baby talk

THE NEWSLETTER FOR MOTHERS

2010 Issue 01 MICA(P)133/09/2010

cordlife
one chance one choice

Dr. Cherie Daly explains about
CORD BLOOD STEM CELLS

Dr. Yam Pei Yuan John gives insights on
PREPARING FOR YOUR PREGNANCY

What all parents should know about protecting their most precious ones!

Dr. Loke Kah Leong talks about the importance of
Antenatal Screening Tests
for Chromosomal Abnormalities

Dr. Lee Keen Whye explains about
Uterine Fibroids, Ovarian Cysts
and their Differences

Nowadays

Pregnant moms are asked a question barely heard a decade ago; Do you want to save your baby's cord blood?

If you begin to research on cord blood banking, the first decision you should make is what are you planning to do with your baby's precious cord blood.

One major benefit is, you can definitely capitalise on its potential medical uses later, for your child and maybe for your family as well.

It might just turn out to be an investment worth looking into as it safeguards the family's health and well-being, ultimately instilling hope for a bright future ahead.

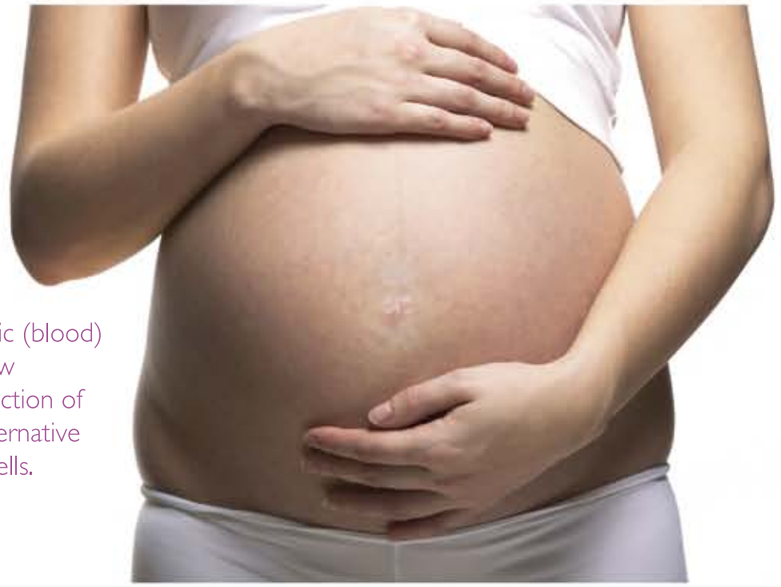
Find out more about the benefits on banking your newborn's precious cord blood at **www.cordlife.com/sg** or call **6238 0808** today.

It's time to plan long-term.

Contents:

What's precious about my baby's Cord Blood?

Thousands of parents around the world are privately storing their baby's cord blood, as it contains something very precious, these are stem cells. Stem cells are the body's basic building blocks, which can regenerate and turn into the cells that form all of the tissues, organs and systems in the human body.



The first use of stem cells in medicine was to generate healthy blood and immune cells in cancer patients in what we know as a bone marrow transplant. It was discovered in the late eighties that cord blood contains the same hematopoietic (blood) stem cells used for bone marrow transplants and thus the introduction of cord blood stems cells as an alternative source to bone marrow stem cells.

The first umbilical cord stem cell transplantation was performed in 1988, since then over 20,000 cord blood transplants have been preformed[1] and today cord blood stem cells is the most commonly used source of stem cells (over bone marrow and peripheral blood)[2] in the pediatric setting.

The list of diseases that are treatable with stem cells also continues to grow and today, over 80 diseases are treatable using stem cells[3].

Why cord blood stem cells?

As we age, so do our stem cells, thus umbilical cord stem cells are the "youngest" and most "primitive" stem cells that we can obtain that do not involve obtaining from a source with both ethical and moral implications.

Besides the current indications for stem cell transplants, there has been a huge amount of research involving stem cells for other applications, like heart disease, stroke, spinal cord injury, cerebral palsy, orthopedic applications and others. This research has now led to numerous clinical trials involving various stem cells in the treatment of these diseases in what we term "cellular therapy".

