail. The path is renowned for its natural wonders, quaint villages and ancient structures, making it one of the most popular long-distance hikes in UK.

Our trip began on May 7th, as we arrived in Penrith to meet our guides and fellow travellers. The following day, we trekked the cliffs in St Bees in typical England weather - rainy and windy. But in retrospect, we were all grateful for the experience, as it prepared us for the weather we encountered later in the Lake District. From there, we headed inland, ascended the bald crown of Dent, and concluded our hike in the picturesque Lakeland village of Ennerdale Bridge.

Our third day's hike started at the tranquil Ennerdale Wate, where we followed a scenic lakeside trail into Ennerdale Forest, rambling up the valley and into the hills. We then continued upwards alongside Loft Beck stream, taking in captivating views of Ennerdale before arriving at Honister Slate Mine.

What awaited us on day four was the home of one of England's most revered poets, William Wordsworth, situated at the heart of Lake District. A lover of nature, Wordsworth found much inspiration on his long walks. We paid tribute to him by visiting Dove Cottage before hiking a high pass over Grisedale Hause and descending into Grisedale Valley. The view of the final stop, Ullswater, was simply beyond words.

On day five, we set off for Yorkshire Dales, which is well-known for its wildflower meadows and ancient stone walls. After stopping for lunch in a small village of Orton, we continued eastward across the moors, ultimately spending the night in the charming village of Ravenstonedale.

The journey reached its halfway point on day six as we walked from Ravenstonedale to a small town called Kirkby Stephen. We also crossed the Pennine Hills via a pretty hamlet of Keld, and arrived at the magnificent Swaledale Valley. The trail continued alongside a winding river, and after indulging in traditional afternoon tea with scones, clotted cream and jam in Muker, we completed the day's hike at Gunnerside.

The next day, we pushed on to the third and final National Park, the North York Moors, crossing the Vale of Mowbray. After a few low hilltops, we followed a

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historic railway track to Blakey Ridge, and called it a day at a 16th-century tavern above the Yorkshire Moors.

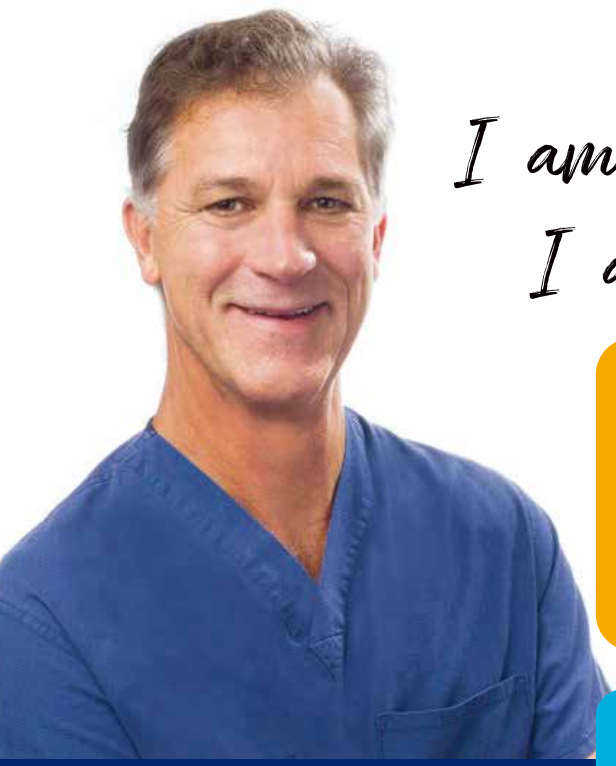
On the eighth day, we began with a descent from the high point on Blakey Ridge into the Great Fryup across the moor. The trail led us to the beautiful village of Glaisdale and the historic "Beggar's Bridge". Another highlight was our short ride aboard a heritage steam railway from Grosmont to Goathland Station, passing through the picturesque landscapes featured in *Harry Potter films*.

The trek's final leg on day nine took us through some woodland trails in Littlebeck to witness the striking Falling Foss waterfall. As we moved towards the coast, we were treated to impressive views of beautiful cliffs and sweeping sea before finally arriving at Robin Hood's Bay on the edge of the North Sea. That evening, we celebrated the end of our journey with a fun farewell dinner before departing for York the next day.

