Radioactive ‘seeds’ attack tumor site but leave tissue healthy

Neurosurgeons at The University of Kansas Hospital are pioneering a more effective, safer approach to fighting brain cancer – offering new hope to patients with certain types of tumors.

Neurosurgery Chair Paul Camarata, MD, and a collaborative clinical team scored a medical first in the Midwest last month by performing cesium brachytherapy to treat Janice Witthuhn’s recurrent brain tumor. Camarata implanted ultrathin strands holding tiny radioactive “seeds” in the spot where he’d just removed her tumor. Two days later, the patient was headed home to Hays, Kan.

Only six other U.S. hospitals have treated certain malignant brain tumors with the procedure, which uses a newly available radioactive material, cesium 131. Neurosurgeon Tim Ryken, MD, and Neuro-Oncology Director Fen Wang, MD, PhD, flew to New York to watch experts at Cornell University perform the procedure.

Camarata calls the new approach a “revolutionary tool” to treat metastatic brain cancer. Cornell reported astounding results with a small study of metastatic brain cancer patients: At 18 months, the 24 patients showed no recurrence of brain cancer.

Equally important, none experienced radiation necrosis, a complication that occurs when over-radiated tissue dies, causing brain swelling. Witthuhn’s tumor was near her brain stem. Radiation necrosis could have affected her ability to walk and move her limbs, as well as her balance and gaze.

Previously, brain-related brachytherapy was performed as a follow-up surgery, once the tumor was removed and the site had started to heal.

“The process was fairly cumbersome, and the rate of radiation necrosis was fairly high because of the different radioisotope used,” Camarata noted. “Cesium brachytherapy is much simpler, with less risk of infection because the strands are laid in right when the tumor is removed.”

The new procedure also delivers cancer-killing radiation immediately, unlike the previous method.

He also said it’s safer for the patient, physicians and patient’s loved ones. With a half-life of only 9.7 days compared to 60 days for iodine 125 – the radioisotope commonly used previously – cesium 131 works faster and in a shorter time frame, requiring fewer seeds.

By the Numbers: Fireworks injuries

Last year, 45 percent of Kansas hospitals completed voluntary surveys about fireworks injuries.

158 Total reported fireworks injuries in Kansas

Injuries by gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td>75%</td>
<td>65%</td>
</tr>
<tr>
<td>Females</td>
<td>25%</td>
<td>35%</td>
</tr>
</tbody>
</table>

Injuries by age group

<table>
<thead>
<tr>
<th>Age Group</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-12</td>
<td>9%</td>
<td>54%</td>
</tr>
<tr>
<td>13-17</td>
<td>37%</td>
<td></td>
</tr>
<tr>
<td>18+</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Injury by location

- Face 34%
- Hand 39%
- Other 27%

The risk of sparklers

- Sparklers burn 1,200°F
- Glass melts 900°F
- Wood burns 575°F
- Cake bakes 350°F
- Water boils 212°F

No deaths in Kansas were reported in 2014, but there were 10 instances of traumatic amputation.

Sparklers accounted for 41% of U.S. fireworks injuries in 2013.
Events

Supporting the supporters – Join with others to hear how they respond to the emotional roller coaster of being a healthcare “supporter,” and learn practical ways to manage the feelings that go with it. Other topics include resilience and the importance of self-care. The session is 2:30-4:30 p.m. Tuesday, July 7, at Turning Point: The Center for Hope and Healing in Leawood. Call 913-574-0900 to register.

Families coping with illness – How are your kids dealing with illness in your family? Participants (ages 4 through teenagers) are placed in groups based on age, where they meet other kids in similar situations, express feelings and improve coping skills. An adult group meets at the same time. The program is 6-7:30 p.m. Thursdays, July 9-23, at Turning Point: The Center for Hope and Healing in Leawood. Call 913-574-0900 to register.

Living in the present – Increase your ability to experience the richness of a “mindfulness practice.” Learn about mindfulness research and how this practical tool can increase positive feelings and antibody responses to immune system challenges, reduce anxiety and enhance mood and cognition. The hands-on class, held in partnership with Gilda’s Club Kansas City, is 5:30-7 p.m. Monday, July 20, at Medical Plaza North in North Kansas City. Call 913-574-0900 to register.

Blood drive – The Community Blood Center’s next blood drive at the main campus is 9 a.m.-4 p.m. Wednesday, July 22, in the Student Center’s Francisco Lounge. Walk-ins are welcome. The center is the primary supplier of blood to patients at The University of Kansas Hospital.

More events are at kumed.com/event-detail.

PROGRAM SPOTLIGHT

Burn, Trauma teams: Fireworks ready

While most people are enjoying Fourth of July festivities, dozens of caregivers at The University of Kansas Hospital are standing watch.

They are specially trained in treating patients who have suffered burns and trauma, which account for the majority of the 11,000 U.S. fireworks-related injuries each year.

“We plan for this holiday for several months,” said Jennifer Parks, RN, the hospital’s trauma and burn performance improvement coordinator. “We not only ensure there is adequate staffing but that everyone is aware how the process works. There is a lot of collaboration among many departments.”