Cellular Therapy is a rapidly evolving field that holds great promise for the treatment of numerous diseases and also certain diseases where there is currently no medical cure.

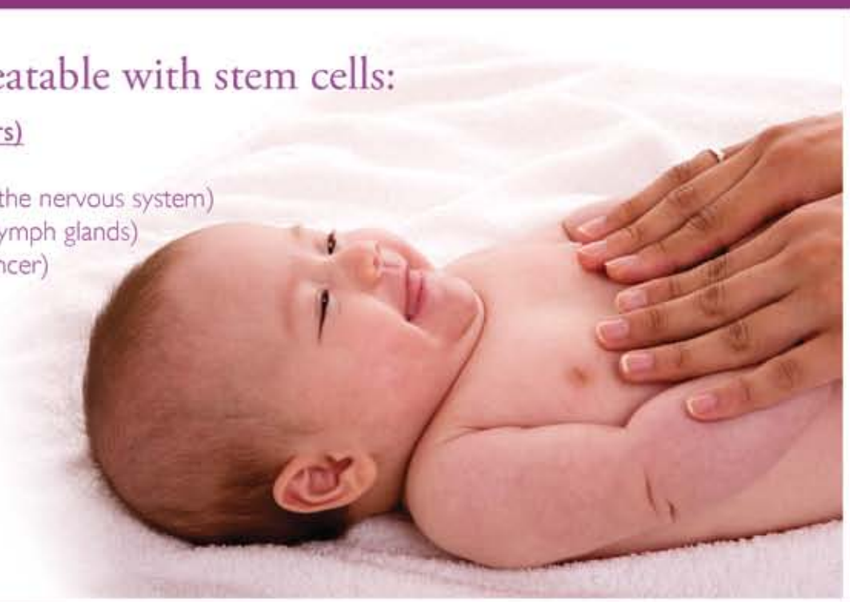
The US government has now passed legislation in over 20 states that all expecting parents should be educated on the options available with regards to the cord blood in their baby's umbilical cord and the reasons why they might consider to either store privately or donate these stem cells, rather than just throwing away these precious cells.

Today, over 80 diseases including certain cancers and blood disorders[4] can be treated using stem cells, and the list looks like it will continue to grow.

Some diseases treatable with stem cells:

<u>Malignant Diseases (Cancers)</u>
Leukaemia
Neuroblastoma (Cancer of the nervous system)
Lymphoma (Cancer of the lymph glands)
Wilms' Tumour (Kidney Cancer)
Breast Cancer

<u>Non-Malignant Diseases</u>
Fanconi's Anaemia
Aplastic Anaemia
Thalassaemia (Major)
Krabbe Disease