Our latest triumph on the Coast to Coast walk marks a decade of hiking accomplishments. As we traversed the breadth of England, the English countryside's rustic idyll and verdant tranquillity revealed themselves in unique ways. The views were magnificent yet soothing; the trail is manageable but not without its challenges. It was a vivid testimony that hiking is a pastime that can be enjoyed by individuals of all ages, including those over 50.

So whether you're a seasoned hiker or just starting out, there is no better way to explore the world's natural wonders than on foot. The sense of accomplishment and awe-inspiring scenery makes it all worth it. So grab your boots and join us as we continue to walk the world. Who knows what mesmerising views and unforgettable experiences await us next?

UROLIFT



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I am a patient.

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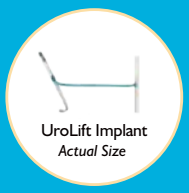
>
> **Philip Butler, M.D., F.A.C.S.*** *Genesis Healthcare Partners* and UROLIFT SYSTEM PATIENT



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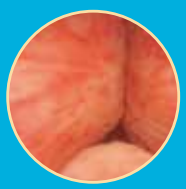
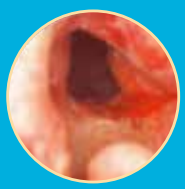


PRE-PROCEDURE



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*Dr. Butler is a paid consultant of NeoTract|Teleflex. Results may vary.
**No instances of new, sustained erectile or ejaculatory dysfunction in the L.I.F.T. pivotal study.

1. Roehrborn, J Urol 2013 2. Bachmann, Eur Urol 2013; 3. AUA BPH Guidelines 2003, 2010, 2018 4. Naspro, *Eur Urol* 2009 5. Montorsi, *J Urol* 2008; McVary, *J Sex Med* 2016 6. Shore Can J Urol 2014 7. Roehrborn et al. *Can J Urol* 2017 8. Eure et al J Endourol 2019 9. Mollengarden, Prostate Cancer Prostatic Dis 2018; 10. Gilling, J Urol 2017

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INTERVENTIONAL UROLOGY

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		★In-person / Zoom Live HKMA-HKSH CME Programme 2022-2023 Topic: Bleeding Tendency ★Certificate Course on Palliative Medicine for Health Care Workers 2023 (Video Lectures) **1**	**2**	★Certificate Course in Allergy 2023 (Video Lectures) **3**	**4**	**5**
6	**7**	★Certificate Course on Palliative Medicine for Health Care Workers 2023 (Video Lectures) **8**	★In-person / Zoom Live HKMA-CUHK Medical Centre CME Programme 2023 Common health problems for the elderly Topic: Osteoarthritis of the knee - Current conservative therapy & surgical options **9**	★Certificate Course on Cytogenomics 2023 (Video Lectures) **10**	**11**	**12**
★In-person / Zoom Live Diploma in Advances in Medicine 2022-2023 ★In-person / Zoom Live Diploma in Advances in Medicine 2023-2024 ★In-person / Zoom Live Certificate in Advances in Medicine 2023 **13**	**14**	★In-person / Zoom Live HKMA-GHK CME Programme 2023 - Prostate Cancer Survivorship: Optimising Care For Post Treatment Urinary Incontinence And Erectile Dysfunction ★Certificate Course on Palliative Medicine for Health Care Workers 2023 (Video Lectures) **15**	★In-person Latest Diagnostic Tools and Treatment Paradigm for Prostate Cancer **16**	★Certificate Course on Cytogenomics 2023 (Video Lectures) **17**	**18**	**19**
20	**21**	★Certificate Course on Palliative Medicine for Health Care Workers 2023 (Video Lectures) **22**	**23**	★FMSHK Executive Committee Meeting ★FMSHK Council Meeting ★Certificate Course on Cytogenomics 2023 (Video Lectures) **24**	**25**	**26**
27	**28**	★Certificate Course on Palliative Medicine for Health Care Workers 2023 (Video Lectures) **29**	**30**	★Certificate Course on Cytogenomics 2023 (Video Lectures) **31**		

Certificate Course for Nurses and Allied Health Professionals • Course No. C399 • CME/CNE Course

Certificate Course on

Respiratory Medicine 2023

(Video Lectures)

Jointly organised by

The Federation of Medical Societies of Hong Kong
香港醫學組織聯會

Hong Kong Thoracic Society Limited
香港胸肺學會

CHEST Delegation Hong Kong and Macau Limited

Objectives:

To enhance understanding and provide recent updates in various aspects of Respiratory medicine

