

Steve Holcomb's Olympian effort: back on track after keratoconus

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Ophthalmologist helps bobsled driver nab Olympic gold

When Steve Holcomb came hurtling down the Olympic track piloting his four-man bobsled the "Night-Train," to its historic gold-medal victory, there was at least parenthetically a fifth man aboard—Brian S. Boxer Wachler, M.D., director, Boxer Wachler Vision Institute, Los Angeles, who helped to save the Olympian's sight with his ground-breaking C3-R keratoconus procedure. This remarkable Olympic moment not only ended a 62-year draught for the U.S. Olympic bobsled team but was the fairytale ending that just a few years earlier seemed an impossible dream.

Forced to retire

Before coming to see Dr. Boxer Wachler, Mr. Holcomb's keratoconus had progressed to the point where he was no longer able to wear contact lenses to successfully correct his myopia any longer. "He was performing and living based upon his uncorrected vision," said Dr. Boxer Wachler. "At that point, in June of 2007 he had retired from bobsledding because of his vision. He just felt that it wasn't safe any more." Mr. Holcomb wasn't as much concerned for himself as for his teammates. "As the driver, he is actually the safest person in the sled compared to everyone else," Dr. Boxer Wachler said. "He felt that he couldn't live with himself if something happened to his teammates while driving the sled as a result of his vision."

His coach and his teammates, however, had other ideas. "They didn't want him to retire because up until that point he was the best driver they had ever had," Dr. Boxer Wachler said. "They wanted to do something to fix his vision, other than a corneal transplant, which would have taken him out of the sport anyway even though it would have restored his cornea." With such a transplant he would have been waylaid from sledding for 2 years while recovering—a lapse which would have been a career ender. Even if miraculously that had not stopped him there



Dr. Boxer Wachler punks Steve Holcolm during final Olympic eye check at press conference



Dr. Boxer Wachler and Steve Holcolm after "the Night-Train" crossed the finish line



Dr. Boxer Wachler and Steve Holcolm hugging after the Olympic gold-winning race
Source: Brian S. Boxer Wachler, M.D.

would have been too many concerns about the harsh nature of the sport on the transplant. "There is so much jarring and trauma I don't think that his team and his coach would have been comfortable with him [continuing to pilot]," Dr. Boxer Wachler said. "So he had resigned himself to retiring."

That's when they contacted Dr. Boxer Wachler who had been at the forefront of alternative keratoconus treatment. Among other things, he was the first practitioner in the U.S. to use Intacs (Addition Technology, Des Plaines, Ill.) to correct keratoconus and had also published a book titled *Modern Management of Keratoconus*.

Opting for C3-R treatment

For the world-class athlete, Dr. Boxer Wachler recommended a non-invasive collagen cross-linking surface procedure, which he had pioneered and with which he had had success in the past. "I suggested using C3-R, which is a riboflavin application in conjunction with UV [ultraviolet] light," Dr. Boxer Wachler said. "That was able to stabilize and improve his cornea and then three months later I implanted the Visian ICL (implantable collamer lens, STAAR Surgical, Monrovia, Calif.) to correct his myopia."

With the 30-minute, in-office C3-R procedure, Dr. Boxer Wachler applied the riboflavin eye drops to Mr. Holcomb's cornea and activated this with the UV light. This method reinforces the eye by increasing the natural crosslinked collagen anchors within the cornea. "It was able to reinforce the collagen fibers and stabilize and in his case result in improvement to the vision," Dr. Boxer Wachler said.

Dr. Boxer Wachler's technique is a non-invasive cousin to the epi-removal collagen crosslinking treatment that others have used, which involves scraping off the epithelial layer before applying treatment. While the approach is not in Food and Drug Administration trials, over the past 6 years, Dr. Boxer Wachler's results with the non-invasive technique have been extremely promising. "Our results have essentially been equivalent to the epi-removal crosslinking technique," he said. "We've have had good long-term stability and a retreatment rate that's about 1%."

In addition, complications with the procedure have been virtually non-existent. "We really haven't had the complications that you see with epithelial removal crosslinking such as infection, hazing, pain, delayed epithelial healing, and corneal desensitivity," he said. "For some patients the vision will be foggy for the rest of the day of the procedure, but by the next morning that fogginess is gone." In some cases there can be some scratchiness and for those with basement membrane dystrophy a little epithelial defect, but Dr. Boxer Wachler finds that there is nothing more serious.

For Mr. Holcomb the treatment proved to be the answer. "Afterward he came out of retirement and started racing again," Dr. Boxer Wachler said. "Then one year later he won the World Bobsled Championship, which the U.S. had not done in 50 years. Then he made history again in winning Olympic gold which the U.S. had not done in 62 years."

Dr. Boxer Wachler sees this story as much more than sporting event footnote or a simple ophthalmic case. "It's really a story about overcoming adversity to triumph," he said. "There are teenagers and people in college who are hearing this story and it's so memorable and so powerful that who knows how it's going to inspire them in whatever they do—to me that goes way beyond an ophthalmology patient who was treated"

He will never forget the moment when Olympic history was made. "I was there with my family and when Steve won, when the Night Train crossed the finish line I started crying," Dr. Boxer Wachler said. "It was really emotional for everyone knowing what he has been through and what he has come out of." Dr. Boxer Wachler remains modest about his own role here. "The experience itself and knowing that I played a role and have been part of the team so to speak has been very humbling," he said. This experience is one that others will not soon forget. In a sense, Dr. Boxer Wachler was not only on Mr. Holcomb's team but also helped to nab Olympic gold for unsung ophthalmic practitioners everywhere.