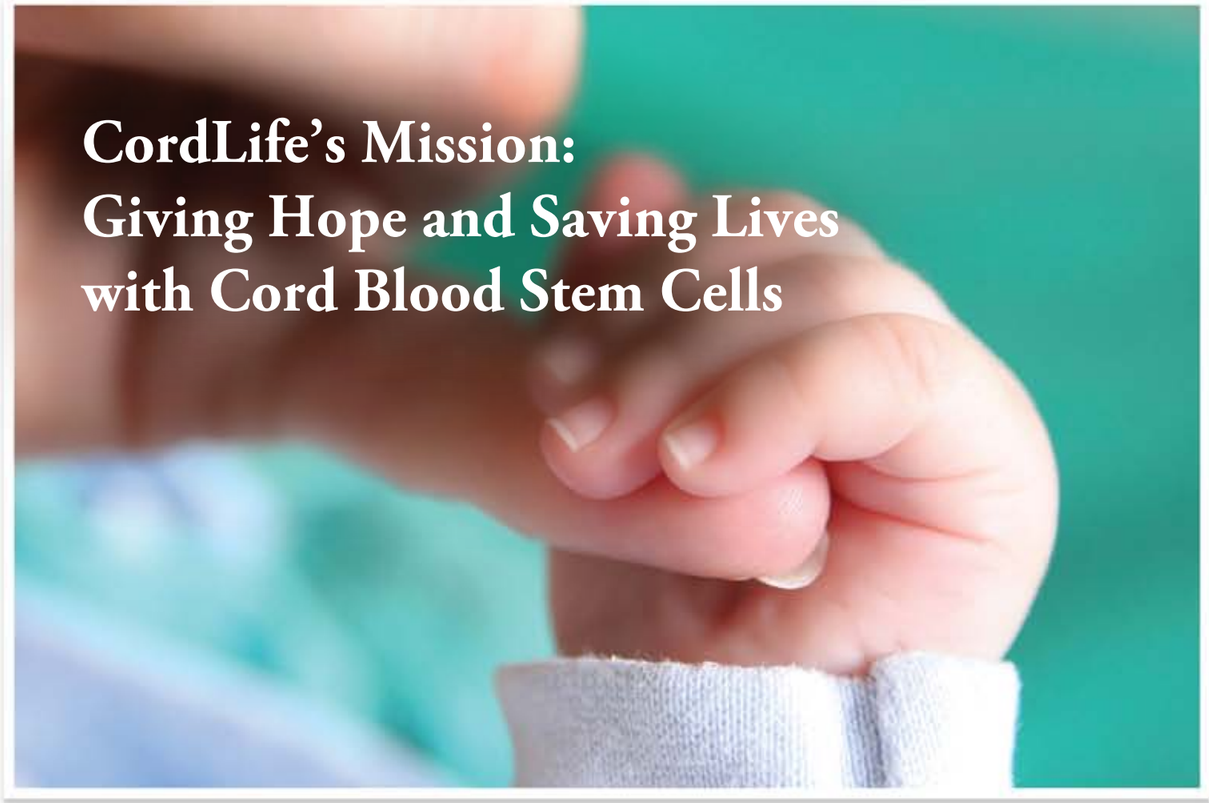
Reference:
1. 'Cord Blood Forum' website. (http://www.cordbloodforum.org/biblio/childtx/malignant.html).
2. 'National Marrow Donor Program' website. (www.marrow.org).
3.4 'Parent's Guide to Cord Blood Banking' and 'Cord Blood Registry' website. (www.parentsguidecordblood.org), (www.cordblood.com).

Dr. Cherie Daly

Group Medical Affairs Manager
CordLife

Dr. Cherie Daly is a qualified medical practitioner who has clinical experience in numerous fields. She has over 6 years of international experience in the stem cell industry. Dr. Daly served as the Executive Manager for Cryo-Save Arabia, where she was responsible for establishing and managing their new cord blood laboratory in Dubai. During her time in the Gulf Region, Dr. Daly lobbied at the governmental level and with key regional institutes to educate and introduce cord blood banking to expectant parents in a region where there was no such service.

Since 2009, Dr. Daly is the Group Medical Affairs Manager for CordLife in Singapore.



CordLife's Mission: Giving Hope and Saving Lives with Cord Blood Stem Cells

CordLife at a glance

cordlife operates Asia Pacific's largest network of private cord blood banks with full processing and cryopreservation storage facilities in Singapore, Hong Kong, Indonesia, India, Philippines, and an association with the two largest public/private cord blood banks in China, as well as marketing presence throughout the region. CordLife is listed on the Australian Securities Exchange since 2004.

In a short span of almost 10 years, we have grown to become the leading cord blood bank which thousands of parents have chosen to trust.

CordLife collects, processes and stores cord blood stem cells which may later become a potential source for life-saving treatments. We provide families with high quality and standard in processing and storage services to protect their children's precious cord blood stem cells.

Since our inception in 2001, we have established a rigorous quality system and track record of clinically reliable cord blood banking service that was certified by Singapore's Ministry of Health. Most importantly, we have also achieved an accreditation by the world's most recognised gold standards in cord blood banking – American Association of Blood Banks (AABB), and have successfully achieved the accreditation the third time consecutively.

In 2007, CordLife was awarded the prestigious 'Technology Pioneer' status by the World Economic Forum for advancing the field of adult stem cell therapy, cord blood banking and technologies.

We were one of the only 3 companies in Asia to be awarded this rare recognition.

PREPARING FOR YOUR PREGNANCY

Before embarking on pregnancy, you & your partner have to be mentally & physically prepared. There will be an additional member to your family & you will have to be ready for this.