Date	Topics	Speakers
13 September 2023	Airway Diseases: Asthma & COPD	Dr. TSUI Sui Na Associate Consultant United Christian Hospital
20 September 2023	Lung Cancer	Dr. Stephanie CHU Associate Consultant Queen Elizabeth Hospital
27 September 2023	1. Interpretation of Chest X-Ray	Dr. WONG Wei Yin Consultant Haven of Hope Hospital
	2. Pulmonary Function Test & Arterial Blood Gas	Dr. KWOK Chin Tong Resident Specialist Princess Margaret Hospital
4 October 2023	High Flow Nasal Cannula, Noninvasive Ventilation & Mechanical Ventilation	Dr. LUN Chung Tat Associate Consultant Alice Ho Miu Ling Nethersole Hospital
11 October 2023	Tracheostomy & CPAP Therapy	Mr. NG Shu Wah Nurse Consultant United Christian Hospital Ms. Maggie LIT Nurse Consultant Queen Elizabeth Hospital

Date : 13, 20, 27 September and 4, 11 October 2023 (Wednesday)
Time : 7:00 p.m. – 9:00 p.m. (2 hours per session , total 5 sessions,)
Course Feature : Video lectures (with Q&A platform for participants to post the questions)
Quiz for doctors : DOCTORS are required to complete a quiz after the completion of each lecture
Language Media : Cantonese (Supplemented with English)
Course Fee : HK$1,200
Certificate : Awarded to participants with a minimum attendance of 70% (4 out of 5 sessions)
Deadline : 6 September 2023
Enquiry : The Secretariat of The Federation of Medical Societies of Hong Kong
Tel.: 2527 8898 Fax : 2865 0345 Email : vienna.lam@fmshk.org

