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Oncology Forum wishes its readers

HAPPY NEW YEAR

2021

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MESSAGE FROM SECRETARY'S DESK

*Dr Geeta Kadayaprath
Director, Max Healthcare*

This year 2020, has been a tough year and a year that we would happily want to forget. For those who have been in the front line of this fight against Covid, it has been the toughest. Despite the hardships, the frontline workers have done their best to deliver care to patients suffering from Covid. In this year, we have also lost several Covid Warriors and I take this opportunity to remember them and salute them for their unflinching services during this pandemic, before making the supreme sacrifice!

Covid has changed the way we look at life. Academics which

threatened to suffer in the beginning has found a way to express itself on the virtual platform and reach out to students in the comfort of their homes.

For Oncology Forum also, it has not been any different. While we were slow to understand the impact it would have on our meetings, we were able to get back on board and conduct several subspecialty meetings throughout the year. What was heartening was that we were able to have the 3rd Oncology Forum Annual meeting on schedule, in December 2020. It was hailed as one of the best meetings in oncology held throughout the country. Oncology Forum from being an exclusive Delhi NCR group had caught the imagination of doctors in India and abroad.

Many of us would want to forget this year as a bad dream. As the New Year beckons, there is lots to look forward to and I am sure we will be able to live the normal as we knew it before Covid struck. I strongly believe that like all good things come to an end, bad things will too!

Cheers to a wonderful year ahead !

SPECIAL POINTS OF INTEREST:

- Patient and caregiver attitude towards positivity
- Talent Meet
- Deep Inspiratory Breath Hold Technique (DIBH)
- Sinonasal Carcinoma



ENDOSCOPIC RESECTION OF SINONASAL MALIGNANCY - REVIEW & EXPERIENCE

Dr Kiran Joshi & Dr Mudit Agarwal,
RGCIRC, Delhi



Background: Sinonasal malignancies are a group of rare heterogeneous cancers and represent 3% of head and neck cancers and less

than 1% of all cancers of the human body.¹ These lesions may originate from Schneiderian mucosa, minor salivary glands, neural tissue, and lymphatics. Approximately Sixty percent of sinonasal tumors arise in the maxillary sinus, 20% arise in the nasal cavity, 5% in the ethmoid sinuses, and 3% in the sphenoid and frontal sinuses. Fifty-five percent of sinonasal malignancies are carcinomas. Proximity to the orbit, brain, cranial nerves, and carotid arteries make surgical resection inherently challenging and potentially morbid. Although it has been established that maximal safe surgical resection yields the best overall survival (OS) outcomes,² the role of postoperative radiotherapy is less well defined. The optimal sequencing of chemotherapy and radiotherapy for patients with sinonasal malignancy remains controversial. Small reports have shown a benefit for induction chemotherapy. Definitive concurrent chemoradiotherapy has been less studied in this disease, with a few series demonstrating low survival outcomes.

Over the past few decades with advances in endoscopic surgical techniques, instrumentation, image guidance, hemostatic tools, and reconstruction methods, the use of endoscopic approaches for surgical resection of sinonasal cancers has gained popularity as a minimally invasive approach

Complications of open or endoscopic approaches include cerebrospinal fluid leaks and sequelae, cranial nerve injuries, and haemorrhage. Open ap-

proaches have additional morbidity associated with performing a craniotomy. Additionally, the endoscopic approach avoids facial incisions and potential cosmetic issues that arise from lateral rhinotomy and coronal incisions.

Review of literature: In the early to mid-20th century, surgical resection consisted of maxillectomy, nasal cavity exenteration, and curettage of the ethmoid and sphenoid sinuses with overall 5-year cure rates of 28%.³ In 1963, Ketcham et al. described the transfacial and transcranial craniofacial resection (CFR) for sinonasal cancers.⁴ In contrast to curettage, the CFR described en bloc resection of the tumor and cribriform plate, and patients from this series demonstrated improved survival outcomes. Overall, 5-year survival rose to 51% in the 1990s for sinonasal malignancies, excluding esthesioneuroblastoma.⁵

Reports of endoscopic approaches to sinonasal malignancies were first published in the late 1990s. Indications for endonasal endoscopic approaches expanded as endoscopic experience with cancer resection and cerebrospinal fluid leak repair grew. The endonasal endoscopic approach (EEA)

is now used to resect cancers invading the dura and brain. In 2008, Nicolai et al. published their outcomes for 184 patients treated exclusively endoscopically or endoscopic-assisted between 1996 and 2006. The overall cohort 5-year DSS was 81.9% with a 91.4% DSS for the endoscopic group and 58.8% for the cranioendoscopic group.⁶