Things to do

Pregnancy can be demanding, placing a strain on your body. It is important that you prepare in advance so that you will have a satisfying experience & outcome. Ideally, preparations should begin even before you conceive. Folic acid supplements should be started about one month before conception to minimize the risk of brain, spine & nervous system defects in the fetus. If you are taking any medication, always consult your doctor as some drugs can affect your baby.

Be sure to avoid radiation (in the form of X-rays) too. Bear in mind that conception occurs around two to three weeks from your last menstrual period, so that is the time that baby starts developing.

Eat sensibly & have a well-balanced diet. Try to maintain a reasonable weight, keeping your body mass index in the healthy range. Women who are underweight or overweight at the start of pregnancy tend to develop specific problems during pregnancy & childbirth. Exercise moderately & avoid high impact sports.

When you are about to embark on pregnancy, it is a good idea to see your doctor to get a medical screen. Your doctor may screen you for various medical conditions, like high blood pressure & thalassaemia, an inherited blood condition that can affect the fetus. Certain tests can also be done, including: blood tests to check your immunity to some conditions (like toxoplasmosis, hepatitis & rubella), tests for syphilis, & a PAP smear.

In the event that you need vaccination, you will probably have to wait for a period of time before conceiving. For example, if you need to be immunized against rubella, doctors advise that you refrain from getting pregnant for about 3 months after the vaccination.

On occasion, women who go for pre-pregnancy checks discover that they have certain underlying medical conditions which were previously unnoticed as they did not cause any symptoms, like high blood pressure or diabetes. It is important that they get the appropriate treatment for these conditions before starting pregnancy as pregnancy may be affected if these conditions are not well-controlled.

Things not to do

Cigarette smoking causes problems such as miscarriage, placental bleeding, premature labour & decreased fetal weight. Babies born to mothers who smoke also suffer from delayed development. If you are a smoker, it is important that you cut down on the number of cigarettes you smoke, or, better still, stop completely. Equally dangerous is second hand smoke - if your partner smokes, avoid inhaling the smoke.

Alcohol, too, causes problems in pregnancy, including fetal abnormalities. You should avoid hard liquor during pregnancy & minimize your intake of soft liquor. Of course, it is best that you avoid alcohol altogether.

Dr. Yam Pei Yuan John

Obstetrics and Gynaecology
Acufem Women's Specialist Services
Gleneagles Hospital
MBBS (S'pore), MRCOG (UK), MMED (Obstet & Gynaecol) (S'pore), FAMS (S'pore), FICS (USA)

After graduating from the National University of Singapore, Dr John Yam received his postgraduate training at the National University Hospital & KK Women's & Children's Hospital.

He is a member of the Royal College of Obstetricians & Gynaecologists (LONDON), a Fellow of the Academy of Medicine (Singapore) and a Fellow of the International College of Surgeons.

Besides lecturing medical undergraduates at the National University of Singapore, Dr Yam has published numerous articles in scientific journals and has contributed to many books on Obstetrics and Gynaecology.

His many research interests include: pregnancy care (particularly monitoring of the mother & her foetus during labour & delivery) and gynaecological surgery (keyhole & conventional methods for benign and malignant gynaecological conditions).

Dr Yam is currently based at Gleneagles Hospital. He is visiting consultant to the following hospitals: Mount Alvernia Hospital, Thomson Medical Centre, Mount Elizabeth Hospital and Parkway East Hospital.

Antenatal Screening Tests for Chromosomal Abnormalities

There are a few screening tests for chromosomal abnormalities available which are offered to all pregnant women in the late first trimester or early second trimester. These include the nuchal translucency (NT) scan, the NT combined with maternal blood test commonly known as the OSCAR test or maternal serum screening alone (eg. Triple test).

Screening tests are all non-invasive and there is no risk of causing a miscarriage to the pregnancy. As the risk of chromosomal abnormalities rises with maternal age, screening tests assume an even greater importance nowadays as more women are having babies at a later age.

Nuchal Translucency

The NT test involves a detailed ultrasound scan of the baby at 11-14 weeks of the gestation and the fluid collection behind the baby's neck is measured. A thickened NT beyond normal thickness is associated with chromosomal abnormalities, Down's syndrome being the most common, although Edwards's syndrome Patau's syndromes are also screened. The normal thickness is usually less than 2.5mm.

