LEADING EDGE

THE Faces OF BIDMC

Mark Zeidel, M.D., became chair of the Department of Medicine on July 1, 2005.

Q What brought you to Beth Israel Deaconess?
A I was actually born at Beth Israel. I grew up in the community. I worked here when I was a fellow. I worked with BI residents as a resident at the Brigham, and when I was a fellow I rotated over here clinically. When the opportunity to lead the Department of Medicine came up, I was not in Pittsburgh running a department of medicine there. I was excited about the idea of coming back home but also about the great strength of this department and the opportunity to make the department really lift off. Those reasons were incredibly compelling to me.

Q What are some of the challenges facing the department?

A At no hospital in Boston right now do you get an appointment right away. At this hospital, you will. We’re going to work hard so that when anyone calls to be seen by any doctor, the response of the scheduler is, ‘we will be happy to see you tomorrow.’

Q What are your goals for the department?
A We’re doing a lot; we need to do more. You can’t be a superb teaching or research institution unless you’re really good clinically. You have no right to teach anyone how to be a doctor unless you are a terrific doctor. We have terrific doctors here. We’re going to work very hard to make sure that every time, everywhere, every way the patient sees a doctor, they see a terrific doctor. We have terrific doctors here. We’re going to work very hard to make sure that every time, everywhere, every way the quality of care is the highest in the world. We’re very passionate about that.

Q What do you feel is the Department of Medicine’s greatest strength?

A The only asset a department has is its people, and we have absolutely fabulous faculty members in every area: wonderful teachers, wonderful clinicians, and wonderful researchers. The caliber of people is just terrific. We have a superb talent pool coursing through the medical center, and the key is to develop the talent pool and make them into the next generation of superb investigators, clinicians, and teachers.

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Sox Doc: Worth an arm and a leg

Most Red Sox fans can only shake their heads and sigh when a player goes down with an injury. Arun Ramappa, M.D., actually gets to do something about it. In addition to being an orthopedic surgeon at Beth Israel Deaconess, Ramappa is also the orthopedic consultant to the Boston Red Sox, studying and treating the shoulder, elbow, and knee injuries common in baseball.

When he came to BIDMC in the fall of 2004, Ramappa had recently finished a fellowship in sports medicine at the Steadman Hawkins Clinic in Colorado, a leader in sports medicine and orthopedics. It’s no coincidence that he ended up in a city known for both its world-class medicine and its passion for baseball. He says, “During the process of interviewing, at the various places that I interviewed around the country, one of the key parts of my decision making process was to ascertain how feasible it would be for me to be involved with helping to care for a baseball team.”

Even though there was no opening for an orthopedist at the Red Sox when Ramappa interviewed at BIDMC, he was drawn by the energy of the medical center’s orthopedics department. “I wanted to join a practice where I’d be able to be in an environment of young, vibrant surgeons and colleagues, where the highest quality care is provided, teaching is emphasized, where pushing the envelope is emphasized—a place like this,” he states. “In particular, I was drawn by Mark Gebhardt, who is the chairman of our department. I knew what kind of leader he was, and what kind of vision he has. That was one of the main reasons why I came, because I saw the opportunity here.”

Since Gebhardt joined the medical center in 2003, the Department of Orthopedics has grown dramatically. Nationally and internationally recognized orthopedic surgeons have joined the department, including experts in sports medicine and shoulder surgery, joint replacement, trauma surgery, and orthopedic oncology. Ramappa is quick to praise his colleagues. “It’s a very young, vibrant department, and it’s a pleasure to work among such talented individuals. They’re not only great colleagues, but also wonderful people.”

In addition to his orthopedic duties, Ramappa is also the co-director of medical research for the Red Sox. He and his colleagues are studying common baseball-related orthopedic problems, such as rotator cuff injuries, labral tears of the shoulder, and elbow ligament injuries in the hopes of ascertaining what sorts of issues players are inclined to experience and determining methods to prevent and more effectively treat both chronic and acute injuries. Their goal is to improve player performance and increase career longevity.

Ramappa is a lifelong baseball fan, having grown up in Florida following teams such as the Red Sox, Yankees, and Cubs during spring training. He says of baseball, “I always found it very intriguing. It’s so synonymous with summer. It’s such an American game. Some people find it slow, but I find it a thinking man’s game. I don’t think there’s a sporting event that’s more engrossing than a closely played playoff baseball game.” He recounts a story of being called in to the hospital during game three of last year’s ALCS and receiving game updates while in the operating room. Even after that game, he says, “I really believed, looking at the lineup, at the match ups, that the Red Sox were going to go to Game 7. Fortunately, the best team won.”