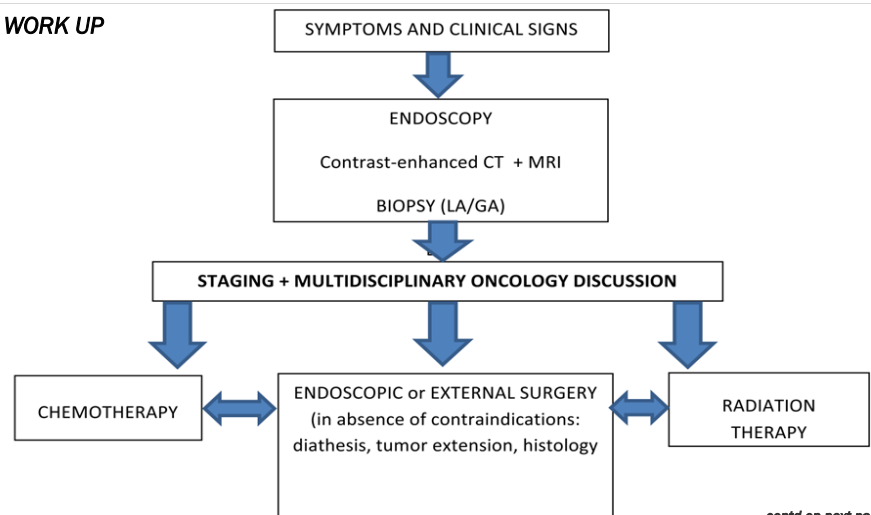
A recent systematic review and meta-analysis by Rawal et al. investigated the survival outcomes for 952 patients treated with endoscopic or endoscopic-assisted surgery for malignant sinonasal tumors.⁷ In an aggregate analysis of 759 patients, the overall 2-year survival was 87.5% and the 5-year survival was 72.3%. Wellman et al demonstrated that patients with negative margins had similar outcomes irrespective of the procedure being performed en bloc or in a piecemeal fashion.⁸

A systematic review and pooled-data analysis of 226 patients demonstrated that there was no difference in survival outcomes between endoscopic and traditional CFR for T1 and T2 sinonasal malignancies.⁹

OUR EXPERIENCE

We routinely perform skull base surgery at our department in Rajiv Gandhi cancer institute, Delhi. Since 2018, we have operated 7 cases of Sinonasal carcinoma.

WORK UP



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ENDOSCOPIC RESECTION OF SINONASAL MALIGNANCY- REVIEW & EXPERIENCE

Contraindication for Endoscopic resection & Indication for open surgery

Absolute contraindications:

- ocular extension;
- maxillary involvement other than sinonasal wall;
- cutaneous extension;
- anterior and/or lateral frontal sinus invasion;
- dural invasion with lateral extension beyond medial, orbital wall;
- clear cerebral parenchyma invasion.

Relative contraindications:

- vascular invasion (internal carotid artery, cavernous sinus);
- optic chiasm involvement;
- posterior fossa involvement;
- tumoral extension under C2 plane.

We offer neoadjuvant chemotherapy in ECOG PS 0-2 patients with locally advanced sinonasal tumors with the extension of tumor beyond nasal and paranasal sinus requiring extensive morbid surgery and would have chances of incomplete gross total resection.

Endoscopic CFR – 2 (Esthesioneuroblastoma), one patient received neoadjuvant chemotherapy because of intracranial extension of disease.

Endoscopic Endonasal Resection -1 (Esthesioneuroblastoma)

Endoscopic medial maxillectomy -1 (Malignant mucosal melanoma)

Open CFR – 2 (Osteosarcoma & Chondrosarcoma)

Combined Endoscopic & open resection - 1 (Adenocarcinoma)

Endoscopic patients were discharged after five days and open surgery patients remained indoor for 2 weeks. We have not encountered CSF leak in any of our patients.

We advocate adjuvant radiotherapy in cases of T3 & T4 malignancy, Hyams III & IV (Esthesioneuroblastoma), positive perineural extension, positive lymphovascular extension, in all cases of adenoid cystic carcinoma and positive lymph nodes. One patient with malignant mucosal melanoma developed systemic metastases after 6 months, locally there was no evidence of disease. Rest 6 patients are doing well.