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Date / Time	Function	Enquiry / Remarks
1 TUE 1:00 PM	**In-person / Zoom Live** **HKMA-HKSH CME Programme 2022-2023** **Topic: Bleeding Tendency** Organiser: The Hong Kong Medical Association & The Hong Kong Sanatorium & Hospital Speaker: Dr Raymond Hin--suen LIANG LIANG Venue: HKMA Dr. Li Shu Pui Professional Education Centre, 2/F, Chinese Club Building, 21-22 Connaught Road, Central, Hong Kong	HKMA CME Dept. Tel: 3108 2507 1 CME Point
7:00 PM	**Certificate Course on Palliative Medicine for Health Care Workers 2023 (Video Lectures)** Organiser: The Federation of Medical Societies of Hong Kong Speaker: Dr Thomas Chi-ming MA	Ms Vienna LAM Tel: 2527 8898
3 THU 7:00 PM	**Certificate Course in Allergy 2023 (Video Lectures)** Organiser: The Federation of Medical Societies of Hong Kong Speaker: Dr Alson WM CHAN	Ms Vienna LAM Tel: 2527 8898
8 TUE 7:00 PM	**Certificate Course on Palliative Medicine for Health Care Workers 2023 (Video Lectures)** Organiser: The Federation of Medical Societies of Hong Kong Speaker: Dr Deepa NATARAJAN	Ms Vienna LAM Tel: 2527 8898
9 WED 1:00 PM	**In-person / Zoom Live** **HKMA-CUHK Medical Centre CME Programme 2023** **Common health problems for the elderly** **Topic: Osteoarthritis of the knee - Current conservative therapy & surgical options** Organiser: The Hong Kong Medical Association & The CUHK-Medical Centre Speaker: Dr Kevin Ki-wai HO Veune: HKMA Dr. Li Shu Pui Professional Education Centre, 2/F, Chinese Club Building, 21-22 Connaught Road, Central, Hong Kong	HKMA CME Dept. Tel: 3108 2507 1 CME Point
10 THU 7:00 PM	**Certificate Course on Cytogenomics 2023 (Video Lectures)** Organiser: The Federation of Medical Societies of Hong Kong Speaker: Chev. CHAN Wing-kwong	Ms Vienna LAM Tel: 2527 8898
13 SUN 1:00 PM	**In-person / Zoom Live** **Diploma in Advances in Medicine 2022-2023** Organiser: The Chinese University of Hong Kong Speaker: Various Venue: Kai Chong Tong, G/F, Postgraduate Education Centre, Prince of Wales Hospital	Ms Becky YIP Tel: 3505 2195 3 CME Point
1:00 PM	**In-person / Zoom Live** **Diploma in Advances in Medicine 2023-2024** Organiser: The Chinese University of Hong Kong Speaker: Various Venue: Kai Chong Tong, G/F, Postgraduate Education Centre, Prince of Wales Hospital	Ms Becky YIP Tel: 3505 2195 3 CME Point
1:00 PM	**In-person / Zoom Live** **Certificate in Advances in Medicine 2023** Organiser: The Chinese University of Hong Kong Speaker: Various Venue: Kai Chong Tong, G/F, Postgraduate Education Centre, Prince of Wales Hospital	Ms Becky YIP Tel: 3505 2195 3 CME Point
15 TUE 2:00 PM	**In-person / Zoom Live** **HKMA-GHK CME Programme 2023 - Prostate Cancer Survivorship: Optimising Care For Post Treatment Urinary Incontinence And Erectile Dysfunction** Organiser: The Hong Kong Medical Association Gleneagles Hong Kong Hospital Speaker: Dr Wayne Pei LAM Veune: HKMA Dr. Li Shu Pui Professional Education Centre, 2/F, Chinese Club Building, 21-22 Connaught Road, Central, Hong Kong	HKMA CME Dept Tel: 3108 2507 1 CME Point
7:00 PM	**Certificate Course on Palliative Medicine for Health Care Workers 2023 (Video Lectures)** Organiser: The Federation of Medical Societies of Hong Kong Speaker: Dr CHAN Lut-ming	Ms Vienna LAM Tel: 2527 8898
16 WED 1:00 PM	**In-person** **Latest Diagnostic Tools and Treatment Paradigm for Prostate Cancer** Organiser: The HKMA District Health Network (Shatin) Speaker: Dr Raymond Wai-man KAN Venue: Regency Ballroom I, Hyatt Regency Hong Kong, Shatin, 18 Chak Cheung Street, Shatin, NT	Mr Peter HO Tel: 2527 8452 1 CME Point
17 THU 7:00 PM	**Certificate Course on Cytogenomics 2023 (Video Lectures)** Organiser: The Federation of Medical Societies of Hong Kong Speaker: Dr Stephen Tak-sum LAM	Ms Vienna LAM Tel: 2527 8898
22 TUE 7:00 PM	**Certificate Course on Palliative Medicine for Health Care Workers 2023 (Video Lectures)** Organiser: The Federation of Medical Societies of Hong Kong Speaker: Dr POON Yin	Ms Vienna LAM Tel: 2527 8898
24 THU 7:00 PM	**FMSHK Executive Committee Meeting** Organiser: The Federation of Medical Societies of Hong Kong; Venue: Council Chamber, 4/F, Duke of Windor Social Service Building, 15 Hennessy Road, Wanchai, Hong Kong	Ms Nancy CHAN Tel: 2527 8898
7:00 PM	**FMSHK Council Meeting** Organiser: The Federation of Medical Societies of Hong Kong; Venue: Council Chamber, 4/F, Duke of Windor Social Service Building, 15 Hennessy Road, Wanchai, Hong Kong	Ms Nancy CHAN Tel: 2527 8898
7:00 PM	**Certificate Course on Cytogenomics 2023 (Video Lectures)** Organiser: The Federation of Medical Societies of Hong Kong Speaker: Dr Chris Tsun-leung CHAN	Ms Vienna LAM Tel: 2527 8898

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^Based on global Internet search on infant formula on the 1 July 2022 by MangoBox. * 2'-FL, LNnT, DFL, LNT, 3'-SL, 6'-SL, types of HMO, not from human milk
** Milk Oligosaccharides #compared with conventional formula

IMPORTANT NOTICE: We believe that breastfeeding is the ideal nutritional start for babies and we fully support the World Health Organizations recommendation of exclusive breastfeeding for the first six months of life followed by the introduction of adequate nutritious complementary foods along with continued breastfeeding up to two years of age. We also recognize that breastfeeding is not always an option for parents. If parents consider not to breastfeed, healthcare professionals should inform parents that such a decision can be difficult to reverse and that the introduction of partial bottle-feeding will reduce the supply of breast milk. Parents should consider the social and financial implications of the use of infant formula. Infant formula should always be prepared, used and stored as instructed on the label in order to avoid risks to a baby's health.