A risk estimate can be obtained by the result of the fetal NT value, maternal age and the crown-rump length of the fetus. The accuracy of the NT test alone is about 80%.

OSCAR

The OSCAR test involves the NT test plus a sample of the mother's blood which is analysed for levels of free beta hCG and PAPP-A (Pregnancy associated plasma protein A). The combined data will give a risk estimate of Down's syndrome with an accuracy of 90% which is superior to that of NT alone (80%).

Maternal Serum Screening

The maternal serum screening test is done between 15-20 weeks of gestation and this measure certain hormones in the blood to determine risk. The triple test measures three hormones called alpha-fetoprotein, human chorionic gonadotrophin and oestriol and a risk value is calculated according to maternal age and the gestational age of the fetus at that time.

As its accuracy is only 65%, this test is less commonly done nowadays. Furthermore, it has to be done later from 15 weeks onwards compared to NT and OSCAR which can be done from 11 weeks onwards.

Interpretation of the Results

The result of the screening test will give you a numerical risk value which tells you if your fetus belongs to a low risk or a high risk group. Screening tests are NOT diagnostic tests and cannot tell you if your baby has Down's syndrome.

A result of 1 in 300 means that one of 300 women will have an affected baby. Similarly if also means that 299 out of 300 women with this result will NOT have an affected baby.

From a medical standpoint, the cut-off point between high and low risk is taken at 1:300. Therefore, 1:50 would be considered high risk and 1:1000 would be low risk. It is important to understand clearly that the results of screening tests represent risks.

A low risk does not absolutely exclude the possibility of Down's syndrome or other abnormalities altogether. Conversely, a high risk result does not mean the fetus is affected and further diagnostic invasive tests (Eg. Chorionic villus sampling or amniocentrsis) must be done.

Invasive tests obtain cell samples from the fetus and the results will be able to confirm if the baby is affected with Down's syndrome. The risk of miscarriage related to the procedure is 0.5%. A normal result would certainly give the parents peace of mind while an abnormal result will allow the parents the option of whether to continue with the pregnancy or have termination.

Dr. Loke Kah Leong

Obstetrician and Gynaecologist
Singapore Women's Clinic (Tampines)
MBBS (Singapore), M Med (O&G) (Singapore), MRCOG (UK), FAMS (Singapore), FICS (USA), FRCOG (UK)

Dr Loke graduated from medical college in the National University of Singapore in 1981. He received his specialist Obstetrician & Gynaecology training in the University Unit and A Unit of Kandang Kerbau Hospital and the National University Hospital, and post graduate overseas training in London and Glasgow, UK.

He has been Obstetrician and Gynaecologist at Singapore Women's Clinic (Tampines) since 1991 and he also practices at East Shore Hospital, Thomson Medical Centre and Mount Alvernia Hospital.

Uterine Fibroids and Ovarian Cysts

Gynaecology is the study of female diseases as opposed to obstetrics which is the study of pregnancy and its related disorders.

The three most common gynaecological problems which may need surgery are uterine fibroids, ovarian cysts and heavy menstrual bleeding. The commonest confusion when a female is diagnosed with a pelvic growth or tumour is to tell a fibroid (myoma) from an ovarian cyst and vice versa.

What are the differences between fibroid and ovarian cyst?

Fibroid and ovarian cyst are the two most common female pelvic growths or tumours which cause confusion and identity crisis amongst patients. Even the term tumour which just means a growth, can be benign (non-cancerous) or malignant (cancerous). In general, fibroid is a growth from the uterus and ovarian cyst arises from the ovary.

Fibroid

Fibroid or myoma (Latin) is commonly called 'meat' or 'muscle' tumour colloquially. This is because the growth or tumour arises from the smooth muscles of the uterus (womb). The Indonesians called it 'myom'.

Fibroids are common non-cancerous growths found in about 10% to 20% of women in the reproductive age group. The exact cause is unknown but is believed to be due to a localized hormonal imbalance of the womb (uterus). Female hormones and drugs or herbs containing traces of oestrogen can stimulate the growth of fibroids. Fortunately, the risk of fibroids turning cancerous is less than 0.5%.

How to detect if there is a presence of fibroid (myoma)?