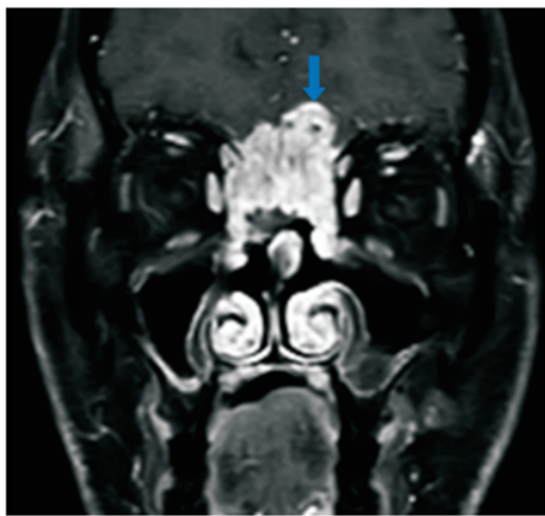


Fig 1: Pre chemotherapy MRI of Esthesioneuroblastoma

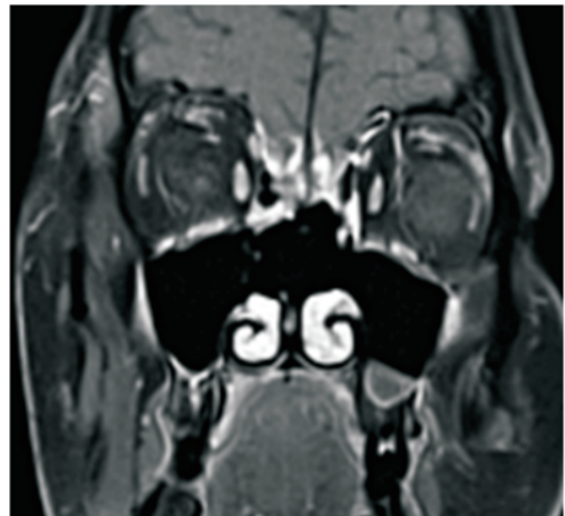


Fig 2: Post chemotherapy MRI of Esthesioneuroblastoma

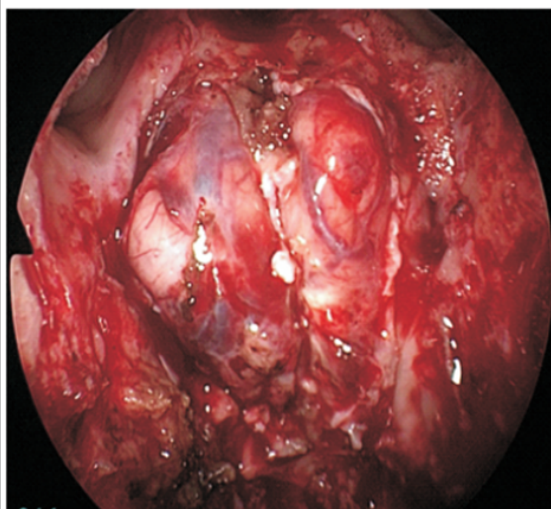


Fig 4: Basifrontal lobe after after Endoscopic tumor

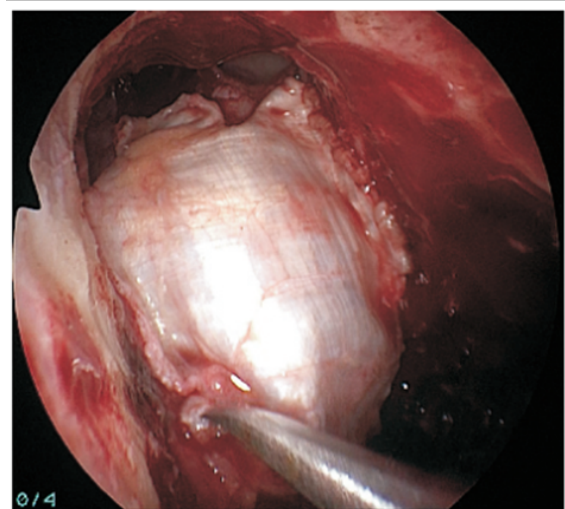


Fig 5: Endoscopic Duraplasty

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ENDOSCOPIC RESECTION OF SINONASAL MALIGNANCY- REVIEW & EXPERIENCE

Link for Endoscopic craniofacial resection video -<https://www.youtube.com/watch?v=rcwRP83YEXA>

Conclusion: The options for the management of sinonasal malignancies have expanded significantly in recent decades from traditional open resections to minimally invasive approaches. Analysis of the literature establishes the feasibility, low morbidity, and oncologic safety of endoscopic surgery for sinonasal malignancy in rigorously selected patients. The significantly lower post-operative morbidity allows earlier radiation therapy, which may improve control. Therefore, proper selection of cases is critical to the achievement of excellent outcomes.

