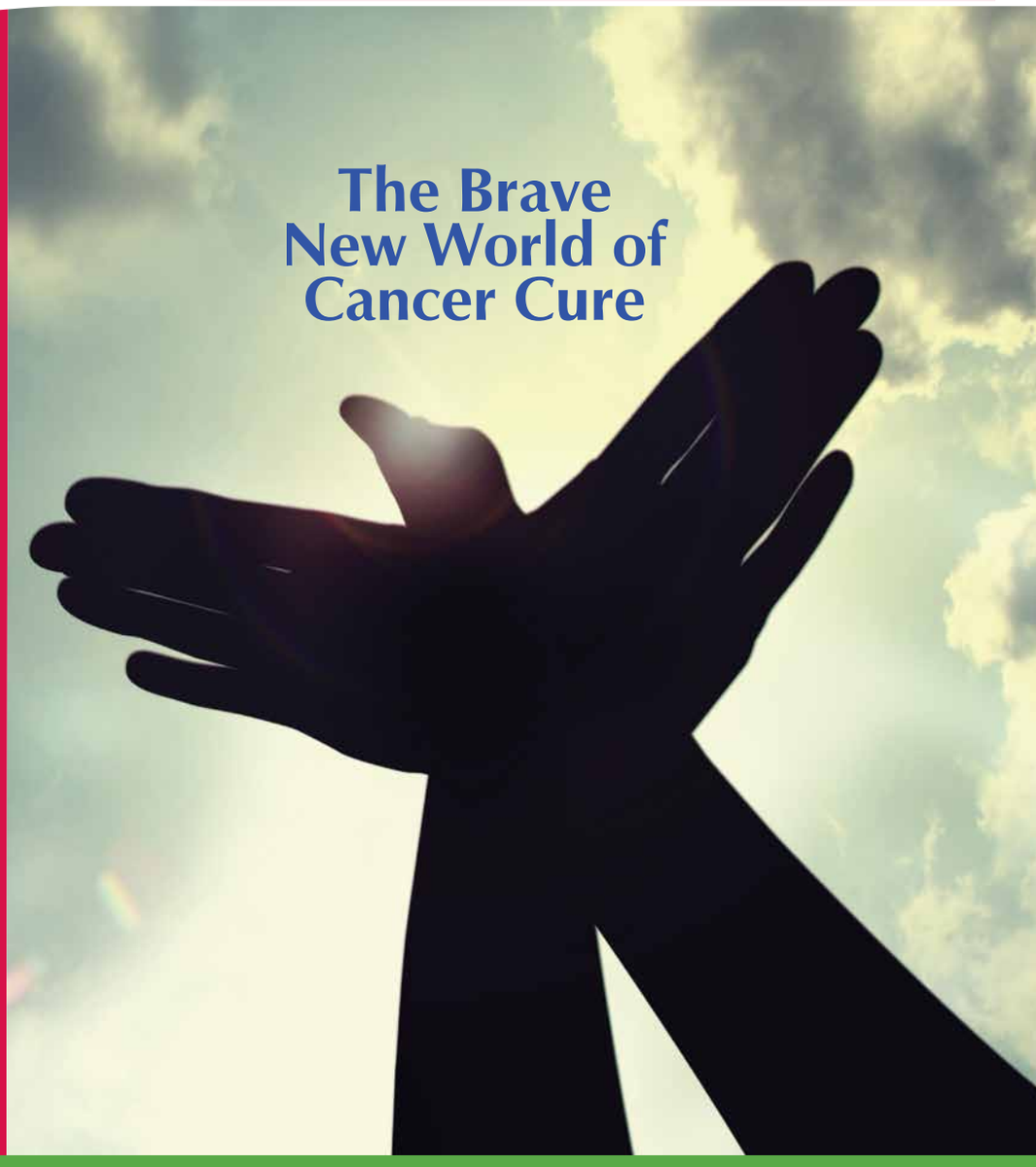
MIOT International

MARUTHUVA VIVEKAM

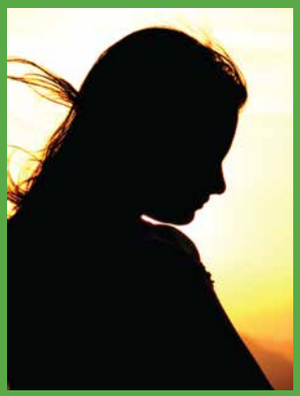


The Brave New World of Cancer Cure

PLUS

The 'True' Hero of Radiotherapy

Catching it Early Cancer Screening



Breast Cancer - Curse to Cure

Its Finally Mission Possible

New medications
New approaches
New modalities
New technologies...

July 2012 Vol:15

From the Chairman's Desk

Dear Friends,

Greetings! This edition of the Maruthuva Vivekam deals with Cancer. The very word strikes fear in the heart of those who are diagnosed with it. However a new era in cancer management is dawning. New technologies, new drugs, new protocols bring new hope. This issue brings you abreast with these developments. Above all, we must remember that the most powerful therapy is to be positive!

