The Evolution of Cataract Surgery

An international perspective.

BY ERIC J. ARNOTT, MA, FRCS, FRCOphth

“A leader takes people where they want to go. A great leader takes people where they don’t necessarily want to go but ought to be.”—Rosalynn Carter, US First Lady and Activist

Eric and Veronica Arnott were the royal couple of international ophthalmology. They possessed stunning grace, dignity, and dedication to worldwide vision. Eric trained under most of the famous British ophthalmologists, including Sir Harold Ridley, and Veronica helped him reach the pinnacle of international ophthalmology with her social prowess.

At Veronica’s urging, Eric opened a consulting practice on Harley Street in London. His extraordinary surgical skill and sensitivity to individual needs attracted patients from royal families, the world of politics, and the arts. He soon became one of the premier consultants in England.

In 1971, Eric became the first physician outside the US to take the phaco course offered by Charles Kelman, M D, in New York. Eric encountered extreme opposition when he began to perform the operation in conservative England. In 1974, he organized his own phaco course. He also visited Cornelius Binkhorst, M D, who convinced him that the combination of intraocular implants and phacoemulsification was the ultimate answer to aphakia. Eric conceived a new IOL that would eventually gain worldwide popularity. He propelled European ophthalmology into modern cataract surgery almost by himself.

I strongly recommend reading Eric’s remarkably detailed autobiography, A New Beginning in Sight, which he wrote with the assistance of his dedicated son, Stephen. The book is available at http://www.amazon.co.uk or directly through Stephen via e-mail at mail@stephenarnott.com.

—Herve M. Byron, MD

My work with phacoemulsification began unexpectedly. In 1969, my wife, Veronica, and I attended the Barraquer Clinical Symposium in Barcelona, Spain. It would have been a good, but not remarkable, symposium had I not stumbled upon a small group of surgeons listening to a discussion in one of the hotel’s conference rooms. As I entered the room, Richard Troutman, M D, made the following introduction from the dais: “Charlie has produced an operation which will take all the fun out of cataract surgery.”

A young, bronzed surgeon on his way back to the US after a vacation in Israel stood up to speak about his ultrasonic machine, which could be used to remove a cataractous lens through an incision no more than 3mm in extent. I sat spellbound, having witnessed that day cataract surgery performed by the world’s experts that involved an incision some four times longer. As with Harold Ridley’s invention of lens implantation, Charles Kelman, M D, was proposing a revolution, not evolution, in cataract surgery. That night, Veronica and I decided to ask Charlie to introduce us to phacoemulsification.

At that time, I was very much a part of the hierarchy of British ophthalmology and served as the secretary of our prestigious Ophthalmologic Society of the United Kingdom. In that role, I had the enviable job of choosing guests for the next year’s annual meeting. After Mr. Keith Lyle, the society’s president, opened the meeting in the spring of 1970, the guest of honor, Charlie, gave his presentation. It was his first lecture on phacoemulsification in Europe. Later, he, Veronica, and I attended the presidential dinner. Other guests included the Queen’s Oculist, Sir Stephen Miller, and Sir Harold Ridley (Figure 1).
EARLY PHACOEMULSIFICATION

In return for our hospitality, Charlie invited Veronica and me to the US. The trip was our introduction to American ophthalmology and included the first meeting of the AAO in Las Vegas (Figure 2). During that week, Charlie invited us to be among a few other pioneers to buy one of the Synergistic Phaco Machines.

We left the US enthusiastic but wondering how we could possibly buy a machine costing $75,000. Fortune smiled. A grateful patient purchased the unit for us. In midsummer 1971, the hospital’s administrator, Frank Hart, called us to say that the machine had arrived. It resembled a slightly battered, laden tea trolley. During unloading at Heathrow Airport, it had been dropped from the plane’s cargo hold onto the runway. Bill Freeman, a director of Synergistic, had to spend several days putting our Humpty Dumpty together again!

For several years, I was in the unusual position of owning the only phaco machine outside the US. On October 27, 1971, Veronica, Mike Kennedy (the British representative of Synergistic), and Alan Macmillan (the chief executive of the US company) joined me in the operating theatre of Charing Cross Hospital in London. The first phaco operation on a human patient outside of the US went without a hitch, save a clinically insignificant nicking of the iris by the phaco tip.

