Multidisciplinary Tumor Boards and Guiding Patient Care: The AP Role

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Abstract

The history of multidisciplinary tumor boards extends to more than 50 years ago. At JADPRO Live Virtual 2021, presenters discussed the evidence-based impact of tumor boards on patient outcomes and patient-centered care, reviewed benefits and limitations of multidisciplinary tumor boards, and explained the potential role of advanced practitioners in tumor boards in a variety of oncology practice types.

Discussion of cancer cases in a multidisciplinary setting goes back more than a century, but in recent decades, multidisciplinary tumors boards (MTBs) have taken on a greater role in cancer care as the field grows in complexity. During JADPRO Live Virtual 2021, Joan Okasako, MSN, FNP-BC, RN, AOCNP®, and Carolyn Bernstein, MSN, FNP-BC, RN, discussed the evidence-based impact of tumor boards on patient outcomes and patient-centered care and explained the potential role of advanced practitioners in tumor boards in a variety of oncology practice types.

BACKGROUND

The National Cancer Institute defines an MTB as a treatment planning approach in which a group of health-care professionals, who are experts in different specialties, review and discuss the medical condition and treatment options of patients. According to Ms. Okasako, a nurse practitioner specializing in hematology/oncology at Kaiser Permanente San Francisco, the goal of the MTB is to provide the highest quality patient care according to evidence-based guidelines.

"Before the 1990s, only a small portion of cancer patients benefitted from their care being managed by a multidisciplinary tumor board cancer specialist," said Ms. Okasako. "Cancer care was mainly directed by generalists without expertise in any one particular cancer, and staff often worked in isolation without direct discussion between disciplines...Multidisciplinary tumor boards were established to overcome these challenges."

Ms. Bernstein, a nurse practitioner specializing in hematology/oncology at Kaiser Permanente San

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Rafael, noted that the American College of Surgeons Commission on Cancer accreditation process requires that facilities have MTBs. In addition, multidisciplinary physician attendance at a general cancer conference must include representatives from surgery, pathology, radiology, radiation oncology, and medical oncology. Another accreditation body from the American College of Surgeons, the National Accreditation Program for Breast Centers, mandates that a multidisciplinary breast care conference must meet regularly and include representatives from surgery, medical oncology, radiation oncology, pathology, and radiology. Multidisciplinary care is now mandated in 63% of European countries, said Ms. Bernstein.

LITERATURE REVIEW

As Ms. Okasako reported, a literature review of MTBs has identified direct effects on the management of cancer. A study at Johns Hopkins of patients presented at a neuro-oncology MTB, for example, showed that 59% of patients had changes in clinical management and 22% had changes in image presentation (Khanna et al., 2021). Multidisciplinary tumor board patients also had significantly shorter wait times between the referral and the first clinic visit.

An Australian study of lung cancer patients who were and were not presented at MTB meetings found that MTB patients were more likely to have received chemotherapy, radiation therapy, and palliative care (Boxer et al., 2011). Patients in the MTB group with stage IV disease were also more likely to receive chemotherapy, although presentation at the MTB did not improve survival, said Ms. Okasako.

A study from Germany also reported no significant difference in response to treatment and overall survival in patients who presented at the MTB vs. those who did not. However, results of the study showed that patients who presented at three MTBs or more showed greater overall survival (Freytag et al., 2020).

In addition, a study in the United Kingdom among colorectal patients showed an increase in patients undergoing adjuvant chemotherapy after the establishment of an MTB, which led to improved 3-year survival (MacDermid et al., 2009). Multidisciplinary tumor boards also prompted a trend towards subspecialization and the increased use of MRI for preoperative staging in colorectal patients, said Ms. Okasako.

Finally, a retrospective study of all gastrointestinal cancer patients at Saudi Arabia Cancer Center diagnosed between 2017 and 2019 found that overall mortality at 2 years was 13% for patients presented at an MTB group vs. 38% in the non-MTB group (Basendowah et al., 2021). There was no difference in morbidity between the two groups measured by ICU, hospital stay, or admission rates. The authors of the study concluded that MTBs were associated with decreased mortality over time and should be incorporated into care.

BENEFITS AND LIMITATIONS

According to Ms. Bernstein, MTBs benefit patients via improved adherence to clinical guidelines and a better system for quality review. Oncologists who are managing rare tumors are also reassured to know that they can bring their cases before the tumor board, which can lead to improvements in decision-making and quality of information as well as promotion of teamwork.