Stay healthy,

Mrs. Mallika Mohandas
Chairman, MIOT Hospitals

Laughter is the Best Medicine

"You caught a virus from your computer and we had to erase your brain. I hope you've got a back-up copy!"

"In your lifetime, Mr. Johnson, approximately how much secondhand smoke have you been exposed to?"

Why MIOT Institute of Cancer Cure?

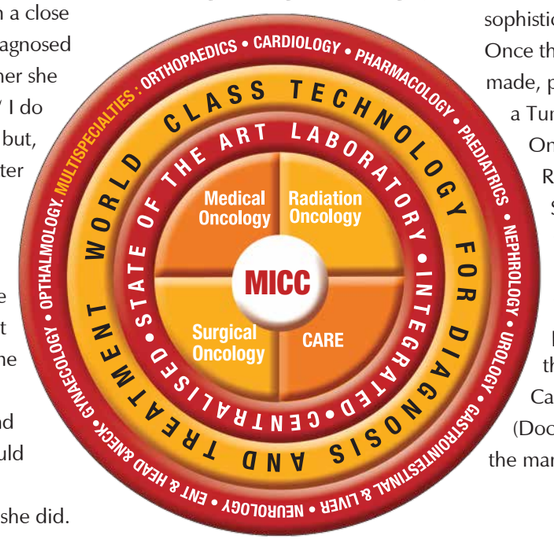
Prof. Dr. P.V.A. Mohandas on the inspiration behind MIOT's new mission

When a person is diagnosed with cancer a cloud of gloom engulfs the whole family. The patient feels that the end has come and that there is no chance of survival. At this stage, the patient requires enormous emotional support from relatives, friends, Doctors and social workers.

A few years ago I called on a close friend of mine who was diagnosed with cancer. When I met her she was in tears. She told me " I do not mind dying of cancer; but, I would like to die in a better environment".
She looked around at the place she was in. "If there is a hell then, this is it", she said, "At night I cannot rest because patients around me are crying with pain. The place is too warm, dirty and foul smelling. Please, I would rather go home and die."
Subsequently, this is what she did.

Running from pillar to post

The treatment of cancer is fragmented. There is no one place where a patient can get holistic treatment in a hospital. They often have to go from pillar to post consulting the Surgical Oncologist, Medical Oncologist, Chemotherapist, Radiotherapist etc., and often even the diagnosis of cancer is missed or made late.



New approach

This is what inspired me to organize a Centre - 'The MIOT Institute of Cancer Cure' for early diagnosis with sophisticated laboratory services. Once the diagnosis of cancer is made, patients go to a Tumor Board where the Surgical Oncologist, Chemotherapist, Radiotherapist, the concerned Specialist and Social Workers will sit together and decide on the management and treatment required by the patient. You will be surprised that the MIOT Institute of Cancer Cure has 35 Specialists (Doctors) who will contribute in the management of cancer.

The MIOT Cancer Care Team

Lead Article

MIOT INSTITUTE OF CANCER CURE

Cancer Cure: Mission Possible

A new era in cancer treatment has dawned.
MIOT Institute of Cancer Cure leads the way

The battle is the same but the weapons have changed. New medications, new approaches, new specialities, new technologies. Now, more than ever before we have a better chance of beating cancer. MIOT Institute of Cancer Cure (MICC) leads the way.

Taking diagnosis to the next level

The 'cure' actually starts from the lab. MIOT's state of the art histopathology lab not only identifies and stages the cancer accurately but also uses genetic probes to predict which drugs will work most effectively against it.

Comprehensive battle plan

There are three primary treatment approaches to cancer - Medical oncology (chemotherapy), Onco-surgery and Radiotherapy. A patient maybe advised to undergo either one or more of these treatments in conjunction. The most effective approach is when specialists from these treatment modes work together. These doctors form a 'Tumour Board' to plan the most effective treatment and include relevant doctors from MIOT's other specialties like Orthopaedics, Liver & Gastronterology, Neurology etc. Infact, MIOT has 35 specialists available to consult on oncology.

All under one roof

MICC brings everything under one roof - detection, diagnosis, staging, treatment and therapy. These are executed by a full time team of world class Surgeons, Radiotherapists, technologists, physicists, haemotalogists, pathologists, onco nurses and other support services.

This makes diagnosis and treatment definite and faster, giving the patient the best possible chance.

Lead Article

latest drugs. Some of these effectively target and completely cure certain cancers. Our approach to surgery is minimally invasive and less radical. The aim is to preserve the organ, so that patients retain quality of life.

Introducing TrueBeam

MICC offers the world's most advanced option - TrueBeam. Truly path-breaking, TrueBeam can target moving tumours precisely and deliver more accurate dosage *four times faster*. Its beams can be specially shaped to align with the tumour sparing the surrounding tissue from radiation. Treatment is shorter, safer, more comfortable and more effective than ever before. MIOT is the first hospital in Asia Pacific and only the third hospital in the world to commission this revolutionary machine.