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TO FREEZE OR NOT TO FREEZE ???

Dr Prof (Gp Capt) Renu Madan (retd)
Venkateshwar Hospital , Delhi



A frozen section is often performed to guide the surgeon during surgery regarding further management. It is a 'crude' but rapid way of processing a 'small' tissue and making it hard

by freezing it instantly to sub-zero temperature so that it can be sectioned and subjected to a rapid stain to view the section under microscope. Important to note are the two words, 'crude' and 'small', because frozen section has its limitations and should not be misused to answer questions that need a detailed study or proper processing. Questions that need answers like grade of tumour, important decision making information like rate of mitosis and dysplasia versus well differentiated carcinoma, are best not opined on frozen section study.

I – Why is a frozen section performed or indications of the frozen section.

A frozen section is usually performed to answer very specific questions based on which the surgeon can decide his further intraoperative management of the patient. These indications are:-

1. Is the tissue representative of the tumour?
2. Is the tumour obviously benign or malignant?
3. Is the tumour epithelial, a lymphoma or otherwise?
4. Is the tumour inflammatory or otherwise?
5. Is the tissue involved with tumour – usually in a lymph node for metastasis or a nodule in the vicinity of tumour?
6. Is the margin of the tissue free or involved by tumour.
7. Is the tumour glial or non glial {in brain tissues} (here a squash preparation is also made and helps).
8. Does the tissue show any specific morphology like ganglion cells in Hirshsprung disease { or its absence}
9. Is there any obvious pathology like a granuloma or parasite in the tissue.
10. As a precautionary investigation when there is a surprise on the table for example a polyp or a growth not previously reported or anticipated.

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TO FREEZE OR NOT TO FREEZE ???

II --When is the frozen section performed?

It is always better to plan the surgery and discuss the case , a day in advance with the concerned pathologist because the exercise of frozen section requires a team work of high precision .Most important to remember is that the patient is open on the table, awaiting the answer of this exercise ,and the time is of critical importance. Hence, the lab has to be informed and kept prepared to receive and give a prompt answer in the stipulated time. For best results it has been found from experience that prior planning helps and most of those surgeries that require a frozen section are done well in time as early as possible in the day rather than at the fog end of the day. The status of manpower and machine has to be ascertained in advance because failure in these aspects will compromise the whole exercise.

III - How is the frozen section dealt with and result informed.

The key issue in this exercise is time. Hence no time should be wasted in making the tissue available and for speedy result a mobile number which is attended promptly is always given to the pathologist. A written result always follows and should be endorsed in the operation notes. All relevant findings of the surgery should be communicated to the pathologist to aid in reaching a comprehensive conclusion and provide maximum help to the treating surgeon. Findings and results of frozen section are always confirmed on the formalin fixed tissue subsequently and incorporated in the results.

IV - When should a frozen section study be avoided

The crux of the matter is in being able to decide whether the utterly technical exercise of performing the frozen section procedure will benefit the patient in anyway or not. It cannot be misused to merely satisfy a surgical curiosity or to impress the anxiously waiting relatives outside the operation theatre . One needs to be aware that the routine fixation is the best way to study the anatomical details and in zealous but inexperienced hands the frozen section results can be catastrophic . The swelling and distortion of normal cells has landed many a pathologist in a professionally embarrassing situation but the outcome on the patient can be very drastic . The bible of Surgical pathology Rosai and Ackerman's Surgical Pathology edited by Juan Rosai (whom we recently lost in Milan this year) clearly states that the pathologist need not be apologetic if he/she has not been able to arrive at a definite answer and is at full liberty to reserve the opinion till a formalin fixed section is available. "He should state this fact as affirmatively as he makes the diagnosis of carcinoma. "(1) The onus of responsibility then lies on the surgeon whether to provide more tissue to the pathologist or to proceed further with preplanned surgery.

The CAP sponsored review of over 90,000 frozen sections performed in 461 institutes in the USA has shown a concordance rate of 98.58% and of the discordant cases 67.8 % were false negative diagnosis due to (a) misinterpretation of the original frozen section (b) absence of the diagnostic tissue in the material frozen but presence in the material not sampled. This can happen in large specimen being subjected for frozen section (c) absence of diagnostic tissue in the frozen section but inclusion in subsequently sent tissue subjected for formalin fixation. All these reasons were in one third proportion of discordant outcome. (2)

The final word in the matter remains that of humble wisdom - one should aim for the stars always and strive for what is best for the patient ,but one should know when to hold back in the best interest of the patient and how much to commit if the sample is compromised (in one's own interest) . There are no bouquets waiting at the end of a treacherous slope if one indulges in unscientific adventure fanned by false bravado . The lesson is equally important for both , the Surgeon, and his partner in crime, the Pathologist.

