American Healthcare Professionals and Friends for Medicine in Israel
2001 Beacon Street, Suite 210, Boston, MA 02135

Dr. Tomer Charas takes aim at genitourinary cancers with two very specifically sharpened arrows from the oncology quiver – external beam radiation therapy (EBRT) and brachytherapy.

EBRT -- an external source of high-energy radiation narrowly focused at cancerous tissue.

BRACHYTHERAPY -- an internal sealed radiation source placed inside or next to the area requiring treatment – sometimes known as "seed implantation."

The 38-year-old Haifa native is a 2016-2017 APF Genitourinary Radiation Oncology Clinical Fellow at Memorial Sloan Kettering Cancer Center in New York.

"It's a truly rewarding field where you can actually witness a real curative effect," he says. "Seeing a patient I've treated five years ago and they're still alive and doing great, with few or no side effects, is very gratifying."

Charas is an attending physician in radiation oncology at Rambam Health Care Campus in Haifa and is part of its inter-departmental uro-oncology team.

He is also a busy instructor teaching: medical students, interns, residents and nursing and radiation technology students as well as delivering public lectures.

"I love teaching," he says. "It keeps you on your toes and up-to-date on learning of your own. It shows you new views and the ways new brilliant practitioners' minds think, as well as how the public thinks. I truly enjoy these encounters."

In fact, he recently graduated from a highly selective one-year course at nearby Technion designed to train physicians to become better teachers.

The Charas family, five including Dad, hails from Haifa. They are: Mom Yael, 37, a special education teacher; daughters Shani, 8 and Noga, 1 and son Roi, 6. Sloan Kettering provides housing and the older children attend public school. So far the family has traveled all over New York City, to upstate New York, The Poconos and to Disneyworld. They love the snow (especially tubing and hiking) and local parks.

In high school Charas loved science courses and majored in biology. "Learning from books and journals was fascinating." But a unique experience in his senior year really shaped his destiny.

"I did a two-month "observership" with the father of a friend of mine, a surgeon. I saw how he approached patients, how respectful and calm he was, how he treated them. He was much beloved. And I had many talks with him about the healthcare system and becoming a doctor. The more I talked with him the more excited I became about joining the profession."

After IDF service in the military police, where he says he really sharpened his "people skills," he attended medical school at Semmelweis University in Budapest, Hungary.

"I didn't get into an Israeli medical school and decided to go abroad. Semmelweis was very well-known and had English courses. One-third of my class was Israeli!"

From there he did his internship at Carmel Medical Center in Haifa and residency at Rambam.

How did he get to radiation oncology?

“At first I was sure I was going to be a surgeon like my friend’s father. In medical school I even did extra clinical work in surgery.

“But during my internship at a smaller “community” hospital, I found I was attracted to oncology. This was my first real exposure to the specialty. I met with some oncologists and soon became more familiar with the field. When the time came for talks and seminars to be delivered, I was drawn to oncology topics. I did extra studying and chose to speak and focus mainly on cancer research and publications.

“Eventually I realized that if I wanted to truly experience oncology I needed to do it in a tertiary medical center such as Rambam. And so I did just that, choosing the oncology division at Rambam for my residency.”

There he met Dr. Abraham Kuten, then chairman of Rambam’s division of oncology. Kuten, a radiation oncologist, soon became his mentor.

“I saw the patients and our abilities as physicians – what we are able to do for them and how we affect their lives. I also enjoyed the environment of the department; the teamwork was very committed. I saw that the residents were energetic and happy to work there, that there was a lot of support from the attendings and nurses and that the facilities were excellent. It was (and still is) a very supportive and encouraging place to learn and evolve as a doctor.

“I was captivated by the whole oncology set-up at Rambam.”

About six months into residency Charas chose to specialize in radiation oncology. “I had many conversations with my mentor about the field and patient care. I found him to be a real role model as a human being, scholar and physician. He had an amazing way of understanding patients’ needs and went to great lengths to meet them. Also, as I mentioned, my experience thus far had been very good.

“Radiation oncology is mainly using radiation, in a very precise way, to target tumors and spare healthy tissue -- a concept I really like. (In genitourinary cancers, tissue-sparing may limit side effects such as urinary incontinence and may preserve sexual and bowel function.) You really have to know anatomy, biology, chemistry, physiology, physics and more. You must know how to read scans and understand them very well. But most challenging is knowing cancers very well – how they behave, how they progress, how they affect people’s lives. And, of course, you must learn how to implement radiation very well.”

The oncology field is divided between medical oncology and radiation oncology, he says. “Medical oncologists treat with medications and radiation oncologists treat with radiation. Some cancers, however, are treated with both.”