Last year the hospital treated 30 patients with fireworks injuries. While the number isn’t large, the types of injuries require significant personnel to be available – not only trauma and burn specialists, but physicians in orthopedics and ophthalmology, since most fireworks injuries are to the hands and face.

Another Fourth of July process is the hospital’s “Fast-track” system in the Emergency Department. During the three-day holiday, certain caregivers – physicians, nurses and hydrotherapy technicians, all burn care experts – are designated to respond immediately to anyone arriving in the ED with a fireworks injury.

What’s more, the hospital’s Outpatient Burn and Wound Care Center keeps its schedule as open as possible for several days after the three-day weekend, allowing those patients to receive quick follow-up care.

Preparing for the Fourth also includes hours of community outreach, such as presentations with area fire departments about the dangers of sparklers, Roman candles and things that explode.

After seeing firsthand the injuries such devices can cause, do Trauma and Burn staff dread this time of year? “Not at all,” Parks said. “This is what we do every day. We have a passion to care for these patients.”

EXPOSURE

Inspired by young adults

Approximately 50 young bicyclists visited The University of Kansas Cancer Center’s North and Westwood locations last week, bringing smiles to patients, families and staff. Part of The Ulman Cancer Fund for Young Adults (ulmanfund.org), the bicyclists are on a cross-country tour raising money for cancer patient care. At Westwood they presented a $2,500 scholarship to a former patient, then joined cancer center staff, such as Elizabeth Luder, by swabbing their cheeks to be analyzed for a bone marrow registry drive. Approximately 50 people met the donor criteria.
In the News

A recap of recent articles, TV segments and other media coverage of the region's leading academic medical center

► Hospital leader promotes excellence – Lawrence Journal-World, June 27. In an editorial, the newspaper paid tribute to Bob Honse, outgoing chairman of The University of Kansas Hospital Authority Board. Honse and four others were honored at the hospital's June 16 Hall of Fame celebration (see this week's Advances insert). "He has a friendly manner, but he can be a hard driver when he believes there are ways to improve the hospital or when someone is not measuring up," the newspaper wrote. "The hospital and its patients, as well as Kansas and the greater Kansas City area, all have benefited from Honse's leadership."

► The debate about liver donations – Al Jazeera America, June 23. Surgeon Sean Kumer, MD, PhD, and hepatologist Richard Gilroy, MD, explained why The University of Kansas Hospital is helping lead opposition to a proposal that would change the way donated livers are allocated in the U.S. The plan would send more livers from the Midwest, where donation rates are high, to areas with lower donation rates. The change is like "moving chairs on the Titanic," Kumer said, noting a better solution is to focus on promoting more organ donations everywhere.

► Long-term benefits of exercise – WebMD, June 22. Exercise can help trim waistlines and firm arms and legs, but John Thyfault, PhD, associate professor in molecular and integrative physiology at the University of Kansas Medical Center, emphasizes the long-term connection between activity and better living. "Exercise and physical activity is not something you just do extra in your life to get extra healthy," he said. "Rather, it's something that's absolutely necessary for normal function."

► ADHD medication for menopausal women? – Health24, June 15. Vyvanse, a drug marketed for attention deficit hyperactivity disorder, could improve memory and concentration problems associated with menopause, new research suggests. But the study, which involved 32 women, might be too small to determine the drug's safety, said Kevin Ault, MD, an obstetrician-gynecologist at the University of Kansas Medical Center. "One of the problems with having a small study like this is you're not going to see the big picture with side effects," he said.

News Briefs

Hospitals coordinate during annual drill

Nearly 30 area hospitals on June 18 participated in an annual disaster drill involving a frightening scenario: An imaginary railcar filled with chlorine derailed and ruptured near a school. The two-hour drill tested hospitals’ ability to coordinate and communicate during the disaster, as well as triage, decontaminate and stabilize an influx of patients who need decontamination and medical treatment.

Dozens of employees at The University of Kansas Hospital were involved in the drill, which evaluated six critical emergency management functions. Staff had to complete certain tasks, acquire supplies and respond to critical events.

“The exercise is always a great opportunity for emergency management and hospital leaders to identify strengths and areas for improvement,” said Ted Arnett, our hospital’s emergency preparedness manager. “It helps us better prepare to keep our patients and staff safe during a real event.”

Honors for neuroscience care, research

Several neuroscience programs at The University of Kansas Hospital have received national honors for their high levels of patient care and research:

• Stroke – The hospital received the Stroke Gold Plus Quality Achievement Award and was named to the Target: Stroke Honor Roll Elite. The accolades reflect the program’s compliance with recommended stroke guidelines and ability to treat patients quickly with clot-busting medications.

• Parkinson’s disease – The Parkinson’s Disease and Movement Disorder Center at the hospital and medical center is celebrating its re-certification as a National Parkinson Foundation Center of Excellence. The center is one of 26 in the U.S. and 41 worldwide to earn the designation. Centers must meet rigorous criteria for research, staff education, patient care and outreach services.

