Maxillofacial surgery airs via Google Glass

First time the device is used to stream a dental procedure

By Javier de Pison
Dental Tribune Latin America

The medical applications of Google Glass — eyeglasses that can access the Internet, take pictures and record and stream audio and video in real time — were crystal clear when surgeons used them late this year for the first live streaming of a dental procedure.

Three dental surgeons at the Hospital de Molina in Murcia, Spain, conducted the historic maxillofacial procedure as part of a master class they were presenting. The team shared real-time perspective on the procedure live from the surgeon’s point of view using Google Glass, the wearable minicomputer that is currently available to a limited number of users on a trial basis through Google’s “Glass Explorer Program.” The glasses display Internet-accessed information within the wearer’s vision field in response to voice commands from the wearer. The technology was developed in Google’s X Lab, a research and development initiative investigating a range of futuristic technologies, such as the widely publicized driverless-car prototype.

The complex clinical procedure performed by Drs. Pedro Peña Martínez, Juan Francisco Piñeras Gómez and Alejandro López Gómez was part of the “3D Diagnostics and Treatment Surgery” course at the Dental Clinic of the Hospital de Molina, which provides advanced training to dentists from across Spain.

The surgery was performed on a 70-year-old patient with total edentulous maxilla using a computer-guided implant technique that Peña pioneered in Spain. The computer-guided surgery system helps surgeons plan and perform clinical procedures. A 3-D model of the patient’s upper jaw was made, which showed the position in which the implant would be placed.

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In foreground, Spanish maxillofacial surgeons Alejandro López, from left, Juan Francisco Piqueras and Pedro Peña (wearing the Glass), the first dentists to use Google Glass to stream a surgery live. Photo/Provided by the Dental Clinic of the Hospital de Molina.

By Daniel Zimmerman
Dental Tribune International

Few people are granted the opportunity to become an active part of historical events. Dr. Don T. Curtis, 76, a former dentist and oral surgeon from Amarillo, Texas, is one of them. On Nov. 22, 1963, as a 26-year-old resident in oral and maxillofacial surgery at Parkland Memorial Hospital in Dallas, Curtis was one of the first doctors to assist with emergency treatment efforts on President John F. Kennedy after Kennedy was shot. Dental Tribune International recently had the opportunity to speak with Curtis about that day and his perspective from 50 years later.

A film about the events at Parkland Memorial Hospital, produced by Tom Hanks and starring Billy Bob Thornton, was released near the 50th anniversary of the assassination. Do you think it stays true to the events?

I have not seen it, but I have heard criticism that it paints a rather sensationalized picture of the events. I guess I would go see it if it were shown here in Amarillo.

You began working at Parkland Memorial Hospital in 1963. What was your position? At that time, I was halfway through my first year of residency in oral and maxillofacial surgery. Before I took a residency there, I also completed an internship. I became interested in the field while working as a surgical technician in a general hospital during my time in dental school at the Texas A&M University Baylor College of Dentistry in Waco.

Were you aware of the president being in Dallas on Nov. 22, 1963?

I was not aware of that and was surprised when they brought him to the hospital. I had a surgery scheduled for later that day and was on my way to have lunch. The way to the lunchroom, however, required me to leave the building and walk across the receiving area of the emergency room, where I noticed police cars and the presidential limousine, which had blood on it and roses that were given to the first lady, Jacqueline Kennedy, when she arrived at the airport. When a policeman asked me whether I was a doctor, I said yes. He then replied that the president was hurt and escorted me to the trauma room where President Kennedy was.

In what condition was Kennedy when you arrived?

When I got there, it was obvious that the president was in extremis. He tried to breathe but was unable to do so. Dr. Charles James Carrico, a Parkland resident surgeon, had placed an endotracheal tube in an attempt at ventilation. However, that did not work because there was a blockage of the president’s airway, so Carrico decided to do a tracheostomy. I helped the nurse to undo the president’s tie and remove his shirt to prepare him for the procedure. Then Dr. Malcolm Perry, a senior surgeon, came into the room, and it was decided that he should do the tracheostomy. Dr. Carrico assisted Dr. Perry, and I performed a cut-down on the left leg to provide for intravenous replacement of blood. When I looked up later, the room was filled with the sensor chiefs of all surgical departments at Parkland. There were also some people I did not know.

Where you aware there had been an assassination attempt?

I was unaware of the nature of the injury.
... because his head was on a pillow and I could not see a wound. I remember the chief of neurosurgery, Dr. William Kemp Clark, rotating Kennedy’s head to the left, revealing that the posterior part of his skull had been radically fractured. He then said, “Stop. This injury is incompatible with life.”

What was the atmosphere in the room? It became very quiet. Nobody said anything.

Was there any chance that the president’s life could have been saved? Nothing that we did made a difference. Kennedy’s wound was clearly incompatible with life.

According to eyewitnesses, discussions broke out about who was authorized to do the autopsy. Did you recall seeing any of that? I did not, because I left the trauma room soon after the president had been pronounced dead and went back to the clinic to see my patient in the operating room. However, I found that all scheduled surgeries for that day had been canceled, and all patients had been sent back to the ward. Only a few surgeries were underway at that time, including that of Governor John Bowdren Connally, who had also been injured during the shooting.

Because there was nothing else for me to do, I then cleared my business in the clinic and went home. There, we spent the weekend watching television and listening to the news on the radio. We were relieved that President Lyndon B. Johnson was chosen to replace Kennedy.

Evaluating the official report. Did you see any irregularities in the official report in comparison to the events you witnessed?

Many Americans do not believe Oswald acted alone, as concluded by the Warren Commission investigation. Did you see any irregularities in the official report in comparison to the events you witnessed directly?

The Warren Commission’s report reflected what the people wanted to hear, which was that Oswald acted alone and that there was no conspiracy.

The doctors of Parkland, however, when wiping the blood from Kennedy’s neck for the tracheostomy found a single bullet hole that was apparently an entrance wound, which meant (there) must have been a projectile that entered the president from the front. Because of its nature, the wound on the back of Kennedy’s head was an exit wound, so there must have been at least two bullets that came through the front.

While all the doctors’ testimonies, including mine, were included in the report, their knowledge of the wounds did not have much influence on the commission’s overall conclusion. Why it was interpreted that way has remained a mystery for the past 50 years.

What do you believe actually happened that day?

My personal belief is that there were, of course, multiple shooters and that Oswald did not do it alone. This would indicate, however, that there was in fact a conspiracy.