

From Designers to Shriners: 3-D Body Scanning a Promising New Technology

According to staff at Shriners Hospitals for Children—Springfield, the hospital is the first in the U.S. to pilot the use of a 3-D body scanner, a tool frequently used in the textile and garment industries to accurately assess how clothing fits. This new medical technology may significantly influence treatment and evaluation for children with spinal and chest wall deformities, such as scoliosis and pectus excavatum.

The traditional method for evaluating the severity of scoliosis is an X-ray-based measure called the Cobb Angle. The Cobb Angle measures the lateral curvature of the spine inside the body, and is used to plan treatments, such as bracing and surgery, and evaluate results.

However, the Cobb Angle does not look at the curvature of the spine in all directions, or how the curvature affects the shape of the back and chest wall or posture. Scoliosis treatment is directed at correcting the curvature of the spine, but how this affects the appearance of the outside of the body is not routinely measured.

“The 3-D body scanner lets us see what’s happening to the shape of the body,” said George E. Gorton III, director of the Springfield hospital’s Clinical Outcomes Assessment Laboratory. “X-rays don’t capture that.”

By scanning a patient’s body and creating a “digital twin” on a computer screen, the 3-D body scan-

ner gives doctors the ability to objectively document the child’s alignment, posture, balance and other external features before and after correction procedures. The technology is a fast, repeatable and non-invasive way to get customized measurements,



ABOVE: The 3-D body scanner resembles a dressing room. The patient stands in the center, and within 15 seconds, four eye-safe lasers and eight synchronized cameras scan the body.

RIGHT: The scanner produces a 3-D surface map, which is transformed into a “digital twin” on a computer screen. The image is dissectible on various levels and gives accurate measurements within several millimeters.

including distances, circumferences and angles of the shoulders, ribs, hips and other body parts without using X-rays.

Body appearance is typically of great concern to children with scoliosis, who are most frequently girls between ages 10 and 15. Because spinal and chest wall deformities and correction procedures affect body shape, the Springfield Hospital is also studying patients’ satisfaction with physical appearance.



Every child with a spinal or chest wall deformity seen in the Clinical Outcomes Assessment Laboratory at the Springfield Hospital completes a questionnaire relating to quality of life and satisfaction.

“The 3-D body scanner may be able to help us identify the features that cause the patient to be unhappy with his or her body,” said Gorton. “We may be able to find different ways to treat the deformities and improve body appearance and patient satisfaction, as well.”

Anaheim or Bust – Imperial Session Road Trip

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slapped me square in the face.

It was 10:30 AM, and the miles were beginning to add up quickly. We were working our way through East Fishkill, NY, and I remember looking in my rear view mirror and seeing Gerry right behind me but not seeing Doug. Having traveled with Doug on trips to Denver and Tampa it was not unusual for him, to fall a little behind. Usually a call on the radio and Doug would quickly catch up to the group. As this thought filled my mind I heard Gerry’s voice come over the radio and say, “Peter, I think we lost Doug.” My immediate reaction was to move over to the right hand lane, slow down and take a look back to see if Doug had caught up. After slowing for a short time, I looked back and still saw no sign of Doug. I said over the radio to Gerry “Let’s pull over and wait for him to catch up.”

While waiting underneath an overpass, Gerry commented on how there was no traffic coming. At the time it didn’t register in my mind that this was possibly the result of an accident and while we were waiting, contemplating those prophetic words, a car pulled up to the spot where we had stopped. The driver of the car got out, and approached us. He asked, “Are you riding with somebody else?” We replied we were and the driver said that he wasn’t sure if it was the same guy but a rider was “down on the side of the road.” At which time another car pulled up behind us. I walked over to see what the driver had to say. In the car was a woman who was crying and appeared quite shaken. She quickly grasped my hand in hers and tearfully said “I’m so sorry, I’m so sorry. He got hit by a car, he got hit by a car.”