Choosing Quality of Life

Medical oncology is also carefully planned. It includes the use of premedication for side effects, comfortable chemo delivery devices, specially trained chemo nurses and the

Culture of Caring

The new spacious and world class MIOT International building provides a supportive and soothing ambience to care-worn cancer patients. MIOT's mission is to provide the world's best team and weapons to fight shoulder to shoulder with patients against Cancer. So that the 'Big C' stands not just for Cancer but for Care, Comfort and Cure.

Article

Catching It Early

The best 'cure' for cancer is before you know you have it…
Why cancer screening is a must

Screening means looking for early signs of a particular disease in 'healthy' people who do not have any symptoms. Cancer screening aims to find cancers as early as possible - when the chance of cure is highest. It is basically the only method that can be used to detect cancer before we even suspect it.

There are many types of cancers, unfortunately not all of them have screening tests. The cancers that can be detected through screening are: Breast cancer, Cervical cancer, Colorectal cancer, Prostate cancer, Oral cavity cancer

Breast Cancer:

Doctors recommend that women over the age of 20 years, regularly self-examine their breasts every month on the same day. Women over the age of 40 should undergo Clinical Breast Examination by an experienced physician, annually. Additionally, women who have a genetic history of breast cancer in their family should undergo a mammogram every year from the age of 30. Breast MRI is the latest recommendation for 'high risk' women who have a history of breast/ ovarian cancer among close family.

Cervical screening:

Cervical cancer is the cancer of the cells in the lining of the cervix which is the opening of the womb (uterus). 95% of cervical cancers develop due to HPV infection. Fortunately they can be detected through a simple, low cost and reliable test called **Pap Smear**. Here cells are collected from surface of cervix and are examined for abnormal cells. The test can detect abnormal cells even 10 yrs before they develop into cancer. The pap smear should be done for all sexually active women - once in 2 yrs for women aged 21-39 and once in 3 yrs thereafter.

Colorectal cancer:

It's a good idea to undergo screening for colorectal cancer because it is relatively common and if detected at an early stage, cure rates are almost 90% with surgery alone. The recommended tests include:

Faecal occult blood test: this is a non invasive test that detects hidden blood in stools and should be done every year from the age of 50 yrs

Colonoscopy - recommended once every 10 yrs, starting at 50 yrs of age.

Sigmoidoscopy - once in every 5 yrs, starting at 50 yrs of age.

Prostate Cancer:

Prostate cancer can be detected through a Digital Rectal Exam (DRE) or through a blood test that measures the level of **PSA** - a substance made by the prostate, whose level will be increasingly high in cases of cancer. It's recommended that men undergo these tests once a year from 50 yrs of age.

Oral cancers:

A simple, physical examination of oral cavity and neck can detect oral cancers at the early stage. Premalignant symptoms in the mouth appear in the form of Leukoplakia (white patches) & Erythroplakia (reddish patches)

Besides these screening is also advised to detect Gastric cancers. Gastric cancer can be detected through an Upper GI Endoscopy and liver cancers through Hepatitis B & C testing, ultrasound and lab testing for tumor markers like alphafetoprotein.

Signs and symptoms:

Watch out for these 7 warning signs of cancers :

- Change in bowel and bladder habits
- A sore throat that does not heal
- Unusual bleeding or discharge
- Thickening or lump in the breast, testicles or elsewhere
- Indigestion or difficulty in swallowing
- Visible change in the size, colour, shape or thickness of wart, mole or mouth sore
- Nagging cough or hoarseness

Symptoms which may signal the presence of certain cancers

- Persistent Headaches
- Unexplained loss of weight / appetite
- Chronic pain in bones or any other parts of body
- Persistent fatigue, nausea or vomiting
- Persistent low grade fever
- Repeated infections.

Prevention is better than cure - 7 tips

- Quit tobacco - chewing / smoking
- Eat healthy - Eat plenty of fruits & vegetables
  Limit fat
  Avoid alcohol
- Maintain a healthy weight - Include physical exercise in daily routine
- Protect yourself from sun
- Get immunized - Hepatitis B / HPV Vaccines
- Avoid risky behaviour - Practice safe sex; Don't share needles
- Take screening seriously

Article

Upgrading the Chemo Cocktail

Revolutionary new drugs in Chemotherapy effectively target and cure certain deadly cancers…

Until the year 2000, a diagnosis of Chronic Myeloid Leukemia meant certain death. A patient diagnosed with this disease would live only for an average of 5 years. Today, leukemia patients not only live for 9-10 years but can also be completely cured! The difference is a leap in medical oncology.