CyberKnife: Honing in on cancer with new technologies

IT SOUNDS LIKE SCIENCE FICTION: a machine that targets tumors anywhere in the body and destroys them without surgery. But this technology, known as the CyberKnife System, is very real and now located at Beth Israel Deaconess Medical Center.

The CyberKnife works by delivering concentrated beams of radiation from many angles to only the tumor site. Since its radiation is targeted directly to the tumor, exposure and damage to surrounding healthy tissue is minimized. The CyberKnife’s advanced guidance system uses X-rays and image-guided cameras to precisely monitor and confirm the tumor’s location before delivering the beam of radiation. This amazing accuracy allows the machine to treat tumors in difficult-to-reach areas such as the brain, spine, lung, and pancreas, including tumors that were previously considered untreatable because of the surgical risks.

The new Keith C. Field CyberKnife Center houses this remarkable machine. Gloria Adelson Field, Keith Field’s widow, says of the CyberKnife, “It’s amazing. It’s a shame that the hospital didn’t have it at the time my husband had to go daily for 37 days, for over seven weeks, for radiation. Since the CyberKnife only targets the tumor and doesn’t damage other parts of the body, he might have been alive today. Meanwhile, hopefully it will save many other lives in the future. Amazingly, a cousin of ours was one of the first to be treated with it.”

After losing her husband to lung cancer, Mrs. Field began the Keith C. Field Cancer Treatment Fund. The CyberKnife’s purchase and the creation of its new center were made possible through the generosity of Gloria Field’s brother and sister-in-law, Sheldon G. Adelson and M iriam Adelson, M.D., and other family and close friends. When the Adelsons heard about the possibility of bringing the CyberKnife to BIDMC, they felt that it would be a golden opportunity to honor their brother-in-law’s memory. Says Mr. Adelson, “We knew that this technology would help many people live longer and better lives. We’re glad to know that Keith’s memory will live on in such a meaningful way.”

Mrs. Field and her husband were patients of Beth Israel Deaconess for many years. She says that she has been very pleased with the quality of care that they received, and she continues to receive, and hopes that the CyberKnife will bring hope and healing to many patients who are in need of this novel technology.

Can I make a planned gift to BIDMC that pays me income?

Bequests are one type of planned gift, but there are also types of gift plans that pay you income for the rest of your life. BIDMC life income gifts often offer higher income than bank CD or stock dividend rates. A life income gift also offers you an immediate tax deduction, an annual income for life, and the knowledge that you have made a gift to support the medical center’s important work.

For more information on life income gifts or to request a sample calculation to fit your circumstances, contact: Greta Morgan, Director of Planned Giving, at 617-667-7395, or gmorgan@bidmc.harvard.edu.
Cell High
Stem cell research soars to new heights as scientists work to unleash its clinical potential

“It’s just a completely undefined cell,” says Bing Lim, M.D., Ph.D. “But it’s got a lot of potential.” Lim, a hematologic researcher at BIDMC for almost two decades, is referring to the embryonic stem cell’s capacity to differentiate into virtually any cell in the body. Yet, he could just as easily be describing stem cells’ promise to transform the way we treat some of the most complex and serious diseases of our time. While this enigmatic and sometimes-controversial cell has enticed basic scientists at the medical center for years, its recent thrust into the limelight has reinvigorated hopes that their work will get the attention—and support—necessary to understand what makes a stem cell tick and ultimately realize its clinical potential.

Stem cells are the wellspring from which all the body’s tissues arise. As cells in our body are damaged or die off, they are replenished in a process of division and differentiation that we are only beginning to appreciate. The term “stem” comes from the branching of a plant or tree, representing the paths a cell might take in becoming one with a specific structure and function. At the “roots,” the cell is embryonic and has unlimited potential for what it might turn into, but once it’s ventured out on a branch, say of the nervous or cardiovascular system, there’s no going back—it can only become a cell within that system. In some of the body’s tissues, this slightly more “grown-up” cell, with the ability to transform itself into even more specific cell types, is called an adult stem cell.

Understanding just how the stem cell makes this progression to maturity is one of the biggest hurdles this field faces in making the leap from the lab to the patient. BIDMC’s vision is to kick off a new era of regenerative medicine in which diseased organs and tissues can be restored using living replacements cultivated from stem cells. However, being able to manipulate these cells for therapeutic purposes will require fundamental knowledge of how they manage the process themselves. “It’s not just the understanding of how the cells differentiate, but also the engineering component,” notes Lim. “The engineering component is a whole different aspect: how to organize the cells and how to put them together in a way to form the kind of tissues that become useful.”