Most fibroids are asymptomatic and are often discovered during routine health screening. Often ladies regard a bulge at the belly as 'fat' collection associated with overeating, lack of exercise or simply middle age paunch. The bulge can turn out to be a silently growing fibroid.

When fibroids multiply in numbers or enlarge, they can cause pressure symptoms on surrounding organs like the bladder, rectum, backbone and pelvis. Patient may complain of urinary symptoms, rectal symptoms, backache and bloatedness. In severe cases, it may cause obstruction to the urinary flow leading to kidney damage.

Fibroids are known to cause heavy menstrual bleeding and in some instances, infertility, miscarriage and preterm labour.

Treatment of fibroid

Small fibroids can be observed and in menopause, they do shrink in size. However, big fibroids that do not shrink after menopause need to be monitored carefully for fear of them turning cancerous.

The symptomatic fibroid need medical attention. Drugs associated with male hormone and menopause hormone may provide temporary relief but can cause side effects like musculinizing changes (male voice, hairy, acne etc) or menopause changes (dry skin, hot flushes, osteoporosis etc).

There are newer techniques like uterine artery embolisation or ultrasound ablation but these are for selective cases in specialized centers. Most symptomatic fibroids are removed surgically via laparoscopic minimally invasive surgery (keyhole) or laparotomy (open surgery). The choice of laparoscopic or laparotomy depends on the surgeon's skill, equipment level, size, number and location of the fibroids.

Whether it would be a myomectomy (removal of fibroid) or hysterectomy (removal of womb) will depend on the age, fertility status, and other associated medical factors. The best option is often arrived after consultation with the gynaecologist.

Ovarian Cyst

Ovarian cyst is fluid filled tumour that arises from one or both ovaries. The cyst wall or capsule is soft and may appear round, oval or irregular in shape.

The cyst content is mostly fluid, filled with water (clear cyst), filled with blood (haemorrhagic or chocolate cyst) or mixed with other human tissues like hair, fat, tooth, cartilage, bone etc (dermoid cyst).

There are many types of ovarian cyst but I will simplify them into four main types for easy understanding.

1. Functional cyst

This is by far the commonest cyst mentioned daily in ultrasound reports causing the most unwarranted anxiety to the patient. These functional 'cysts 'are mostly physiological in nature and best known as ovarian follicles (preovulation) and corpus luteum (post ovulation). These are natural occurrences in normal menstruating females. Benign cysts can also be found in females on fertility drug treatment, having hormonal imbalance or on progestogenic intra uterine devices like Mirena. Almost all functional cysts disappear with the time and rarely require surgery.

2. Endometriotic cyst

Endometriotic cyst is commonly known as 'chocolate cyst' and colloquially called 'blood' cyst. The 'chocolate' or 'blood' is actually menstrual blood produced by endometrium (menstrual lining) of the uterus that has escaped into the pelvis eroding or invading into pelvic organs giving rise to a condition called endometriosis. The invading menstrual lining engulfs itself to form a capsule and hence an endometriotic cyst is formed with a collection of menstrual blood and secretion within. When endometriotic cyst ruptures, spillage of 'chocolate' or altered 'blood' is poured onto surfaces of the pelvis, rectum, uterus, ovary, intestine and bladder giving rise to discomfort and pain. The resulting aftermath is akin to larva from a volcano giving rise to inflammation, scarring and destruction of normal pelvic anatomy. Hence dysmenorrhoea, pelvic pain and infertility are often encountered. Fortunately, endometriotic cysts are mostly benign but their appearance can be threatening and suspicious looking.

3. Benign (non-cancerous) ovarian cyst

The three most common types are serous cystadenoma (30% cancer risk), mucinous cystadenoma (5 to 10% cancer risk) and dermoid cyst (teratoma) which can contain human structures like hair, tooth, fat, cartilage, bone etc. The cause of these cysts is unknown.

4. Ovarian Cancer

Ovarian cancer can be considered the most deadly of all female cancers because it is often discovered late. It occurs in roughly 5% of all ovarian cysts. In its early stage, it is asymptomatic and hard to detect. In its later stage, it causes abdominal bloatedness, pain, loss of appetite and weight and spread to other parts of the body.

What are the common symptoms of ovarian cyst?