The role of chemo

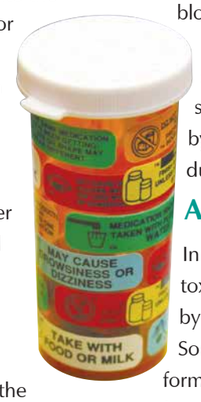
Medical oncology is the treatment of cancer using chemotherapeutic drugs. Today the management of cancer calls for a multidisciplinary approach combining surgery, radiotherapy and chemotherapy. When cancer is diagnosed at an early stage, chemotherapy supplements the benefits provided by surgery and radiotherapy. In advanced stages, it offers good palliation with less side effects, improved quality of life and a prolonged rate of survival. In some cancers, chemotherapy plays a major role and is curative - these include lymphomas, leukemia and germ cell tumors.

A mini-revolution

Chemotherapy drugs do not discriminate between cancer cells and normal cells that have a higher growth rate - such as hair, skin, epithelium of the gut and bone

marrow. As a result, hair loss, peeling of skin, sores in the mouth and gut and drop in blood counts occur.

However, new research into the molecular biology of tumor growth has resulted in sophisticated drugs which discriminate between cancer cells and normal cells of the body. These drugs target specific cancer cells while sparing normal cells.



Zeroing in on cancers

The last decade has seen the development of atleast a dozen such "targeted' drugs. A classical example being the introduction of the drug Imatinib (Gleevec) for Chronic Myeloid Leukemia. These targeted drugs - oral and injectable - are currently available for limited number of cancers - lymphomas, breast cancer, lung cancer, colorectal and head & neck cancers.

However, as the understanding of the biology of other cancers increases, it is only a matter of time before more emerge in the market.

Managing side effects

It was often said of chemotherapy that the treatment is worse than the cure. But the new approach is more considerate, using premedications to predict and control the side-effects. For instance, vomiting which used to be a major cause of concern two decades ago has almost completely been controlled with powerful anti-emetic drugs.

Another side effect was the drop in the blood count for white blood cells. To hasten the recovery of white blood cells growth factors are used. Powerful broad spectrum antibiotics ensure safe delivery of chemo drugs by helping to manage fever during chemotherapy.

A positive tomorrow

In some cancers, older more toxic drugs have been replaced by less toxic modern drugs. Some drugs are available in oral form eliminating the need for prolonged intravenous infusions and hospital admission. With improved version of chemo drugs, improved safety, toxicity, tolerability, improved methods of delivery and targeted agents, modern chemotherapy has leapt ahead and is progressing ambitiously against cancer.

Dr. Ram Prabhu
Medical Oncologist
MD, DM

The True Hero of Radiotherapy –TrueBeam

Article

TrueBeam. A giant leap that Radio Oncology teams have been waiting for.

Imagine an equipment that not only lets you see a tumor in real time, but also lets you target and kill cancer cells with very precise high energy beam. A beam that can be shaped to the tumor and timed to the patient's breathing. This equipment can also deliver high dose treatments in a fraction of the time with submillimeter precision that protects surrounding tissue. Now, imagine doing it all digitally with a keyboard console that is as easy to operate as using a remote control to adjust the volume on your television. The machine we are talking about is the new generation, ground breaking, revolutionary TrueBeam STX.

MIOT introduces TrueBeam

- TrueBeam STX technology makes it possible to treat challenging cases such as cancers in the lung, breast, and head and neck.
- The TrueBeam STX system offers many forms of radiotherapy in a single platform, including: Stereotactic RadioSurgey (SRS), Stereotactic Radiotherapy (SRT), Stereotactic Body Radiotherapy (SBRT), Intensity-Modulated Radiotherapy (IMRT), Image-Guided Radiotherapy (IGRT), RapidArc® Radiotherapy technology, Gated Rapid Arc and Dynamic Adaptive Radiotherapy (DART). Because of this, TrueBeam STX can provide a game-changing capability that allows MIOT Institute for Cancer Cure Radiation Oncologists to tailor your specific radiotherapy treatments.

FAST AND PRECISE

- TrueBeam STX's technology makes it possible to deliver fast, accurate image-guided treatments in just a few minutes per day.
- Output is *four times faster* than other systems. A procedure that once took an hour can be done in 15 minutes. Patients are more comfortable, less tired, and find it easier to stay in the same position.
- With advanced imaging, Radiation Oncologists can deliver treatment more accurately by enabling them to 'see' the tumor they are about to treat and apply very accurate and precise beams which target tumors with *sub millimeter accuracy*.
- The high precision gives us confidence in placement when we are working near sensitive areas such near the spinal cord or brain stem.

Targeting tumours in motion

Many tumors in places like the lungs move when you breathe in and out. TrueBeam STX includes a new "Real time Position Management System" for synchronizing beam delivery with respiration and organ motion. The TrueBeam STX has a control for breathing so it only delivers radiation in the part of the cycle when it senses that the lungs and tumor have returned to the right position.

The precision of placement and beam shaping help us get a more effective dose to the tumor while protecting surrounding normal tissues. TrueBeam is also safer- you will be exposed to *25 percent less X-ray dose* compared to earlier imaging technology.

Beyond TrueBeam

Of course for TrueBeam to be fully effective we have a team of Radiation Oncologists, Medical Physicists and Radiotherapy Technologists who have over a decade of national and international exposure to the latest technologies and techniques used in Radiotherapy and training on TrueBeam.

