Every Day is Breast Cancer Awareness Day

The war against breast cancer gets more Winnable!

Omega Hospitals

AP’s First Digital Mammography with
Breast Tomosynthesis/3D Mammography
and Contrast Enhanced Mammography

* Conditions Apply

HIPEC
(Hyperthermic Intraperitoneal Chemoperfusion)

ADVANTAGES

- Allows for high doses of chemotherapy
- Enhances and concentrates chemotherapy within the abdomen
- Minimizes the rest of the body's exposure to the chemotherapy
- Improves chemotherapy absorption and susceptibility of cancer cells
- Reduces some chemotherapy side effects

Belmonte Hyperthermia Pump

* Conditions Apply
We are extremely glad to inform you that we have initiated yet another breakthrough treatment for Cancer: HIPEC (HIPEC = Hyperthermic Intraperitoneal Chemoperfusion). This brings us to the forefront in providing most advanced and specialized cancer care for certain GI and GU tract Cancers. Omega Hospitals has raised the curtains for specialized cancer care in the state and HIPEC further adds to it. The major advantage is much higher concentrations of chemotherapy can be locally utilized, while the toxicity and side-effects associated with systemic chemotherapy are minimized. In certain advanced stage cancers of abdomen where there is peritoneal seeding, it remains the only viable option.

Breast Tomosynthesis is the latest breakthrough in Mammography. Tomosynthesis is a special kind of Mammogram that produces a 3-dimensional image of the breast by using several low dose x-rays obtained at different angles. The benefits of 3D Mammography include – Earlier detection of small breast cancers that may be hidden during 2D Mammography and greater accuracy in pinpointing size, shape and location of abnormalities.

Omega Hospitals again stands ahead in bringing the latest of diagnostics and treatments to our cancer afflicted patients.

With warm personal regards,

Dr. Mohana Vamsy, Editor
MS, DNB, Mch. (Surg. Onco), FRCS (Edin),
Dip. Lap. Surg. (France)
From the Medical Desk

What exactly we do

The procedure is done in three stages:

1. Exploration: expert and trained surgeon will open the abdomen evaluate the peritoneal cancer and assess whether the chemotherapy can be safely installed and circulated effectively in abdominal cavity.
2. Debulking: In the cytoreduction or debulking phase of the procedure all visible tumor implants and gross tumor are removed and maximum possible peritonium. However, despite resecting visible tumor microscopic cancer cells still remain. The final stage of the procedure is aimed to eliminate those cells.
3. Chemoperfusion: Here the abdominal cavity is rinsed with a heated chemotherapy solution. [Contrary to common practice of giving it intravenously to blood stream, and eventually throughout the whole body]. Therefore, a much higher concentration of chemotherapy can be utilized, while the toxicity and side-effects associated with systemic chemotherapy are minimized.

Can it be used in too thin and obese patients?

Yes. The current literature does not discriminate and no differences in results

Advantages of HIPEC

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We need to understand that the “cancer” is a process that involves multiple steps, starting from triggers, [initiators], immune surveillance of cancer cells, [leading to establishment of them in body], those involved in progression and metastasis [spread]. If we carefully understand the mechanism of action of a vaccine, it typically works at the immunity level. Hence this particular concept can be understood at various steps

1. Preventive vaccination- This strategy includes the disease which are known to be caused by some virus or other known entities. There are good numbers of trails that have proven the potential of some vaccines in preventing cancer. The examples include
   a. Hepatitis B vaccine for prevention of liver cancer
   b. HPV [ Human papilloma virus] vaccine to prevent cervical cancer
   c. H. Pylori vaccine for the Stomach cancer
   d. Some other experimental vaccines targeting EBV, HSV, HTLV etc.