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DEEP INSPIRATORY BREATH HOLD TECHNIQUE (DIBH)- A BOON FOR LEFT BREAST IRRADIATION

Dr Tripti Saxena, Max Superspeciality, Patparganj, Delhi



Historically, cardiac doses from left-sided breast irradiation have been associated with a higher risk of cardiac associated morbidity and mortality. The mean radiation dose to the heart correlates with rates of both cardiac deaths (1,2) and coronary events (2,3). The risk of heart disease and coronary events is estimated to increase 4-7% for each 1 Gy in mean heart dose (Fig. 1), and there does not appear to be a minimum dose threshold below which there is no risk of cardiac events (9). Over the past several years, advances in radiation delivery techniques have reduced cardiac morbidity.

Deep inspiration breath-hold (DIBH) is a technique that takes advantage of a more favourable position of the heart during inspiration to minimize heart doses during radiation therapy. This technique is based upon the observation that during inspiration, the flattening of the diaphragm and expansion of the lungs pulls the heart away from the chest wall (Fig. 2). During both simulation and treatment, the patient takes a deep breath and then holds it for a period of time during which radiation is administered. This allows for a decrease in radiation dose to the heart (5).

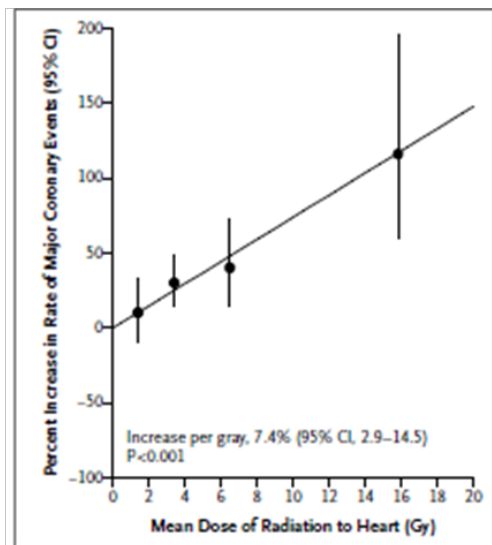


Fig. 1: Rate of major coronary events according to mean radiation dose to heart, as compared with the estimated rate with no radiation exposure to heart (Darby et al)

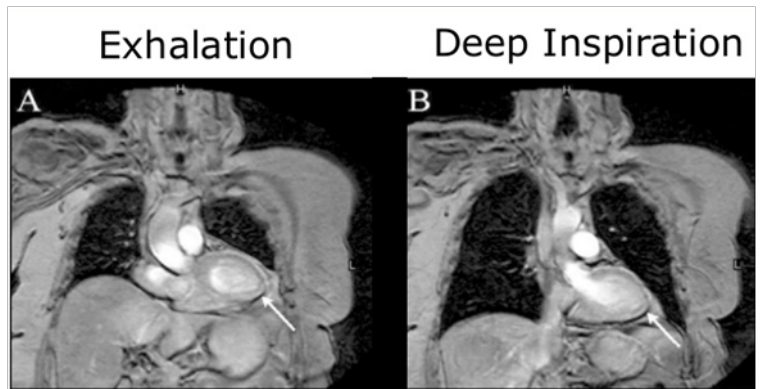


Fig. 2: Position of heart, diaphragm, and volume of the lung in different phases of the respiratory cycle

The very important aspect of successful delivery of radiation therapy by DIBH technique is **Respiratory Coaching Sessions**. The coaching session usually starts at least five days prior to start of radiation therapy. This counselling usually takes place on the CT couch with patient placed in treatment position with both arms above head. The designated personnel then guides the patient on maximal expansion of the upper chest and steadily and comfortably increasing the breath hold time in incremental steps of 10 secs. This ensures consistent breath hold pattern and increases reproducibility.

Once the coaching sessions are over, planning CT scans taken in both free breathing (FB) and DIBH phase from the mandible to 7 cm below inframammary fold and breathing was monitored using Varian Real Time Position Management (RPM) respiration synchronized imaging and treatment system (Fig. 3).