All this makes TrueBeam the true Hero of Radiotherapy.

Dr. Sollin Selvan
Chief Medical Physicist
Ph.D., FUICC (AUS)

Article

Why Less is More in Surgical Oncology

Can a conservative approach to oncosurgery be as effective?

Surgical oncology is the branch of cancer medicine, which deals with the treatment of cancers by surgery. Common cancers treated by surgery include breast cancer, cancers of the gastrointestinal tract and gynaecological cancers. Surgery is an important part of the treatment for most cancers, and cure is rarely possible without the involvement of the surgeon.

Out! At all costs

Traditionally surgery was a major undertaking feared by patients. Cancer operations were associated with mutilation and loss of body image. Keeping the patient alive was given priority over all else, and quality of life was not considered relevant in the quest for the holy grail of cure. This leads to the oft repeated complaint in cancer that the "treatment is deadlier than the cure".

Advances in chemotherapy and radiation delivery systems have made it possible to avoid removal of the entire organ for several cancers - this is referred to as conservation. In some cases we can avoid surgery altogether - known as organ preservation.

Same cure rates?

When the oncosurgeon adopts an approach of conservation, it does not imply a less effective surgery. It implies an approach tailored to **avoid removal** of the entire organ, for example the breast, while ensuring the same cure rates. The addition of treatments such as chemotherapy or radiation before the surgery shrinks the tumour to a size, allows a less mutilating surgery to be performed.

Conservation and preservation in real life

Mariamma is a 30-year-old lady with a large breast tumour. Traditionally she would be advised to undergo a mastectomy or removal of the entire breast. This will take out the cancer but may leave Mariamma feeling less of a woman. Today, thanks to advances in chemotherapy, we can, prior to her surgery shrink the tumour to a very small size. Then follow up with a breast conservation surgery - where only the tumour bearing portion of the breast with some surrounding breast tissue and the lymph glands in the armpit would be removed, followed by radiotherapy to the breast. This would ensure a result as good as that with mastectomy. At MIOT hospitals **over 70%** of the women with breast cancer are offered breast conservation.

A multi-pronged approach to the rescue

John, a 50-year-old teacher was diagnosed with a cancer in his voice box. Conventional surgery would mean that his voice box would be removed and without his voice his career would be over. But using a multi-pronged approach combining the latest chemotherapy given concurrently with radiation, there is a high likelihood of cure and him having a near normal voice.

Avoiding a lifetime of discomfort

Selvam suffered from cancer of the rectum - the last part of the intestine. This would normally lead to complete removal of the intestine and formation of a permanent opening for stool passage, called a colostomy on the abdomen - causing Selvam discomfort for the rest of his life. Now with chemotherapy the tumour can be shrunk and curative surgery can be performed, without the need for a colostomy.

Keyhole for cancer

Previously minimally invasive surgery or keyhole surgery was not preferred for the treatment of cancers. There were some concerns about the ability of the surgeon to remove the entire cancer through a tiny incision. However with the march of technology, keyhole surgeries are finding an increasing role in the oncosurgeon's portfolio. We resort to keyhole surgeries to obtain a biopsy and to determine whether a tumour, which appears removable on the scans, is actually so before opening the abdomen.

The major benefits of the minimally invasive approach is that the surgery is more effective. The surgeon sees objects magnified 3-5 times by the endoscope. The patient suffers less postoperative pain, smaller scars and an earlier return to normal life. The predominant cancers suitable for this type of surgery are cancers of the food pipe, colon cancers and cancers of the uterus and cervix.

We believe that it is not sufficient to simply offer the patient treatment; the treatment must improve or at least maintain the quality of life of the patient. In other words we want to 'add life to years and not just years to life'. Cancer should no longer be written off as a fatal disease. Cure is possible in many instances and modern treatment can prolong life meaningfully in other cases.

Dr. Ajit Pai
MRCS (Ed), MS, MCh
Chief Surgical Oncologist

Does cancer cure start in Laboratory?

Advances in lab technology have led to greater accuracy in diagnosis, staging and even 'personalized medicine'…

For the best cure and survival rates, cancer has to be detected early - and the laboratory plays a big role in this..

'Cancer' is a disease where the cells are immortal, parasitic, destroy surrounding tissue and spread to kill a patient. Cancer can be diagnosed in the primary, secondary and tertiary stage. In India, cancer is almost always detected in the secondary or tertiary stage. Early diagnosis makes a big difference to cure and survival rates - and this is detected in a Laboratory by performing various tests. These tests have a big impact on the diagnosis, prognosis and treatment. Thus laboratories are true *"Friends to detect the Foe"*.

The workings of a clinical laboratory

The Clinical laboratories include hematology, microbiology, immunology, serology, Clinical chemistry and toxicology.

Article

Here, the pathologist acts as a **consultant to the clinician**, defining required tests and interpreting their results. Many of these tests are conducted to verify a clinical diagnosis. After diagnosis too, tests are required to assess progress of the disease and response to treatment.

