Jeffrey S. Heier, MD

Dr. Heier is Director of the Vitreoretinal Service at Ophthalmic Consultants of Boston (OCB), and Director of Retinal Research and Codirector of the Vitreoretinal Fellowship at OCB/Tufts Medical School in Boston. He is a member of the *Retina Today* editorial board.

1. What was your experience like serving as a physician in a Combat Support Hospital in the Persian Gulf War, and how has it affected your approach to medicine?

My time in the Persian Gulf represents both what I am most proud of in my past and what I least want to ever do again. I was the junior physician in a 300-person, 18-doctor Combat Support Hospital stationed initially in the Saudi desert, then supporting the ground forces in Kuwait and Iraq. I was only months out of internship, yet my responsibilities included running sick call and the emergency department, serving as the fourth internist, and overseeing all nonsurgical eye emergencies (I had completed several ophthalmology rotations). The junior physicians, myself included, worked long hours, typically 14 to 18 hour days. I quickly learned the importance of compartmentalizing and hard work, shuffling my varied responsibilities throughout the day. I enjoyed overseeing the emergency department, sick call, and eye emergencies, and I developed the discipline and focus to ensure that each received the appropriate attention.

Although our hospital was never under direct fire, we did trail infantry divisions into Iraq and were close enough to the fighting to provide direct support. One always wonders how he or she will handle adversity, and each of us was proud to serve our country and do so with honor. Several of us received the Bronze Star Medal for our service, an honor I cherish to this day. My time in the Persian Gulf War taught me the value and reward of undertaking multiple activities, the need to focus on each one individually to accomplish a goal, and the contribution of seemingly unrelated efforts increasing the value of one's efforts as a whole.

2. In your opinion, what areas of retinal research hold the greatest promise for new therapies or modalities?

The advances we have seen over the past decade in the management of retinal diseases are nothing short of remarkable. Our ability to take care of exudative and proliferative diseases such as age-related macular degeneration (AMD), diabetic retinopathy, and venous occlusive disease has been dramatically altered with current anti-VEGF agents. However, if you had asked clinical researchers in 2005 (when the initial phase 3 ranibizumab [Lucentis, Genentech] results were presented) where we would be today with regard to dry AMD (geographic atrophy), I think, across the board, we would have expected to have at least 1 or 2 agents close to approval. Nonexudative AMD, including geographic atrophy and extensive soft drusen, represents an ideal target for new therapies. Researchers have designed approaches ranging from visual cycle modulators to complement inhibitors. To date, we have not unequivocally identified a target capable of manipulation. However, efforts are continuing and, in many cases, intensifying. With regard to exudative diseases such as AMD, the need to decrease treatment burden remains a top priority. Approaches include anti-VEGF agents with longer durability, extended-release strategies, and even gene therapy. Finally, we are actually starting to see early successes with stem cell research, and while a great deal of work remains, for the first time the concept of a viable stem cell approach to advanced disease with irreversible loss may be in sight.

3. Having participated in several clinical trials, which has been most rewarding?

I have been involved in more than 50 clinical trials, for many of which I served as either a clinical advisor or on the steering committee. Each trial has been rewarding in its own way, allowing patients the opportunity to receive treatment for diseases that either have no acceptable treatment, have not responded well to conventional therapy, or offered the potential for increased efficacy or durability. I am extremely selective when it comes to choosing to participate in a trial, always approaching the study from the patient's perspective.

These thoughts aside, without a doubt, the most rewarding trial I participated in was the early phase 2 Genentech trial that was the first to offer patients multiple injections of the drug that ultimately became ranibizumab. The first 5 patients treated in the trial were from OCB, and each of them demonstrated a response that was remarkable. I will never forget 1 of these patients, an elderly woman who had recently given up her driver's license, as her vision had decreased rapidly to 20/100. Three days after her initial injection, she was back to 20/40 and was able to regain

her license and drive again. This wonderful woman was ready to sell her home and move into assisted living, but she retained her ability to care for herself and remained living in her home until she passed away several years later. Subsequent anti-VEGF trials, including those for ranibizumab and aflibercept (Eylea, Regeneron), were extremely rewarding, but none offered the realization that the way we treated medical retinal diseases had just taken a dramatic turn for the better.

4. What is your most memorable experience in surgery?

My most memorable surgical experience occurred about 2 years ago. An 11-year-old boy with a history of Reiger syndrome and minimal vision in his fellow eye secondary to retinal detachment presented with a recent detachment and decreased vision to 20/200. The view to the retina was hampered by the corneal disease, and the patient's cornea specialist did not feel a transplant was likely to work due to his underlying disease. I had been operating for several years with an endoscope for just these types of cases. The young patient's detachment was successfully managed with an endoscopic repair, and, to this day, he enjoys a relatively normal life, working hard in school, spending time with friends, giving his mom the normal angst a teenage boy is supposed to give his parents. His mom never fails to accompany him for his follow-ups and never leaves without giving me a big hug, her silent tears often falling on my face. It is our ability to make a difference, to help those who otherwise couldn't see and live normally, that make our profession so special.

5. In what hobbies do you partake when you are not working?

As you can probably guess from the above, I don't have a great deal of spare time, but all that I do is dedicated to my family. I have 2 beautiful daughters and a beautiful wife of more than 30 years, and I try to spend every free minute with them. My daughters are beautiful dancers, both graduating from Boston Ballet's pre-professional program, one of whom is now a trainee at Boston Ballet and about to embark on a professional career, the other of whom is a junior in college but is still dancing. My wife and I rarely miss a performance, cherishing each time they are on stage. We travel frequently as a family or in pairs (I often take one of the girls with me when I speak overseas). We make certain to take several trips together every year, trying to experience new lands as well as those familiar to us. I am also an avid Boston sports fan, whether it be the Red Sox (sadly), the Patriots, the Celtics, or the Bruins. Fortunately, my family not only tolerates my love of sports, but also often shares it with me. ■