WYE-AD-083-JUN-23

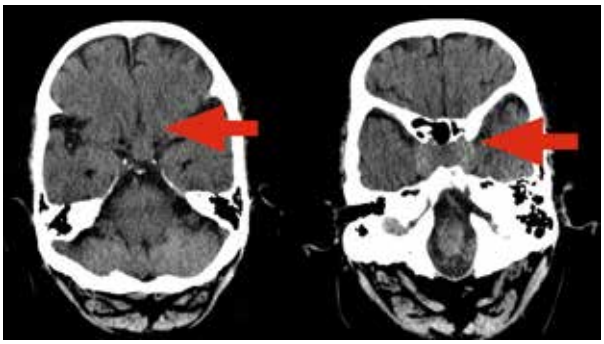
Date / Time	Function	Enquiry / Remarks
29 *TUE* 7:00 PM	**Certificate Course on Palliative Medicine for Health Care Workers 2023 (Video Lectures)** Organiser: The Federation of Medical Societies of Hong Kong Speaker: Dr Johnny Kin-sang LAU	Ms Vienna LAM Tel: 2527 8898
31 *THU* 7:00 PM	**Certificate Course on Cytogenomics 2023 (Video Lectures)** Organiser: The Federation of Medical Societies of Hong Kong Speaker: DrAnita Sik-yau KAN	Ms Vienna LAM Tel: 2527 8898

Upcoming Event

(Sun) 08:50 – 17:00 **3 Sept 2023**	**LI SHU PUI SYMPOSIUM 2023 – Contemporary Tumour Management** Organiser: HKSH Medical Group RCSEd Presidential Lecture Speaker: Prof Michael GRIFFIN Li Shu Pui Lecture Speaker: Dr Percy LEE Speakers: Dr Garrett HO, Dr Darren POON, Dr KWAN Wing-hong, Dr Edmond MA, Dr YAU Chun-chung, Dr Rico LIU, Dr Daniel CHUA, Dr Stephen LAW, Dr Amy CHANG, Prof Ava KWONG, Dr Hextan NGAN, Dr YU Chung-ping, Dr WONG Wai-sang, Dr Godfrey CHAN, Dr Peter LEE, Dr Judy CHENG, Dr Adrian SETO	Enquiry: Hong Kong Sanatorium & Hospital Venue: Ballroom, JW Marriott Hotel Hong Kong & via Webinar Website: www.hksh.com/lsp2023
15-17 Sept 2023	**23rd Regional Osteporosis Conference (ROC 2023)** Organiser: The Osteoporosis Society of Hong Kong Speaker: Please refer to www.oshk.org.HK Venue: Hong Kong Convention and Exhibition Centre	ROC 2023 Conference Secretariat Tel: 2559 9973 Fax: 2547 9528

Answers to Radiology Quiz

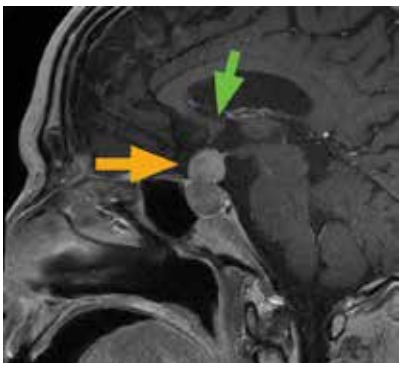
Answers:



1. Pituitary fossa mass with suprasellar extension in snowman configuration. Expansion of the sella and erosion. (Red arrows)

2. Pituitary macroadenoma; Craniopharyngioma; Rathke cleft cyst.

3. Contrast MRI pituitary gland



MRI showed an expansile, bilobed sellar and suprasellar mass with snowman configuration. (Orange arrow)

It is hypoenhancing relative to the pituitary gland, which appears displaced superiorly along with the infundibulum. The mass also superiorly displaces and compresses the optic chiasm. (Green arrow)

Overall findings are compatible with macroadenoma. Craniopharyngioma commonly shows calcification, and Rathke cleft cyst should show cystic component and non-enhancement.

Dr Ivan CHEUNG
MBBS, FRCR

Notice of Correction

Dr Ka-kin LEE's qualification and affiliation of HKMD Vol. 28 NO. 7 July 2023 should read as follow:

" MBChB (CUHK), FHKCPsych, FHKAM (Psychiatry)
Specialist in Psychiatry
Associate Consultant, Department of Psychiatry,
North District Hospital "

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^ 2'FL and LNnT (types of HMO, not sourced from breastmilk) 150 mg per 100 mL of prepared formula in NESTLÉ® NAN® PRO 1 and 39 mg per 100 mL in NESTLÉ® NAN® PRO 2-4.

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Information for healthcare professionals only

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