While oncology may be seen as a grim field in which to practice, Charas believes radiation oncology to be a rather upbeat arena and growing more so all the time. That’s another reason he selected it.

“Radiation oncology is about treating a lot of cancer patients that can be cured. Right now in 80 percent of the cases, we are dealing with patients in order to cure them, as opposed to medical oncology, where a lot of the patients are metastatic and cannot be cured. In radiation oncology we do see metastatic patients, but far fewer of them.”

Charas also loves the fast-moving learning curve of his chosen field. “Things I learned my first year were wrong by my third or fifth year. Every day we see something new and career-wise it’s much more fun to have a field that’s constantly evolving. New technologies are always coming out and it’s encouraging; it drives me forward.”

Your fellowship is in genitourinary cancers. Which organs does this involve? “It involves primarily the bladder, kidneys, prostate and testicles.”

Did you have to leave Israel for this education?

“Yes, there is no such fellowship training available at home.”

Why Sloan Kettering?

"I considered several places in the U.S. and Canada, but Sloan Kettering was my No. 1 choice. My mentor here, Michael J. Zelefsky, vice chairman of the department of radiation oncology, is one of the world leaders in the field of genitourinary cancers and radiation therapy. He is also the chief of Sloan Kettering's brachytherapy service. Zelefsky and his team have developed innovative treatment approaches and, generally speaking, a lot of the advancements in radiation therapy are due to centers like Sloan Kettering.

"It's known world-wide in the oncology community that this is a place to be. It's definitely top of the line – in research, patient care, personnel and facilities. There are so many opportunities for young serious physicians to expand their abilities.

"For example, compared to Israel procedure-wise, I am involved in 10 times the number of brachytherapy procedures than back home. And clinic-wise, I see about double the number of patients.

"Also, many patients come here from all over the world and you get to see cases already seen by other physicians. You have to think "outside the box" here because the usual standard of care has already failed. We succeed by offering something new, something more advanced, something better than what they had before. It's amazing to see how that's done."

Charas is also studying very advanced forms of EBRT including Stereotactic Body Radiation Therapy (SBRT). SBRT is a technique using very high doses of radiation with several beams of various intensities aimed at different angles to precisely target a tumor.

And he's learning more about using high- and low-dose rate radiation in brachytherapy treatment for prostate cancer. "While I have some experience with low-dose rate brachytherapy, I have very little experience with high-dose rate, which is done differently.

"Every day I learn something new. It makes all of the hardship worthwhile for me."

Hardship? Is it very intense, long hours?

"Oh yes, both. I'm exhausted when I get home and sometimes don't see my children before work or before bed – my poor wife!

"My hours are between 7 a.m. and 8 p.m. five days a week, the majority of which I spend seeing patients in the clinic and working in the operating room.

"I see 10 to 12 new cases a week and follow 20 to 30 patients a week who've already undergone treatment. In the operating room I do between three and five procedures a week. I rotate among three senior attendings who specialize in genitourinary cancers. And I will soon rotate in the urology department."

Charas gave an example of a patient he recently treated.

"I cared for a 55-year-old with prostate cancer that was more on the aggressive side, but fortunately confined to the prostate. We evaluated him with several imaging modalities, including MRI, and offered him a combination treatment of brachytherapy and EBRT. The protocol started with brachytherapy and two weeks later EBRT was administered.

"I just saw him on a follow-up visit and he's doing great. We repeated the imaging and it showed that the cancer is gone, and his blood marker is normalized. Any significant side effects resolved after three months and he is having no sexual issues. (Sexual issues sometimes show up about eight years after treatment.) This is a great outcome."

Charas's schedule must also accommodate rounds, presentations and other educational meetings and conferences.

About one day or 20 percent of his week is cleared (although not officially) for clinical research. Charas has published nine articles and has had one accepted from his Sloan Kettering work. He has

another under revision and plans for a few more by the end of his New York year.

What does he hope to take back to Israel from his fellowship experience?

“I hope to make more of these treatments available to more people in Israel, but also with a higher level of quality – like what I’ve seen in the U.S.

“For example some services, like brachytherapy, are offered in Israel, but are currently done in a less advanced fashion and with less quality assurance. Some treatments are not accessible to all patients. Other treatments are not offered at all, such as SBRT for prostate cancer.

“My goal is to have learned from the best and to take these tools home and spearhead new programs. The programs will make these treatments more available, thus providing better patient care, improving health outcomes and allowing the knowledge I have acquired to be transferred to other physicians and staff. I want top-of-the-line for Israel.”