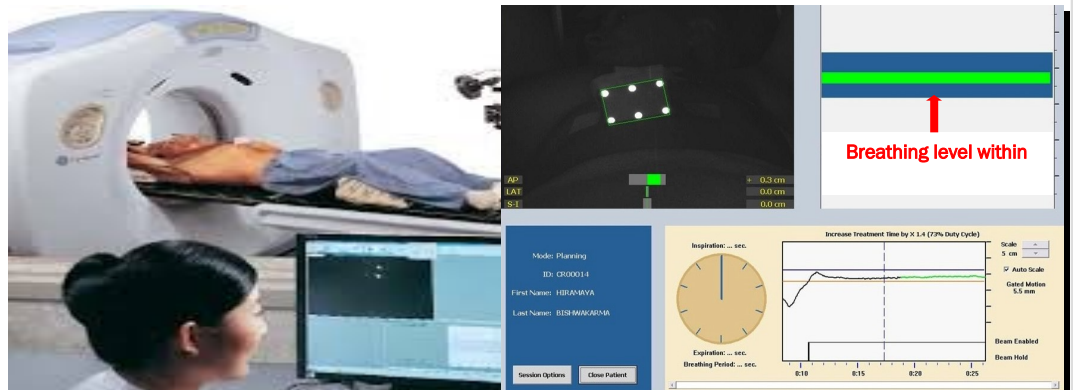
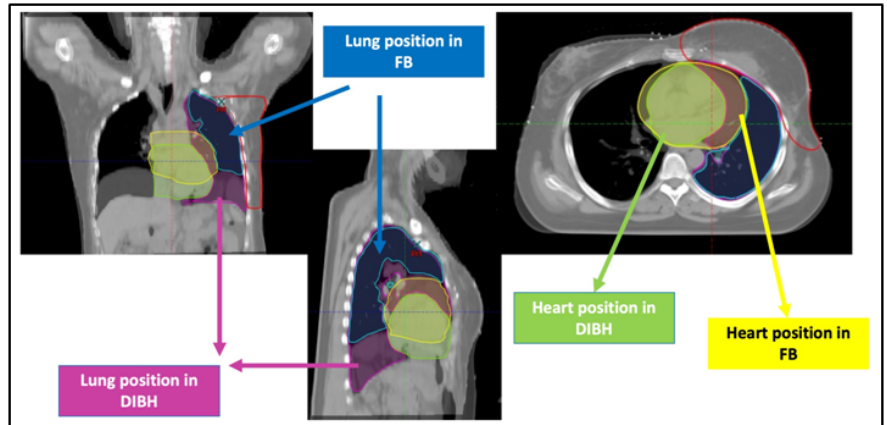


Fig. 3: Varian Real Time Position Management (RPM) respiration synchronized imaging and treatment system

DEEP INSPIRATORY BREATH HOLD TECHNIQUE (DIBH) - A BOON FOR LEFT BREAST IRRADIATION

The next step is **delineation of target volume and organs at risk (OARs)** and it includes primary target volume, heart, left and right lung, contralateral breast, LAD, brachial plexus and esophagus. In Fig. 4, the left lung and heart has been contoured in both FB and DIBH scans for comparative purposes.

Fig. 4: Target delineation and co-registration with FB scan



Following target and OARs delineation, **treatment plan is generated using the Eclipse Planning System**. The main objective of the plan is to ensure that 95% of the target volume should receive >95% of the prescribed dose and dose to OARs should be within defined constraints as per various guidelines. **Plan evaluation** is being done by analyzing dose volume parameters to various target volumes and OARs (Fig. 5).

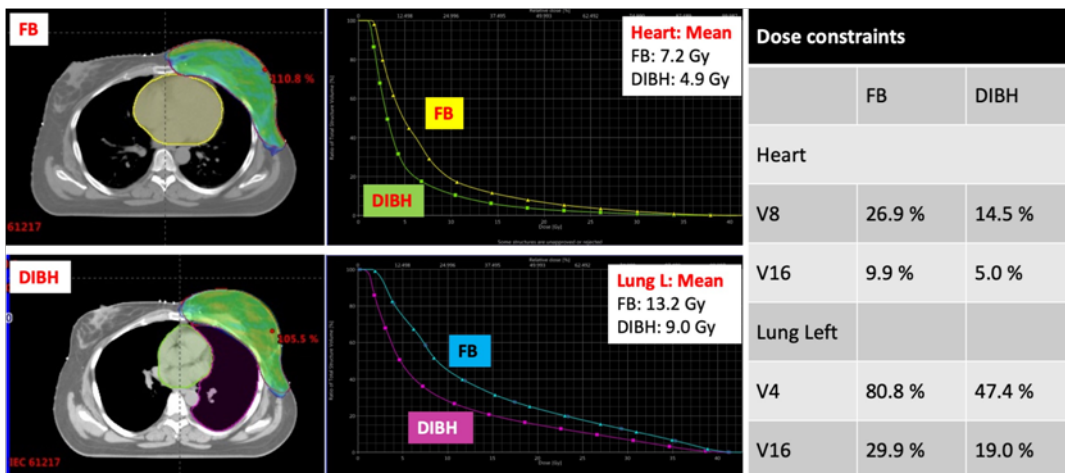


Fig. 5: Plan evaluation in both DIBH & FB scans, the doses to OARs (heart & left lung) are comparatively less in DIBH plans