• Epilepsy – The hospital’s Comprehensive Epilepsy Center again has received a Level 4 designation, the industry’s highest mark. The epilepsy center first received the top designation in 2012 from the National Association of Epilepsy Centers. Level 4 centers have the professional expertise and facilities to provide the highest-level medical and surgical evaluation and treatment for patients with complex epilepsy.

Medical center is ‘Certified Healthy KC’

The University of Kansas Medical Center is one of 47 area organizations named a Certified Healthy KC Company. The designation by the Kansas City Chamber of Commerce recognizes employers’ efforts to create a workplace focused on health and wellness. Certification is based on four pillars of health: nutrition, physical activity, tobacco cessation and work/life integration. Among its initiatives, the medical center last year launched A Healthy U program for employees, which includes classes and challenges that promote exercise and good nutrition.
Our People

Resident's compassion, dedication – Every quarter, nurses at The University of Kansas Hospital recognize a resident who displays excellence in medical practice.

Internal Medicine’s Anthony Dominick, DO, was nominated by Bailey Mars, RN.

The latest recipient of the Outstanding Resident Award is Internal Medicine’s Anthony Dominick, DO, praised for the compassion he displayed toward a family in the final hours of their son’s life, and for his close work with a team of nurses throughout the difficult weekend.

The physician listened to nurses and discussed his decisions with them, continually evaluated the patient’s condition and tended to them, continually evaluated the family’s concerns. “I saw a wonderful physician who genuinely cared about the patient, the patient’s family and the nurses involved,” wrote Bailey Mars, RN, who nominated Dominick on behalf of Hematology/Oncology Units 41/42/45.

“He showed outstanding dedication and truly made an impact not only on the patient and their family, but also the nursing team,” she added. “Dr. Dominick made the difference in a grieving family’s life.”

Celebrating nursing excellence – The University of Kansas Hospital this spring honored its 2015 Nursing Excellence Award winners. The annual ceremony includes 14 categories: nine nursing awards, four nursing support awards and one social work award. Congratulations to the winners!

Nursing
- Expert Clinical Nurse – Evan Atherton, RN, Unit 64
- Expert Nurse Leader – Miki Mahinke, RN, Unit 64
- Nurse Innovator – Greta Price, RN, Education and Development
- Nurse Mentor – Heather O’Connor, RN, Mother/Baby
- Nurse Patient and Family Advocate – Cherie Adair, RN, Spine Center
- Nurse Patient and Family Educator – Jill Kouts, RN, Concussion
- Nurse Preceptor – Hannah Anderson, RN, Cardiothoracic Surgery Progressive Care
- Outstanding New Graduate Nurse – Elizabeth Simmons, RN, Inpatient Dialysis
- The University of Kansas Hospital Magnet Nurse of the Year – Maria Fox, RN, Nursing Clinical Excellence

Nursing Support Staff
- Administrative Assistant – Anita Alexander, Main OR
- Healthcare Technician – Travis Hoffman, Cardiothoracic Surgery Progressive Care
- Patient Care Assistant – AP Johnson, Unit 53
- Unit Secretary – Keely Belknap, Main Pre-Post

Social Work
- Social Work Patient and Family Advocate – Tiffany Moore

Grant supports breast cancer research – Priyanka Sharma, MD, a member of the Drug Discovery, Delivery and Experimental Therapeutics Program at The University of Kansas Cancer Center, has received the 2015 Advanced Clinical Research Award in Breast Cancer from the Conquer Cancer Foundation and ASCO. Only one such award is given each year. The $450,000 grant, which is allocated over three years, is for her research, “Evaluation of BRCA2 phenotype as a potential prognostic marker.”

Sharma examines “BRCA2-ness” – deficiency in a mechanism that helps damaged DNA fix itself – in triple-negative breast cancer as a potential prognostic marker. Triple-negative breast cancer and cancers that arise in patients with BRCA1 mutations share several molecular similarities.

Top ranking for nurse anesthetist – Paul Bennetts, PhD, CRNA, a clinical assistant professor of nurse anesthesia at the University of Kansas School of Health Professions, has been named one of the top 20 outstanding professors of nurse anesthesia by Nurse Practitioner Schools.

Nurse anesthetists are a special designation of nurses called CRNAs (Certified Registered Nurse Anesthetists). According to the American Association of Nurse Anesthetists, these highly trained nurses administer more than 30 million anesthetics to patients each year.

As the director of research in Nurse Anesthesia Education, Bennetts brings his high standard for clinical investigation to a new generation of researchers. In addition, his experience as a nurse anesthetist for the U.S. Army Reserves (Operation Desert Storm) has been integral to his interest in ambulatory anesthetics.

His primary clinical responsibility is in teaching cardiothoracic anesthesia in The University of Kansas Hospital’s Center for Advanced Heart Care.

Find your place in the shade
Skin cancer is the most common of all cancers, affecting 1 in 5 Americans.

Protect yourself from the sun
Examine your skin regularly. Check for changes in new/existing moles. Use SPF 30 or higher sunscreen.

Learn more at kucancercenter.org/skincheck.
913-588-1227