For several years, phaco courses were taught only in New York by Charlie, in California by Robert Sinskey, M D, and Richard Kratz, M D, and in London by me. We were all on each other’s faculties. Despite the excellent exposure, fewer than 10% of surgeons attending the courses initially adopted the procedure. For one thing, the operation required the use of a microscope, which only a small number of ophthalmologists employed. Moreover, phacoemulsification required surgical dexterity, a steep learning curve, and expensive equipment. Nevertheless, by 1978, several other European hospitals had phaco machines.

As my surgical practice grew (Figure 3), my position in British ophthalmology plummeted. With few exceptions, my elders shunned and disapproved of the change to phacoemulsification. During a top UK medal lecture, one of my older friends and a leading colleague said, “The use of the phaco machine for the removal of a cataractous lens is analogous to the shooting of game birds with guided missiles.”

A CONGRESS IN LONDON

When the FDA’s restrictions made it impossible for visiting surgeons to operate in the US, Bob Sinskey suggested hosting the Second International Congress of Phaco & Cataract Methodology at Charing Cross Hospital. A few top international surgeons were invited to perform live cataract surgery there. With a video link to the Intercontinental Hotel 6 miles away, a few hundred delegates would view the surgery.

When my turn came to operate, Charlie stood behind me and...
acted as moderator. A few minutes into the Kelman phaco operation, he said, “It is truly wonderful watching my operation being carried out so brilliantly, by one of my protégés. It would be impossible to—Eric, I am having some trouble reading your writing.”

The BBC and ITV News televised the full congress on the following day. The story held second place in the bulletin, after footage of President Jimmy Carter visiting his ancestral home in Washington, Yorkshire, England. The televised coverage introduced half of the UK to the concept of small-incision cataract surgery.

ONWARD TO ASIA

After the congress, Veronica and I joined the Kelmans for a weekend in Monte Carlo. One day, over lunch, Veronica said, “We have probably given one of the most innovative congresses ever held, but something was lacking. There was not a single Asian on the surgical committee or present as a guest.” Veronica and I therefore decided to take the procedure to India. Our first trip was 1 year later in 1979, and thus began our love affair with that country.

OPERATION EYEBALL

Understanding the difficulty of modernizing surgery without the finances for the necessary equipment, Veronica became involved in charitable commitments to the poorer countries of the world. She helped organize Operation Eyeball, in which our younger son, Robert, bicycled around the world with a friend, Steve Norton, in order to raise funds for ophthalmic charities. Starting in April 1994, they bicycled through France, Italy, Zimbabwe, Botswana, South Africa, Pakistan, India, Nepal, Thailand, Malaysia, Singapore, Australia, New Zealand, Japan, the US, Scotland, and England.

In October, Veronica and I flew to San Francisco for the AAO’s annual meeting, which fortuitously coincided with the arrival of Bob and Steve on their bicycles. We took over the Press Club in San Francisco and organized an Operation Eyeball evening to celebrate their fundraising achievement. Jack Dodick, MD, opened the ceremonies. Next, Bob and Steve told of their journey around the globe. As usual, Charlie played the saxophone and paid for the band. Bob Sinskey provided wine from his Napa Valley winery. Hundreds of our ophthalmic friends from around
the world attended.

By the time Bob and Steve arrived home on December 9, they had raised more than $200,000. All of the money was donated to ophthalmic causes, including the donation of equipment to hospitals such as the Edward VII in Midhurst, Surrey, UK. Funds also went to Lions International and St. John of Jerusalem Eye Hospital in East Jerusalem.

BACK TO INDIA

In 1997, Veronica and I were invited to introduce phaco surgery to an Indian hospital in Puttaparthi. We did not realize that we were entering the domain of the holy man, Shri Sai Baba. We met him several times on this visit, during which Veronica was inspired to make her last charitable commitment: the construction of a mobile phaco surgical unit to be used in the camps of India. At this time, eye camps had fallen into some disrepute, due to the high rate (up to 40%) of operative infection. A sterile mobile operating theatre offered one solution to this problem.

Jafar Askari, a grateful patient who owned a franchise for Mercedes Benz, pulled an Atego truck off the German assembly line. The Duke of Bedford loaned us the Safari Park in Woburn Abbey for a day. The Royal Navy allowed us the use of its base, HM S President, for one evening and included the use of its cadet bands. Another of our patients provided a curry dinner for our hundreds of guests.

By September 2000, the surgical unit was complete. After a farewell service at Trottsford, we watched as the Veronica Eye Unit began her long journey from England to India (Figure 4). Standing together on the lawn of our small farm, Veronica and I realized we were witnessing the launching of phacoemulsification into yet another remote area of the world.

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