The final step is **radiation delivery**. Patient is positioned supine with arms above head and his / her breathing pattern is observed from console by radiation technologist and physician. For setup verification, on couch imaging is done followed by treatment delivery (Fig. 6).

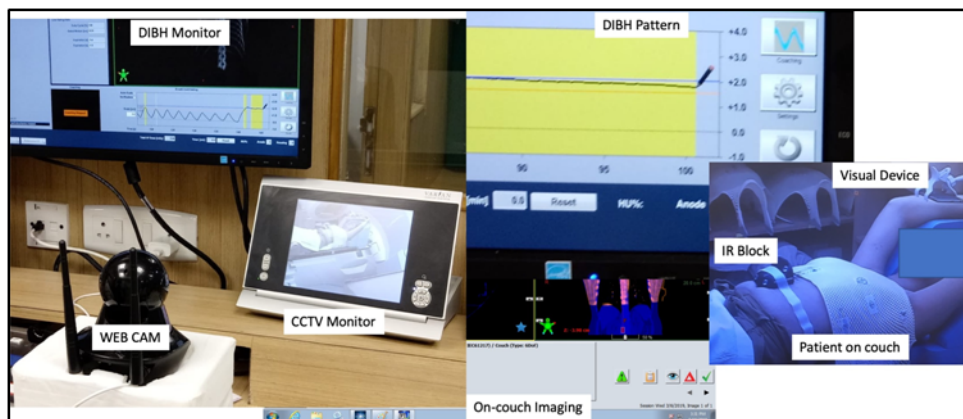


Fig. 6: Radiation treatment delivery by DIBH technique

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DEEP INSPIRATORY BREATH HOLD TECHNIQUE (DIBH)- A BOON FOR LEFT BREAST IRRADIATION

At Max Superspeciality Hospital, Patparganj, we have already treated more than 100 left sided breast cancer patients by DIBH technique, starting from April 2019. We have also retrospectively evaluated first 50 patients plans in both FB and DIBH scans for comparative purposes and found large reduction in radiation doses to heart and LAD by DIBH technique (Fig. 7).

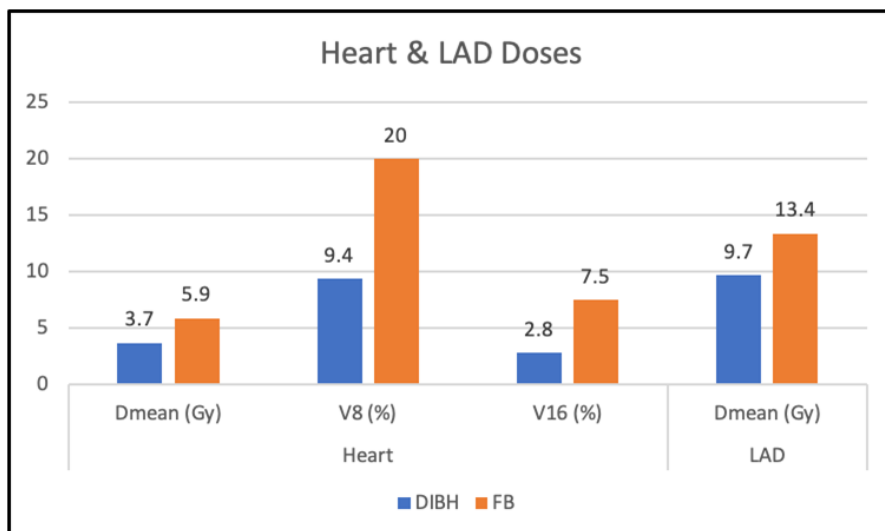


Fig. 7: Comparison of doses to heart and LAD by DIBH and FB technique

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ATTITUDE DURING CANCER MANAGEMENT

Dr Rekha Arya,
Yashoda Hospital, Ghaziabad



When Someone first came to know that he/she is having cancer, they might feel that, life is out of control. This bring up a wide range of feelings you're not used to deal with it. They first, suffer from denial, they have trouble believing or accepting the fact that they have cancer. It's very normal to ask, "Why me?". They suffer from mixed feeling of fear, panic, frustration, anxiety and helplessness. There are lots of reason behind this, like they think if I'm going to

live? What will be with my family and children. Their normal routine is disturbed by doctor visits and treatments. Doctors use medical terms that they don't understand. They feel like they can't do the things they enjoy. They feel helpless and lonely. Dealing with these thoughts or emotions may not be easy at first. Having a support system is an important part of dealing with emotions. Feeling strong and positive will help you during the healing process.