In **clinical hematology**, pathologists review all abnormal histograms and blood smears. They may also obtain bone marrow samples from patients. In examining the peripheral blood smears and microscopic sections of bone marrow, the pathologist may encounter diverse organisms - from malarial parasites to causes of anemia, disorders of coagulation as well as definitive diagnosis of malignant diseases such as leukemia.

In **clinical chemistry**, the pathologist determines the concentration of organic and inorganic substances and medications in body fluids. For example, the level of glucose (sugar) in blood or urine.

Toxicology involves therapeutic drug monitoring and detection of drugs and poisons in the blood. In cases of infection, the microbiology laboratory identifies the offending organism and tests to discover which antimicrobials are capable of killing or arresting the growth of that particular bacteria, virus or parasites.

Detecting Cancer

Automation in clinical laboratory has revolutionized diagnostics and today leads to early detection. Cancer can be picked up from Iron Deficiency Anemia which is easily identified by our **Hematology Analyzer**. In case of Leukemia, the histogram displays a count of Immature cells and Blast Cells (Cancer cells). The **Immunoassay analyzer** is needed to screen, detect, diagnose and prognosticate a cancer (Tumor Marker).

PSA is a well-known cancer marker for Prostate cancer in men. Similarly we have 6-10 markers for detection of cancer of liver, pancreas, GI, Breast and ovary.

Malignant or Benign?

The pathologist plays a central role in the diagnosis of surgically removed tissues, particularly when tumor is suspected. Often during surgery the pathologist is called upon for a rapid analysis of the biopsy tissue while the patient is still on the operating table. This preliminary diagnosis guides the surgeon to the next steps to be take during surgery.

Personalized Medicine is here

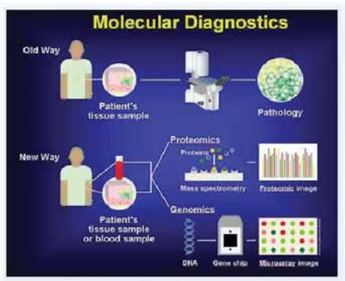
Personalized medicine is the new mantra. It simply means "customized solution". We study the tumor at a molecular level and check whether the standard protocol is effective for remission or whether the consultant should adopt a different protocol.

To sum up the Lab's role in oncology:

- Confirm the diagnosis
- Identify the tumors which have potential to spread
- Subtype certain tumors
- Track response to Chemotherapy and Radiotherapy
- Predict Cure rate
- Detect early cancers in screening
- Guide protocol for therapy
- Use the molecular information to modify treatment plan
- Understand drug metabolism in an individual

To conclude, the modern laboratory can analyse our DNA to a "Path-Engineer" who can customize the cure for the Cancer.

Dr. C.N. Srinivas
MD(Path), DipNB, FCAP, PGDHRM, CLLMC
Fellowship in Immunodiagnostics and Molecular Pathology,USA
Head-Clinical Laboratory, Transplantation Immunology and Molecular Diagnostics



Case Study

Intervening in ONCOLOGY

Using advanced image guidance, Interventional Radiologists assist cancer clinicians, from diagnosis to pain management

Dr. Mohan, a surgical oncologist was preparing to remove a tumour in a patient which he suspected was highly vascular. Once it was excised it might bleed heavily obscuring his view during surgery. He decided to call in the **Interventional Radiologist**. 48 hours before surgery the Interventional Radiologist used imaging technology to guid a catheter to the area and embolise (block) the surrounding blood vessels - thereby cutting off blood supply to the tumour.

Pre-surgery embolisation of tumours is just one of the many ways in which Interventional Radiologists can assist in Cancer Cure.

Image Guided Biopsies

Today any tumor in the body can be accessed and a biopsy taken under **image guidance**, using ultrasound or CT scan. To do the biopsy precisely and faster, robotic guidance and CT fluoroscopy is highly helpful. Using these two techniques the needle can be placed precisely into the lesion for the biopsy.

Image Guided Therapies - (Radiofrequency Ablation)

There are certain tumors in liver, lungs, kidney and bones which can be ablated by Radiofrequency waves. The technique known as Radiofrequency Ablation involves a special needle being placed in the tumor - the tumor is then heated up and destroyed.

Targeted drug delivery

In some tumors, regular intravenous chemotherapy may not be very effective. In these cases the tumor's vessels can be accessed through a catheter and chemotherapy medicines can be directly given into the tumor. This procedure known as chemoembolisation is effective for inoperable liver tumors. New radioactive agents are also available, which can be given directly into tumor vessels.

Pain Relief Procedures

Tumors sometimes cause severe pain. When regular pain medication does not help, ablation procedures are performed under image guidance like celiac plexus or stellate ganglion blocks. By ablating these regions patients do not suffer any pain.

Dr. K. Murali
M.D, P.D.C.C.
Interventional Radiologist

In My Own Words

A patient reveals how it took a 'special team' to save her life.