"Because most of our disciplines practice in different departments, we don't get to see each other," said Ms. Bernstein. "The tumor board is really the only time of the week that we convene, even though we're all part of this multidisciplinary team."

Tumor boards also lead to improved follow-up, which can be enormously beneficial for cancer survivors, said Ms. Bernstein, and they are associated with improvements in clinical trial screening and recruitment.

Conversely, the large time commitment and the economic cost of tumor boards represent limitations.

"There is a lot of preparation that goes into these meetings, and there are administrative costs," Ms. Bernstein acknowledged. "We run our tumor board during lunch, which is one way to control cost."

According to Ms. Bernstein, the lack of significant impact on outcomes is another limitation, and excessive but not strictly clinical information can lead to contrasting opinions. There are also legal issues with confidentiality and the risk of treatment delays.

VIRTUAL TUMOR BOARDS

As Ms. Okasako explained, the COVID-19 pandemic changed the delivery platform of MTBs from in person to virtual. The Department of Head and Neck Cancer at the University of Pittsburgh Medical Center evaluated their experience and found that most attendees preferred the virtual format and wanted it to continue, even with in-person meetings now occurring (Dharmarajan et al., 2020). However, the attendees also reported decreased camaraderie. Authors of the study noted that the virtual format can allowed for improved collaboration between providers at distant sites and proper allocation of health-care resources in a time of crisis.

Remote technologies may also help providers deal with challenges in rural cancer care. According to Ms. Okasako, although 19% of the US population lives in rural areas, only 7% of oncologists practice in rural areas, and 38% of rural cancer cases were diagnosed in the South. The incidence of cancer may be higher in urban regions, said Ms. Okasako, but death rates are higher in rural areas.

"Rural patients are often diagnosed at later stages and are less likely to receive standard-of-care treatment, follow-up, and supportive care, and they have worse health outcomes during survivorship," she said.

In 2013, the Kaiser Permanente Sarcoma Tumor Board established a virtual multidisciplinary sarcoma care conference with a team of experts who regularly review cases for treatment recommendations. These meetings now occur weekly and are attended by members all over the country. The sarcoma MTB team includes musculoskeletal radiology, pathology, medical oncology, radiation oncology, nuclear medicine, surgical oncology, pediatric oncology, and genetics. Results of an internal survey showed that most attendees felt that the virtual multidisciplinary sarcoma care conference improved quality of care as well as the confluence of the treatment providers.

A regional MTB for testicular cancer established by Kaiser Permanente in northern California has also yielded positive feedback. Analysis of the program showed an increased proportion of stage 1 seminoma patients followed by observation vs. adjuvant chemotherapy or radiation therapy. Kaiser Permanente also reported a change in treatment plans with MTB review of pathology and imaging. Approximately 15% of MTB patients had up-staging of their cancer, and a review of pathology resulted in 6% of patients having a change in plan from observation to adjuvant chemotherapy. Review of radiology also detected lymphadenopathy in 8% of the cases.

"Since the initiation of case conference, it has been day and night," said one member of the tumor board. "Right now, even if the patient is seen by a local oncologist, there is clear, specific guidance from an expert group."

WHAT IS DISCUSSED AT A TUMOR BOARD?

As Ms. Bernstein explained, the MTB at Kaiser Permanent San Rafael usually begins with clinical presentations of the cases by the surgeons, who have often seen the patients first in the case of breast cancer.

"Clinical presentation is when we get the story about the lead-up to the diagnosis, and we may see pictures from the surgery visit, which is really interesting," she said. "It's very helpful to get the backstory and hear from the surgeons who see the patients from the beginning."

Imaging findings are then presented by the radiologist, who typically shows multiple pictures, including past mammograms and ultrasound findings.

"This is where the reports really come alive," said Ms. Bernstein. "We're reading reports all day, but it's important to hear from the specialists about what they're seeing that's concerning."

After pathology findings are shared, treating clinicians bring specific questions to the multidisciplinary team (e.g., "Should this lymph node be removed?" or "Does this older patient need an axillary lymph node dissection?"). Other surgeons or medical oncologists on the team will then offer their clinical opinion.

Psychosocial issues are also discussed by the palliative care social worker and the breast cancer coordinator, who explores the potential impact of treatment decisions. Finally, said Ms. Bernstein, a treatment plan is devised together, ensuring that everyone is on the same page and that the patient is receiving the optimal care.

Disclosure

The presenters had no conflicts of interest to disclose.

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