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Summary and Key Points

1. Physicians have traditionally referred to multi-specialty physician management as multi-disciplinary management; today multi-disciplinary management usually refers to team based care, which includes the other patient care professions. This chapter will use the older definition.
2. Tumor Boards are the model for multi-disciplinary management. They may be site specific or include the entire spectrum of malignancy.
3. At Tumor Boards, staging workup and treatment recommendations are made collectively, and then the treatments are delivered by the respective modality specialists and their individual teams.
4. Improved clinical decision making leading to superior survival for patients with some diseases and better quality of life has been documented with multi-disciplinary management.
5. Just like curative patients, palliative patients require multi-disciplinary management. The palliative care approach is team based.

Introduction

Until recently, management of a cancer was usually done by a single physician, who would make the diagnosis and treat the tumor, sometimes with several treatment modalities. For example, many dermatologists, for example, had [orthovoltage radiation](#) therapy machines and would radiate some skin cancers and remove others surgically, even on the same patient.

Until the mid-1980s, in many areas of the country, a woman who found a lump in her breast would be referred to a surgeon, who would operate to

make the diagnosis, and if the [frozen section](#) came back positive for cancer, perform a mastectomy under the same anesthesia. Whether the procedure was a [Halsted](#) or a [modified radical mastectomy](#) depended mostly on when the surgeon trained.

In some developing nations, what treatment a patient received for a given cancer depended entirely on which service he or she happened to be referred to: the radiotherapy service provided radiation, the chemotherapy service gave chemotherapy, and the surgical service performed surgery. Use of multiple modalities may not ever have occurred to the treating physician.

With development of the newer modality of chemotherapy and the increasing complexity of radiation therapy (post development of supervoltage radiation machines), multidisciplinary management has become essential. A multidisciplinary breast clinic provides a model of such an approach. A patient may come in because she found a lump in her breast, or because of a suspicious finding on a routine screening mammogram. A diagnostic radiologist specializing in diseases of the breast will review the mammogram and perform an ultrasound if indicated. A breast surgeon or the breast radiologist will perform a needle aspiration biopsy, a breast [cytologist](#) will read the slides and the patient will be informed of the diagnosis, usually within several hours of arriving in the clinic.

She may then be scheduled for further workup, if indicated, and a series of appointments (in a single session) to be assessed by and to discuss treatment options with a radiation oncologist, medical oncologist and surgeon, possibly with the assistance of a nurse practitioner/patient advocate, a psycho-oncologist and a geneticist. After these appointments, the multi-disciplinary group ([Tumor Board](#)) will meet and establish a joint treatment recommendation, based on the clinical situation, [National Comprehensive Cancer Network \(NCCN\) Guidelines](#)



and/or other evidence based guidelines, and the patient's previously expressed desires. Afterwards, the patient meets her team providers usually in this single session, and consensus is established that day, so care is expedited.

Tumor Boards provide the more commonly used model for modern multidisciplinary management of cancers. A large cancer program may have 10 or more site or disease specific Tumor Boards, while a small hospital may have a single general Tumor Board for all malignancies. During the board meeting, the patient is presented by a physician who has seen him/her, a diagnostic radiologist presents the relevant radiographs and a pathologist presents the pathology slides. Sometimes new findings come to light during this review. All the physicians in attendance, especially the treatment modality representatives, discuss the case and come up with staging and treatment recommendations, based on the current medical literature, institutional practices, and clinical trial availability. In an urgent situation, the discussion may take place informally between two or three physicians.

One of the physicians will contact the patient, discuss the recommendation of the Tumor Board, and schedule the definitive surgery as agreed upon by the team and the patient. If a clinical trial is available for the patient's disease and stage, that option would be discussed with the patient as well. The multi-disciplinary team of physicians that the patient initially met will then deliver whatever treatment has been decided upon by the patient. During the patient's treatment course, appointments and communication between treating physicians may be facilitated by a patient navigator, who is often a nurse. National surveys done in England show that the patient experience of care is also improved when delivered by a multidisciplinary team.¹

In this model, all of the disciplines are represented, often by physicians with subspecialty expertise in the particular disease in question, and treatment decisions are made collectively, while the treatments are actually delivered by the individual specialties. [Supportive care](#) will usually be delivered by whichever physician is actively treating the patient at the time, or in the case of concomitant therapy, whichever physician is available at the time need arises. But for advanced disease, a palliative care specialist may become part of the team and provide the supportive care. For advanced lung cancer, early inclusion of palliative care has been demonstrated to prolong survival.²

This multidisciplinary team approach is particularly important in a condition such as early breast cancer or prostate cancer, for which there are multiple reasonable treatment options, with equivalent outcomes and different acute and late effects. It has become the standard of care in the United States for breast cancer; it is far less often used in prostate cancer. As an example, superior survival has been demonstrated with trimodality therapy of non-small cell [Pancoast tumors](#) of the lung. And trimodality therapy is multidisciplinary by definition. There is also survey data that suggests that working in a multidisciplinary team improves both job satisfaction and the well-being of team members.¹