Ovarian cyst is generally asymptomatic when it is small. When it enlarges it can cause abdominal swelling, discomfort and pain. Severe pain can result when the cyst ruptures or twists (torsion). It may also put pressure on bladder causing urinary symptoms or on the rectum causing bowel symptoms.

Do I need an operation?

The need to operate depends on the severity, size of cysts, number of cysts, complexity of cysts and prevention of complications like rupture, torsion, enlargement and suspicion of cancer.

The commonly done operations for ovarian cysts are ovarian cystectomy, oophorectomy and total hysterectomy with bilateral oophorectomy.

Operations for ovarian cyst

Ovarian cystectomy - removal of cyst wall and contents with conservation of the remaining ovary for hormonal function. Most younger women would prefer this.

Oophorectomy - removal of whole ovary and cyst. This is done if most or all of the ovary is destroyed by the cyst.

Total Hysterectomy with bilateral oophorectomy - removal of both ovaries and uterus for fear of cancer developing or for ovarian cancer.

The approach to the operation whether via laparascopy or laparotomy and the surgical procedures are best discussed with the attending gynaecologist.

Gynaecological check up

It is advised that all sexually active females should see a doctor as early as possible for PAP smear, cervical cancer vaccination advice, breast examination, pelvic examination (with or without ultrasound) and contraceptive or fertility advice. Routine examinations like annual checkup and pre-employment screening have picked up a fair number of asymptomatic growths.

Any female regardless of age or sexual activity should consult a doctor if she has gynaecological related complaints like heavy menses, abnormal vaginal bleeding, painful menses, pelvic discomfort, bloatedness or palpable pelvic lump.

A combined vaginal and abdominal examination is often able to detect a pelvic tumour and often a fibroid feels harder than a cyst to the doctor. With the help of ultrasound scan the differentiation of cyst from fibroid is made easier. Occasionally, a MRI scan is requested to gauge the likelihood of encountering cancer for the pre operative counseling of the patient. But the definitive diagnosis still rests with the histology of the resected tumour.

A benign fibroid or cyst can lead to pain, distortion of pelvic anatomy, menstrual problems, pelvic organs side effects and infertility. A cancerous growth can bring about morbidity, poor quality of life and death.

Hence, early detection of pelvic tumour be it ovarian cyst or fibroid, can prevent further harm to the health of the individual and keeping health care cost low.

Dr. Lee Keen Whye

Consultant Obstetrician and Gynaecologist
Gleneagles Medical Centre
Past President, Obstetrical & Gynaecological Society of Singapore (2003 - 2005)
Visiting Consultant, O&G Department, Singapore General Hospital
MBBS (Singapore), FRCOG (UK), FAMS

After graduating from the University of Singapore, Dr Lee Keen Whye's current and past appointments include:

- Medical Director, Gleneagles Hospital Minimally Invasive Surgery Centre
- Advisor to Endometriosis Association (Singapore), an affiliate of International Endometriosis Association (USA)
- Chairman, Kandang Kerbau Women and Children Hospital Alumni

PROFESSIONAL MEMBERSHIP

- Founding Member, Asia-Pacific Association Of Gynaecological Endoscopist, APAGE
- Member, Singapore College Of O&G

In addition, Dr Lee has special interest in hysteroscopy and laparoscopy. He has done many international lectures and preceptored many endoscopic workshops in Indonesia, Taiwan, Korea, India and Myanmar.

He is also a founder member of the Asia-Pacific Association of Gynaecological Endoscopists (APAGE). In 2003, Dr Lee was awarded the prestigious Benjamin Henry Sheares Gold Medal by the Obstetrical and Gynaecological Society of Singapore.

To learn more about pregnancy, raising a healthy baby and cord blood banking, register for CordLife's BabyTalk at **www.cordlife.com/babytalk**

- Read about a modern mother who has attended one of CordLife's BabyTalk and signed up for cord blood banking - www.cordney-corner.blogspot.com

- If you have any enquiries on Cord Blood Banking please call **6238 0808**.

- If you have any pregnancy or female related queries, you can email us at: **editor@cordlife.com**

Articles contributed by: DR. CHERIE DALY, DR. LEE KEEN WHYE, DR. LOKE KAH LEONG and DR. YAM PEI YUAN JOHN.