"One day you are fine and the next day you are told you have cancer. That's what happened to me, Mary Kurien.
At 62, except for diabetes and hypertension, I was in fairly perfect health. This didn't stop me from enjoying my grandchildren or organizing meetings for my ladies circle. Then, one day I suddenly developed severe abdominal pain.
I was rushed to a nearby hospital who diagnosed it as a problem with my pancreas and referred me to MIOT.

A Second Look

Initial blood tests revealed that I had developed Pancreatitis, but the experts at MIOT Advanced Center for Gastrointestinal and Liver Diseases suspected something more. They did an Endoscopic Ultrasound - by passing a pipe through my mouth into my intestine and looking at the Pancreas from a close range. They then passed a needle through this pipe ,took some tissue and sent it for biopsy. When the report came, my worst fears came true. I was diagnosed with Cancer of the Pancreas.

Could I beat Cancer?

Cancer! How did my perfect life turn so dark overnight? I was terrified. As an added complication I developed very high fever and my eyes turned yellow. The MIOT team rose to the challenge and gave me courage. They performed another procedure called **ERCP** to pass a tube through my stomach and into my bile duct and placed a stent to drain the bile which was stagnant - the cause for my fever and yellow eyes. At once I started feeling better.

Power of Team

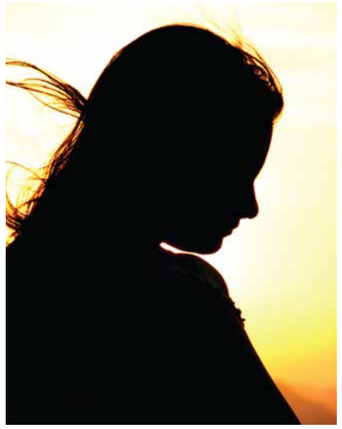
Once I stabilized - MIOT formed a team to restore me to health. A team of Gastroenterologists, Cardiologists, GI Surgeons, Medical and Surgical Oncologists. I was reassured that so many specialists were at work on my case. Finally a date was set for surgery and the Surgical Oncologist performed a 5 hour surgery to remove the tumor. I thought I was out of the red but there was one last hiccup - I suddenly started passing black colored stools and my hemoglobin began dropping. My old gastro team at MIOT came to my rescue. They detected erosions in my digestive tract and started blood transfusion and medications. My hemoglobin returned to normal and it was soon time for me to go home. Now I am back having a great time with my grandchildren and friends. They even say that I look younger and fitter than before. *Yes, with the best of doctors on my side, I did beat Cancer."*

Prof. Dr. George M. Chandy
MD, DM (Gastro), PGDHA, FRCP, FIHS
Dr. S. C. Samal
MD, DM (*Gastro*)
Dr. Ajith Pai
MRCS (Ed), MS, MCh

Case Study

Her Story: Breast Cancer From Curse to Cure

Incidence of breast cancer is on the rise…
Can these stories have a happy ending?



While breastfeeding her child, Vijaya a 32yrs old Nurse noticed an abnormal thickening in her breast. Assuming the cause could be a clogged duct or breast infection. she underwent a few tests including biopsy. The diagnosis was every woman's worst nightmare. Breast Cancer!

The road to a cure

At diagnosis her cancer had already spread to at least one lymph node. Furthermore, it was one of the most difficult types to treat and cure. Gathering her courage, Vijaya began her treatment. She went through 6 cycles of Chemotherapy to shrink the tumour. This was followed by surgery (Mastectomy) where the remaining cancerous tissue was removed and then Radiotherapy. She responded well to the treatment and after the *5 year window* had passed, was declared **cancer free**.

An urban phenomenon

Breast Cancer is the most common cancer in urban India - accounting for 28-35% of all cancers in women. What's more worrying is that the average age for developing Breast Cancer is now **30-50 years** from 50-70 years in the past. Breast cancer in younger women tends to be more aggressive than in the older population.

The incidence of breast cancer is also on the rise, targeting 1 in 8 women! This may be related to factors like late marriages, older age at first child birth, reduced breast feeding, westernization of diet and decreased physical activity.

Be Aware

Therefore, the need of the hour is awareness! Beginning from **20yrs of age** regular screening is advised, so that we can detect and treat the cancer at the earlier stages where breasts can be conserved and the patients have a chance of longer life with less chance of recurrence.

Breast Screening means checking a woman's breast for cancer before there are signs or symptoms of disease. This includes • **Self Breast Examination** - to detect changes like lumps, pain, discharge from nipple, inversion of nipple • **Clinical Breast Exam** performed by doctors • **Mammogram** - a specific X-Ray examination that can detect changes in the breast upto 2 years before the patient or physician.

Recently **Digital Mammography** has been used as an alternative to traditional Mammography. A Digital Mammogram is like your digital camera. It allows the doctor to adjust, store and retrieve digital images electronically. The subtle differences between normal and abnormal tissues may be more easily detected. It is recommended for women with dense breast tissue and in pre menopausal women (below 50years).