These patients may experience distress and arrange of strong emotions, such as disbelief, fear, sadness, anxiety and anger. Along with these experiences, it's also natural to worry about the treatment, side effects, test results and the long-term outcome, as well as the impact that the diagnosis will have on your family,

work and other responsibilities. All these factors causes negative impact on cancer patients. It is obvious that cancer treatment is physically and emotionally challenging, like the disease itself.

After passing through all these emotional feelings and mental stress it is very difficult to keep yourself always positive. There's no proof that being positive can alter cancer's progression, though studies suggest optimism boosts longevity and overall mental health. People are often told that they have to be positive to get through cancer treatment. Optimism is a wonderful characteristic, but sometimes it's difficult to achieve while in the midst of a physically demanding health trial such as cancer. Feeling strong and positive will help you during the healing process. How-

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ATTITUDE DURING CANCER MANAGEMENT

ever, mood swings can be common after a cancer diagnosis. Sadness, worry or fear are natural emotions during the cancer journey which lead to cancer patients in negative thought or negativity. Doctors understand this concept and encourage their patients to try and keep a positive attitude during cancer treatment journey and during follow-up time. They realize the effects of such thinking will be evident in their patients' day-to-day activities. Mostly Cancer patients suffer depression during treatments we even don't realize it, what the sign and symptoms of depression in patients. This is shown in picture on the left.

Now important question is how can we avoid depression and keep ourself motivated or positive all time, during diagnosis and how to keep your head up during cancer treatment?

Symptoms of Clinical Depression

- Changes in normal sleeping patterns
- Random outbursts of tears or anger
- Frequent thoughts of death or suicide
- Intense feelings of despair & sadness
- Loss of interest in enjoyable activities
- Extreme tiredness or lack of energy
- Appetite increase or decrease
- Trouble focusing & concentrating

Source: Mayo Clinic, 2020

Here are few tips:

- Surround Yourself with Positive People and Positive Energy such as inspirational books and uplifting music.
- Minimize the Time You Spend with Negative People and Eliminate Toxic surroundings.
- Conquer your own fears. Fear is not only negative, it can be debilitating. If you're unable to talk yourself out of a fearful situation, it may be necessary to obtain professional help.

There are two type of tools :

Non-therapeutic Tools

- ◆ Mild physical activity like brisk walk, jogging, yoga, meditation has positive effects on reducing stress.
- ◆ A balanced diet (high calorie and high protein) can also help improve your mood and reduce stress.
- ◆ Surround yourself with friends and family members that will help you cope with cancer-related life changes.
- ◆ Chanting is one method of coping when an illness threatens our very integrity. Some people with cancer have found that they can help turn their negative thoughts in a positive direction by repeating a mantra or phrase.

Therapeutic Tools

- ◆ When there are symptoms in cancer patients prescribe Medication by a doctor can be used to manage depression symptoms.
- ◆ Support groups, led by a social worker, clinical therapist, psychiatrist, or psychologist, can be helpful when coping with cancer-related depression and to elevate mood.
- ◆ Cognitive-behavioural therapy is a type of therapy that helps patients identify and manage emotions and thoughts. Cognitive-behavioural therapy has been proven effective in managing depression.

Nontherapeutic tools

- Physical activity
- Healthy diet
- Friend and family support

Therapeutic treatments

- Medication
- Individual therapy (including cognitive-behavioral therapy)
- Support groups

ATTITUDE DURING CANCER MANAGEMENT


A positive attitude can help you in all walks of life, and even in cancer. A new study done by the Israel Institute of Technology shows that positive emotions can be helpful in fighting cancer.

The new study, titled Modulation of anti-tumour immunity by the brain's reward system, was published in the science journal Nature. It claims that there is a deep connection between the patient's mental state and cancer survival.

Someone who has "been there" can truly connect with another facing cancer, and leave them with the blanket of a feeling that says; "You're not alone."



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