Implant that let Raymond, 91, hear his granddaughter's voice for the very first time

IF HEARING aids don't work, then another potential option is a cochlear implant. Raymond Kelly, 91, a retired technical illustrator from New Malden, in South-West London, is thought to be the oldest patient in the world to have one fitted, as he tells DAVID HURST.

ME & MY OPERATION
COCHLEAR IMPLANT

THE PATIENT

SINCE a very young age, my hearing has been poor. Growing up, I suffered from ear infections, so I suspect they must have damaged the hearing mechanisms in some way, as I didn't have any specific ear diseases.

I had to see doctors to have the infections treated — but meanwhile, my hearing became progressively worse.

By my 30s, I was profoundly deaf in my right ear, which was beyond help, and the left was also declining, so I started wearing a hearing aid on that side. Large gatherings became difficult. I relied on facial gestures and lip-reading to follow conversations, or I'd ask people to write down what they were saying. I began to withdraw from meeting people.

Over the years, I managed as much as I could, using hearing aids and with help from my wife, Olivia, to whom I've been married for 57 years.

When the strongest hearing aids stopped working, I resigned myself to being profoundly deaf. I could only hear one-to-one conversations. Even then, the person had to have a clear voice and face me so I could lip-read.

Then, early last year, one of my daughters told me she'd read about cochlear implants. I'd never been told about these so, at my next check-up, I asked my audiologist about them.

While hearing aids amplify sound, cochlear implants stimulate the nerves to send electrical signals to the brain — mimicking normal hearing. The surgeons replace the damaged cochlea, part of the inner ear that plays a key role in hearing.

The audiologist thought I would be a suitable candidate and referred me to St George's Hospital in London, where I went two months later. After a few tests, my consultant confirmed a cochlear implant could help me regain some hearing in my left ear. He said he was offering a new, thinner implant.

THIS meant it was safer and easier to insert without a risk of damaging the delicate cells in the ear. It also had an electrode, which went into the natural cochlea, so it would restore more natural hearing (the electrode in traditional implants doesn't go right to the nerves).

I wasn't concerned about having surgery at the age of 90 — I was just desperate to regain some hearing. I underwent the two-hour operation in March last year under general anaesthetic and went home the next day feeling slightly sore.

I had to wait for ten days before doctors could switch on the implant because the tissue around it in the ear needed to heal first. Then I went back to hospital to have the external component fitted around my ear, and the internal implant was switched on. When I could finally hear, it felt incredible.

After decades of deafness, I could hear stairs creaking and clocks ticking, but it was listening to my great-granddaughter reading her storybook to me that I appreciated most. I can finally enjoy life with Olivia and our four daughters, ten grandchildren and two great-grandchildren. I feel safer, too.

I can't yet distinguish between different musical sounds, but I'm hopeful this will improve. It was a life-changing operation, and I couldn't be happier.

Picture: ALAMY

THE SURGEON

ROBERT HARRIS is a consultant ear, nose and throat surgeon at St George's University Hospitals NHS Foundation Trust in London.

THE cochlea in the inner ear converts vibrations from the eardrum into electrical signals that are transmitted to the brain, which we then hear.

In patients with a damaged cochlea — which can occur as a result of maternal infections or noise exposure, but often for unknown causes — no signals are transferred to the brain, and so they can't hear properly. A cochlear implant can help, as it takes over this role.

Unlike hearing aids, which simply amplify sound, cochlear implants channel soundwaves to bypass the damaged parts of the cochlea and directly stimulate the nerves to the brain.

More than 900,000 people in the UK are profoundly deaf, and many would benefit from a cochlear implant. Only around 800 adults and 450 children have them each year, but we suspect thousands more should, as many health professionals don't recognise their benefits.

The devices consist of internal and external components. The external component is the size of a hearing aid, is worn on the ear and has an attachment to the head. It processes sounds and converts them to electrical signals transmitted through the skin to the internal receiver. The receiver transmits these signals via electrodes to the auditory nerve to the brain.

A new type of implant makes the operation safer and hearing better. It is thinner, at less than 0.3mm compared with 0.6mm before. To surgeons, that's a stunning difference — we can insert it without force, meaning there's a lower risk of damage to the delicate inner ear structures and nerve cells.

This internal component also has an electrode which curls up inside the snail-shaped cochlea close to the middle. This is where the nerve endings are.

Previously, electrodes didn't get as close, so stimulation wasn't always accurate.

The operation takes around two hours. We make a 4cm incision behind the ear, then drill through the bone behind the ear to reach the cochlea.

We feed the electrode wires through the cochlea, until they reach the nerve endings which transmit to the brain. Then we fit the receiver in the hole and secure it with tiny stitches.

Patients can go home the next day, and return ten days later to have the external part fitted and the implant turned on by connecting it to a computer.

Most patients describe the sound as unclear and metallic to begin with, but over time, it becomes more natural as the connections between the brain and the implant get stronger.

These new implants were first used in the UK last year and have become our first choice.

As far as we know, Raymond is the oldest patient in the world to have this operation — it has been a great success.

■ *THE implant costs £25,000, both to the NHS and privately.*

WHAT ARE THE RISKS?

■ **AS WITH any surgery, there is a risk of infection, which could require antibiotics.**

■ **PATIENTS may feel dizzy for one or two weeks after.**

■ **VERY rarely, there's a possibility of damage to nerves in the face.**

■ **'A COCHLEAR implant can be life-changing for deaf people of all ages,' says Professor Douglas Hartley, a cochlear implant surgeon at the Nottingham Auditory Implant Programme.**

'This innovative electrode helps restore hearing, while having the advantage of avoiding trauma to delicate structures of the ear.

'We are fortunate that new designs such as this one are continuing to improve their performance all the time.'