MRI of the Breast

In high risk women i.e., those with positive family history an annual MRI of the Breasts is also recommended as an adjunct to mammogram.

Reviewing Treatment Options

There are different types of treatment for patients with Breast cancer depending on the type of tumor and the stage of the disease.

Surgery :

- **Breast conserving surgery:** An operation to remove the cancer but not the breast itself
- **Mastectomy:** An operation to remove the whole breast that has cancer and lymph nodes under the arm and some times the chest wall muscles
- **Breast Reconstruction Surgery:** It may be done at the time of mastectomy or at a future time. The reconstructed breast may be made with the patient's own (non-breast) tissue or by using silicone implants

Chemotherapy: It is the use of drugs to stop the growth of cancer cells. When given before surgery, chemotherapy will shrink the tumor and reduce the amount of tissue to be removed during surgery. Chemotherapy may also be given after surgery to kill any cancer cells that are left.

Radiation Therapy: This uses high-energy X-Rays to kill cancer cells or keep them from growing.

Hormone therapy: It is a cancer treatment that removes hormones or blocks their action and stops cancer cells from growing.

Targeted therapy: New treatment that uses drugs to identify and attack specific cancer cells without harming normal cells. These drugs block the growth factor protein which sends growth signals to breast cancer cells.

Embrace the new normal

The diagnosis to cure for breast cancer can take 6 months to a year. The important factor is to approach it with a courageous and positive attitude. It is important to women to have the support and encouragement of their spouse and families. Believe that you can return to the life you had before - though in some ways it will be different. Call it your "New Normal."

Dr. Saraswati Gokulraj
Obstetrician & Gynaecologist
MIOT Hospitals

Doctor's Diary

When different specialties work together, patients can walk tall.

Will she be a better doctor because she suffered in her youth? That's what we wondered when we heard the heartening news that our former patient Shwetha was graduating from Medical College. Shwetha came to us 8 years ago. This bright 13 year old had been suffering from pain and swelling in her right thigh, for two months.

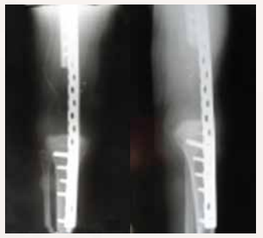
A diagnosis of bone cancer

Our investigations revealed a highly malignant tumor - Osteosarcoma of the right femur. The tumor had broken its confines and invaded the surrounding muscles and other tissues. The Orthopaedic Department sought the opinion of the Surgical and Medical Oncologists on the course of treatment that was to be offered to the patient. Together we formed a Tumour Board to use our combined expertise in planning her treatment.

Complete treatment plan

The Medical Oncologist suggested we offer Shwetha two cycles of chemotherapy before radical removal of the tumor by surgery and that we follow it up with six cycles of chemotherapy for complete eradication of the tumor.

We discussed this plan with the patient's parents and other relatives who were still shell-shocked at the fact that their child had Cancer. Our Social Workers had several sittings reassuring them that modern chemotherapy and radical surgery may offer their daughter a cure, without amputating her leg.



Rib Grafting Done, After 6 Weeks

Rib Grafting Done, After 3 Months

Working together

After 2 cycles of chemotherapy the patient was relieved of the pain to a certain extent and also the size of the tumor reduced considerably. We followed this up with radical excision of the tumor, removing 15 cms. of the affected thigh bone. We filled the gap with a portion of her leg bone, reinforced with ribs taken from her chest and fixed it with plates. The surgery was followed by 6 cycles of chemotherapy.

Shwetha went on to recover completely, walking normally and growing up cancer free. Perhaps her early medical experience influenced her choice of career. Her case will always remain in our memory as an example of how much a cancer patient benefits when specialists from other disciplines can work together.

Dr. J. Ramprasad
Senior Orthopaedic Surgeon
DNB(Ortho) D.Ortho

Catch it Early

The best time to detect cancer is before you know you have it.
And the best way to do it is through cancer screening. Avail of our customised screening packages from MIOT Institute of Cancer Cure and stay healthy.

CANCER SCREENING PACKAGES

FEMALE		MALE	
LEVEL 1	LEVEL 2	LEVEL1	LEVEL 2
CBC	CBC	CBC	CBC
Stool for occult blood	Stool for occult blood	Stool for occult blood	Stool for occult blood
Pap smear	Chest X-ray (PA view)	PSA	PSA
Mammogram	USG Abdomen & Pelvis	ENT consultation	Chest X-ray (PA view)
ENT consultation	Pap smear	Oncologist consultation	USG Abdomen & Pelvis
Oncologist consultation	Mammogram	X-ray chest	Colonoscopy
X-ray chest	Colonoscopy	USG Abdomen & Pelvis	Gastroscopy
USG Abdomen & Pelvis	Gastroscopy		ENT consultation
	ENT consultation		Oncologist consultation
	Oncologist consultation		

Call and make bookings for convenient timings

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