BIDMC researchers are looking at the complex combination of growth factors and chemical and genetic signals that drive the process. Intrigued by how drug protocols for leukemia were conceived as a resident, Lim began to study the basic biology of hematopoietic stem cells—those found in the bone marrow—and has led his lab in the discovery of a number of novel genes that control their function. Christopher Walsh, M.D., Ph.D., a BIDMC neurogeneticist, has a similar interest in what drives the process of stem cell division and differentiation in the brain. His lab has also uncovered new genes, which are vital in determining how neural stem cells create the normal size and structure of the cerebral cortex. “Every kind of cell in the brain makes a decision: OK, I’m done, I should stop dividing now,” says Walsh, “and control of that decision is the key to understanding how we can make the brain regenerate.”

Regenerating brain tissue was once the stuff of science fiction, but today stem cell science seems to offer the potential for making medical fantasy a reality. “It seems fantastic to me still, but it does seem to work in our animal models,” says James Morgan, M.D., Ph.D., a cardiovascular specialist at BIDMC, of using stem cells to build new muscle in damaged hearts. Four years ago, Morgan told a fellow who wanted to experiment with stem cells in his lab’s heart failure models not to waste too much time with the idea. In the end, the results were “so spectacular,” Morgan recalls, that today stem cell research is 95 percent of what his lab does. “I can really see how this therapy is potentially much more effective than anything we have available today.”

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Enter the Enteroologists

Ram Chuttani, M.D., director of the endoscopy program in the Department of Gastroenterology, is helping to share BIDMC’s expertise in sophisticated GI techniques with physicians worldwide.

Beth Israel Deaconess’s position as a leader in endoscopic procedures led Chuttani to initiate the Harvard Live Endoscopy Course six years ago, which then expanded to the Boston International Live Endoscopy Course. The course, which is generously sponsored by Boston Scientific Corporation and Olympus Corporation, features hands-on training simulations in endoscopy techniques and live satellite transmission of over 60 complex endoscopy cases performed by Chuttani, Douglas Pleskow, M.D., fellow colleagues at BIDMC as well as other major Boston hospitals and international experts. Now one of the premier endoscopy courses in the world, the weekend-long course attracts physicians from all over the United States and around the globe. This year, a live satellite transmission featuring pioneering endoscopic techniques will be broadcast from Tokyo, Japan. Says Chuttani, “It’s very exciting. This year, we’re also going to transmit the conference to Brazil, so that South American gastroenterologists can participate.”

The annual conference grew out of smaller seminars that Chuttani first started when he was at Boston Medical Center. When he came to Beth Israel Deaconess in 1995, Chuttani and Pleskow began inviting five to ten new physicians biweekly to view the innovative procedures taking place in the department. Chuttani credits these conferences with building the department’s reputation in the Boston medical community and beyond. He says, “The physicians who came were extremely appreciative that we taught them new techniques and how to manage difficult cases. This helped build strong connections with the community physicians. Physicians got to know us not just for how well we did cases but also for how we talked and interacted with their patients and their patients’ families. It made a huge impact.”

This collaborative spirit extends into the plans for the department’s expansion. The planned Center for Advanced Endoscopy, in addition to offering the latest technology and treatment, will also “be a focus of teaching, and research, where we will have a large conference room where physicians from around the world will be able to watch, with our patients’ permission, as we do these advanced procedures. Hence, they will be able to learn these new technologies and take them back to their home countries.”

The first issue for someone who suspects migraine is an accurate diagnosis. Diagnosis depends heavily on history, but abnormal findings on physical examination are also important. Migraine is common and usually familial. As many as 20 percent of the adult female child-bearing population have migraine, and an association with fluctuating levels of estrogen is likely what makes women more susceptible. No test exists for migraine, but the headaches do tend to have certain characteristics that set them apart from other types, including intermittent attacks, throbbing pain, aura, photosensitivity, skin sensitivity, nausea, and vomiting. Even if you experience some of these symptoms, however, it is important to consult a neurologist to properly diagnose, and subsequently treat, migraine and to ensure that this is not a secondary headache.

If you are diagnosed as having migraine, a variety of approaches may be recommended depending upon your history and symptoms. For one, adjusting your daily activities to avoid common triggers—stress or conversely the abrupt relief of stress)—irregular meals, certain foods, and erratic sleep patterns—is always a good start. Symptomatic treatment of the headache can range from ibuprofen, which abates work, to a new class of synthetic drugs called triptans, which are remarkably effective if taken early before the hypersensitivity that Rami studies kicks in. If the headaches are very frequent and disrupting normal life, a variety of drugs can be used prophylactically to reduce their frequency. There’s even evidence now that the cosmetic phenomenon Botox improves migraine pain.

You don’t need to suffer—consult your doctor!

Have a medical question of your own? Send it to: “Ask the Expert” at amolley@bidmc.harvard.edu.