Anyone who has ridden a motorcycle knows that when a rider gets hit by a car, the results are often fatal; or at a minimum the rider has a host of serious injuries. Although neither Gerry nor I spoke it, we both thought of the very real possibility that we would be going back to the accident scene to find Doug dead on the side of the road. As the shock of those thoughts registered in our minds, Gerry and I quickly got back on the bikes and quickly traveled to where Doug had gone down.

Although our return trip was only 10 – 12 minutes, by the time we had reached the scene emergency medical personnel were already on site and had already begun to examine Doug. Gerry was the first of us to reach him and although Doug was pale and his eyes were closed, Gerry was quick to ask “Doug how are you doing?” Upon which Doug’s eyes popped open and he replied “I’m OK, I think it’s only road rash.”

While the medical personnel attended to Doug, I walked the fifty yards down the highway to where Doug’s bike had come to a stop; all the while contemplating the magnitude of what had just happened. It was disconcerting to see most of Doug’s belongings strewn about the highway and his full-dressed Harley lying on its side in a ditch. A quick look at the bike confirmed the severity at which it had impacted the highway. The windshield had been completely torn off, the bike’s tour pack (trunk) had a hinge ripped completely off and the lid was eerily half open, spilling out the remainder of whatever contents had not already found the highway. The gas tank had two large dents on both sides where the impact of the bike tumbling down the road had violently slammed the handlebars into it. Every painted surface of the bike was badly damaged or completely destroyed. It was amazing that Doug survived such a severe impact and would live to talk about it.

By this time, Doug had been stabilized and was on his way to St. Francis Hospital in Poughkeepsie some 40 minutes from where we were. Gerry and I went about collecting Doug’s belongings and loading them into my trailer for safe keeping.

When we arrived at the hospital, the attendant at the registration desk told us they had taken Doug upstairs to have a CT scan done. After a few minutes, another nurse came out and told us we could visit Doug in the trauma room, where the doctor was examining him. The doctor told us that Doug was doing fine and although his results were not yet back the CT scan showed no internal injuries and that his only apparent injuries were some nasty road rash to his right leg and arm, a laceration on his left elbow that would require a few stitches, rode rash to his left forearm, back and left side. He had also suffered a concussion and would be kept in the hospital overnight for observation.

While we were still shocked at what happened, this bit of good news made it a whole lot easier to make the phone call back home to Doug’s wife Lois. I was amazed at how calm and collected she was when she heard the news. Lois told me she needed to make a few calls and arrange a way for someone to bring her and that she would call me back when she had a time when she expected to arrive.

One of the funny things about a concussion is that the patient often has no recollection of the events leading up to the injury. This was also true for Doug. While he could remember who Gerry and I were, he constantly asked “what the hell happened!” and really had no idea of where he was and how he got there. Although we repeated the story several times, Doug just was not able to remember



JUST A couple of photos to show the extent of the damage to Doug Dodge’s motorcycle after his accident in East Fishkill, NY. It is a total loss. This is the front fender, with a gouge in it! Doug is doing well and will be back in the saddle next year with his new bike.

any of it and to this day still doesn’t recall the accident. He couldn’t even remember having breakfast with us just a few hours before. Finally at 7:45 PM, Lois, Al Valente and his wife Debbie arrived at St. Francis Hospital.

With the end of visiting hours approaching, we said our goodbyes to Doug and wished him well in his recovery. Doug would be released the next morning and Lois, Al and Debbie would be taking him and the remains of his bike back home.

Finally, after a quick bite to eat at a local restaurant, Day 1 of the trip came to a close with our riding partner resting comfortably in his hospital bed and the shock and disbelief of what had occurred still on our faces. In all of the miles we have traveled together, none of us has ever had such a serious accident as this. We both hoped that the rest of the trip would not be like today and we would have much smoother sailing tomorrow.

To be continued.....

Look in the next issue of the Aleppo News for the next installment.