Multidisciplinary Management in the Palliative Care Setting & the Hospice Setting

Palliative care conferences and hospice conferences may resemble tumor boards, except social workers, pharmacists, nurses, nurse practitioners and chaplains will attend, but often only one physician, a palliative care specialist or perhaps a primary care doctor will be present. The role of all of the patient care professionals is vital, and early involvement of the palliative care team has been shown to decrease cost of care.³ Yet multidisciplinary care is also indicated for the management of metastatic malignancy⁴, either while it is in the chronic phase, or when the disease is rapidly progressing and coming to a conclusion. Surgeons, radiation oncologists, medical oncologists, psycho-oncologists and interventional pain specialists all have a role to play in palliative management of cancer patients.

While metastases are progressing slowly, it may be reasonable to resect them, or irradiate them to tumoricidal doses rather than palliative doses. For example, resection of lung metastases from soft tissue sarcomas or radiosurgery for even a few brain metastases may both result in long-term survival, sometimes with multiple repeated treatments for subsequent lesions. Chemotherapy, biologic agents and hormonal manipulation may improve physical symptoms and slow progression of disease. And, while not all cancer patients experience pain, all of the treatment modalities may be used to treat the anatomic cause of cancer pain or relieve pain.

Once it is clear that the disease is rapidly progressing, palliative radiotherapy, palliative chemotherapy and even palliative surgery may contribute to maintenance of the patient's quality of life, and these options may not occur to a treating primary care or palliative care



physician. Further, the assistance of an interventional pain specialist may be required. In addition, these patients usually require, to a greater or a lesser extent, the support of nurses, a chaplain, a social worker, a pharmacist and health aides. Thus, a multidisciplinary, team approach to oncologic palliation is also indicated.

Conclusion

Modern management of malignancy requires multidisciplinary management throughout the course of illness. Multidisciplinary management ensures accurate staging, provides evidence based treatment recommendations, expedites treatment, and also leads to improved patient satisfaction and improved team member experience.¹

Thought Questions

1. A 65 year old man presents to his primary care physician with the complaint of a sore throat. On exam, he is found to have a 1.2 cm nodule at the base of his tongue. He is referred to an otolaryngologist who performs a needle biopsy of the nodule which shows squamous cell carcinoma.

A) What might the otolaryngologist suggest next?

Your answer

Expert Answer:

B) Three days after hearing the otolaryngologist's recommendations, the patient sees a radiation oncologist and then, one week later, sees a medical oncologist. How might their recommendations differ from the otolaryngologist's?

Your answer

Expert Answer:

C) What is the advantage of the patient seeing all three specialists on the same day in one clinic?

Your answer

Expert Answer:



2. At the present time, most patients with Stage IIIA non-small cell lung cancer have options for treatment. They could undergo surgery to remove their primary tumor together with bronchial and mediastinal lymph nodes and then, after recovering from surgery, could receive chemotherapy to try to prevent tumor relapse. Alternatively, their initial treatment could be with concomitant chemotherapy and thoracic radiation, followed in selected cases by thoracic surgery.

What information is needed to make a reasonable decision?

Your answer

Expert Answer:

Glossary

Clinical trial- A prospective medical study of a specific intervention for a particular disease state. See: <http://www.clinicaltrials.gov/ct2/about-studies/learn>

Cytologist- A pathologist with special training in reading cytopathology (cell smear) slides

Frozen section- A biopsy sent from the operating room to a nearby pathology laboratory, where it will be flash frozen and examined under a microscope by a pathologist for rapid preliminary diagnosis.

Halsted procedure- Also known as the radical mastectomy, this procedure involves the surgical removal of the entire breast, pectoral muscles, axillary lymph nodes and all fat, fascia and adjacent tissues.

Modified radical mastectomy- Surgical removal of the breast, most of the axillary lymph nodes and the lining over the pectoralis major muscle. The pectoralis major muscle is spared.

Orthovoltage radiation- X-ray treatment with energies in the 200–500 keV range. Penetration of the x-rays do not go more than a few millimeters beyond the surface of the skin.

Pancoast tumor- A tumor of the apex of the lung, usually non-small cell carcinoma

Quality of life- Patient's well-being. Physicians usually refer to physical wellbeing, but psychological and spiritual wellbeing enters into quality of life as well.

Supportive care- Medical management of side effects of treatment or symptoms of the treatment. This includes psycho-social support.

Tumor board- A meeting of representatives of different specialties that diagnosis and treat cancer to discuss the appropriate staging and treatment of patients with cancer whose cases are presented to the board.

Tumoricidal- Destroying tumor cells



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