2. Therapeutic vaccines- These are vaccines are those developed to treat established cancer in individuals. The major challenge is that a tumor can have many different types of cells in it, each with different cell-surface antigens. Furthermore, those cells are derived from the individual with cancer, and therefore display few if any antigens that are foreign to that individual. This makes it difficult for the immune system to distinguish the cancer cells from normal cells and so as the vaccine development. However by purifying the antigens and culturing with own immune system, few vaccines were developed, that have shown some clinical benefit.
   a. Dendrion – prostate cancer
   b. Hyper immune pancreatic vaccine
   c. For kidney cancer
   d. For majority solid tumors

3. Regular immunization for the cancer patients- In view of the cancer patients having naturally low immunity, the vaccination is often different. The common philosophy includes – avoid live vaccines and they require more frequent doses [boost]
4. The last potion is use of a different vaccine for the treatment of cancer by principles of generalized immune stimulation either locally or systemically (usually Th 2 response)
   a. BCG – for Bladder tumors
   b. Mycobacterial vaccine – Squamous cell lung cancer

Though the depth and width of this topic is enormous, as well as ongoing research amounts close to thousands of ongoing projects, [which we hope to bring better and longer life to cancer patients], the approved ones are still limited and we can use the best out of them with the help of trained oncologists.

VACCINES IN CANCER

Dr. P.S. Dattatreya, MBBS(Hons); MD, DNB, DM, DNB; ECMO; PDCR
Sr. Consultant-Medical Oncology, Sr. Consultant-Haematology Oncology

The two words “vaccine”, which means – to prevent disease, and Cancer “which usually is detected quite late”, appears to be contrasting beyond 40°C. The same forms basis for the hyperthermic isolated limb perfusion for tumors like melanoma. The challenge in peritoneal cavity is that we cannot tightly regulate the temperature and isolate [unlike limb, where it is easy]. However with advancements in technology and expertise, the procedure had been mastered in few centers and is in regular practice. The key is to maintain very stringently between 40-42°C. The second major advantage is much higher concentration of chemotherapy can be locally utilized, while the toxicity and side-effects associated with systemic chemotherapy are minimized.

Is it scientific?

It is very well known since ages that the normal cells can withstand a temperature of 42°C in contrast to cancer cells, that cannot withstand

PROXIMAL TIBIAL TUMORS - LIMB SALVAGE OPTION

Dr. K. Chandra Sekhar, Sr. Consultant, Department of Musculo Skeletal Oncology

With advancement of metallurgy and availability of modular prosthesis for reconstruction of proximal tibial tumors, limb salvage surgery is possible with preserving the movement in knee and weight bearing. Resection of the proximal tibia includes the removal of one half to two thirds of the tibia along with a portion of all muscles that insert on it. The proximal tibia is
considered to be the site in which surgery is the most complicated. The major reasons are the lack of muscle coverage along the anteromedial aspect of the tibia, the relatively small caliber of the blood vessels around the leg, and the need to include the insertion site of the extensor mechanism.

Types of possible reconstructions include primary arthrodesis, prosthetic replacement, and allograft replacement. We prefer prosthetic replacements because of the high rates of nonunion and infections associated with allograft reconstruction and the poor function of an arthrodesed knee.

**INDICATIONS**
- Primary bone sarcomas of the proximal tibia
- Benign-aggressive tumors associated with extensive bone destruction
- Localized Metastatic tumor associated with extensive bone destruction.

**CONTRA INDICATIONS**
The major contraindications to limb-sparing surgery are neurovascular involvement and compromise as well as extensive soft tissue tumor involvement.

**SURGICAL MANAGEMENT**
There are three major steps involved in successful resection and reconstruction of tumors of the proximal tibia:
- Resection of the tumor
- Prosthetic reconstruction of the skeletal defect and knee joint
- Reconstruction of the extensor mechanism and soft tissue coverage of the prosthesis with a gastrocnemius flap

**COMPLICATIONS**
- Limb edema
- Flap ischemia to full-thickness necrosis, Flap survival increases with overlaying of a medial gastrocnemius flap and elevating with fascial layer.
- Deep periprosthetic infection, which can be reduced with use of gastrocnemius cover
- Dysfunctional extensor mechanism and extension lag. Reduced with proper attachment of the patellar tendon stump to the prosthesis and reinforcement with a bone graft and prolonged immobilization after reconstruction.
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• For tomosynthesis, the breast is positioned and compressed in the same way as for a mammogram but the x-ray tube moves in a circular arc around the breast.
• The x-ray dose for a tomosynthesis image is similar to that of a regular mammogram.
• Some breast cancers do not show up on mammograms or \"hide\" in dense breast tissue.

