

1973: First CAT scanner in North America

In May 1972, Dr. Colin Holman gathered his Mayo Clinic colleagues in the Department of Radiology break room. He showed them images of the human brain on slides he had borrowed from Godfrey Hounsfield, a British computer engineer he had recently met in New York. They were taken on Hounsfield's new invention, a "CAT scanner." "CAT," Dr. Holman explained, stood for computerized axial tomography.

Hounsfield's device used a computer to process tens of thousands of X-ray readings, producing a picture of a half-inch slice of the brain. The Mayo neuroradiologists were astonished by the clarity and detail of the images, far superior to anything they had ever seen. It appeared to be the greatest advance in radiology since the discovery of X-rays in 1895.

Hounsfield worked for the British company EMI—Electric and Musical Industries. Much of EMI's profits came from the Beatles. EMI had signed them in 1962, but the company's music business was completely separate from the electronics laboratory developing the CAT scanner, and Hounsfield struggled for funding. So far, he had only built a prototype scanner for a clinical trial in a London hospital.

The Mayo doctors immediately recognized the value of this new technology to patients. It could allow much quicker diagnoses of strokes and other dangerous conditions and provide surgeons with precise information on the size and location of tumors.

Mayo neuroradiologist Hillier L. Baker, Jr., M.D., was dispatched to England to evaluate the scanner. In a break with Mayo's usual procedures, he was empowered to place an order at his sole discretion, which would put Mayo first in line for the new device.

Dr. Baker toured Hounsfield's laboratory and talked at length with the doctor in charge of the clinical trial. He observed the world's only CAT scanner in action, noting that patients did not require sedation or experience discomfort or side effects, a huge improvement over some of the current options for brain imaging. He then reviewed the records of every patient scanned to date, checking their CAT scans against surgical reports for accuracy.

After three days, Dr. Baker was convinced. He placed an order for one "EMI-Scanner," to be delivered to Mayo Clinic as soon as possible.

It took nearly a year for the machine to be built by hand in Hounsfield's laboratory. EMI engineers installed it at Saint Marys Hospital in Rochester, Minnesota. Mayo Clinic performed the first CAT scan in North America on June 19, 1973.

Doctors enthusiastically adopted the new imaging option, and the CAT scanning schedule was soon filled to capacity. Mayo welcomed clinicians from around the world who crowded into the control room to see the future of radiology.

CAT scanning evolved rapidly, with increasing scanning speeds and ever-improving image quality. Mayo entered into a collaborative agreement with EMI to help advance the technology and “provide further benefits to patients.” In 1975, EMI installed a prototype body scanner at Mayo, extending CAT scanning to all organs and parts of the body.

As Dr. Baker predicted, Godfrey Hounsfield’s invention revolutionized the practice of radiology, adding “a new dimension to patient care.”

SOURCES

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