From the Medical Desk

Dr. Syed Safiullah, HOD & Consultant, Department of Radiology

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A normal (negative) exam is not a guarantee that a woman is cancer-free.
• When a mammogram appears normal, but cancer is later found, the mammogram is called a false negative exam. The false negative rate is estimated to be 15-20%; higher in younger women and with dense breasts.
• When the mammogram shows a suspicious change in the breast but no cancer is found, the mammogram is called a false positive exam. It is estimated that 75-80% of all breast biopsies resulted in benign results (no cancer is found). A normal (negative) exam is not a guarantee that a woman is cancer-free.

CHEMO PORT IN CANCER PATIENTS

Dr. Nirni S.S, MD (Internal Med), DM (Hemato Onco), Fellow (New York Medical College) USA, Fellow (Queens Elizabeth Hospital, Birmingham) UK
Sr. Consultant Medical Oncologist – Hematologist & BMT Physician

The port is usually inserted in the upper chest, just below the clavicle or collar bone, leaving the patients hands free.

How it works
A port consists of a reservoir compartment (the portal) that has a silicone bubble for needle insertion (the septum), with an attached plastic tube (the catheter). The device is surgically inserted under the skin in the upper chest or in the arm and appears as a bump under the skin. It requires no special maintenance and is completely internal so swimming and bathing are not a problem. The catheter runs from the portal and is surgically inserted into a vein (usually the jugular vein, subclavian vein, or superior vena cava). Ideally, the catheter terminates in the superior vena cava, just upstream of the right atrium.
The incidence of breast cancer has been increasing and, currently, it is the most common cancer in females. Surgery is the main treatment and the current tendency is towards less extensive procedure with axillary dissection for removal of lymph nodes to guide further treatment. In this situation, the anesthetic technique should provide adequate intraoperative anesthesia and good postoperative analgesia without collateral effects and with the minimum hospitalization time.

In our hospital general anaesthesia with endotracheal intubation is the most common technique used for breast cancer surgeries. However we carried out modified radical mastectomies in five patients with respiratory risks for GA under thoracic epidural blocks successfully. All the patients were ASA grade 1 with respiratory conditions like bronchiectasis, bronchial asthma and other COPDs. The patients were given optimal respiratory preop nebulisations with bronchodilators and antibiotics where necessary. Epidural catheters were inserted at the T6-7 or T7-8 levels using the standard loss of resistance technique in sitting positions. A total of 13 to 15 ml of 2% xylocaine with adrenaline was injected to achieve a 6 to seven segment block. Level of block was assessed prior to incision in the infraclavicular area.

Intraoperatively, the quality of anesthesia was adequate in most patients. In those patients, dissection went as far as the second level and the surgery was not compromised. A problem of thoracic epidural block is related with thoracic and axillary innervation. On the surface, the territory of the fourth cervical root is above the second thoracic dermatome, and the lower cervical roots give rise to the innervation of the axilla along with the second thoracic root. Thus, adequate blockade for the surface should include the fourth cervical root. None of our patients required any additional local infiltration in the axilla.

Sedation was given in all the patients with dexmed infusion under strict etco2 monitoring. Ondensetron was also administered. None of the patients complained of nausea or vomiting. One patient required pethedine supplement due to mild discomfort. Two patients had mild bradycardia which was easily controlled with glycopyrolate. All patients showed an average of 20% fall in BP which was also easily controlled with sos vasopressors.

Postoperatively epidural analgesia was continued with continuous infusion of 0.125% sensoricaine. Patients required no additional sedation or analgesia apart from tramadol. Hospital stay was the same duration as all other breast cases operated under general anaesthesia.

We found our experience with thoracic epidural anaesthesia for modified radical mastectomies satisfactory and a good alternative for patients with high pulmonary risks for general anaesthesia.