‘New scanner like 100 MRIs in one’

City researchers in medical breakthrough

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MRI breakthrough just what the doctor ordered

A GROUP of patients in Aberdeen have become the first in the world to be scanned using a unique MRI technology.

A team from the University of Aberdeen has been leading the charge with the Fast Field Cycling (FFC) MRI Scanner. The patients, who have all suffered strokes, agreed to be the first to be given scans by the new machine, carrying on a tradition of pioneering MRI technology in the city.

In the 1970s, a team from the university built the original full-body MRI scanner and then used it to obtain the first clinically useful images of a patient.

The new equipment is different from the current generation of scanners, which have become a routine aspect of healthcare around the globe. MRI scanners use a large magnet along with pulses of radio waves to create detailed pictures of a patient’s anatomy.

However, the new FFC scanners are able to extract far more information by varying the strength of the magnetic field generated during the scanning procedure.

Research group leader Professor David Lurie said: “Because FFC scanners can switch their magnetic field, it is almost like having 100 different MRI scanners in one.

“This gives an extra dimension to the data collected from each patient, greatly expanding the diagnostic potential.

“It is incredibly exciting to have imaged our first patients.

“This is a major step towards our technology being adopted by hospitals to benefit patients, which is the ultimate goal of our research.

“The patients who agreed to take part had suffered strokes and it is our hope that this could be used to help give early diagnosis of diseases like cancer and Alzheimer’s.

“Our hope is that we can demonstrate how useful this piece of equipment is – to show those firms building these machines that this is the way forward. It could mean that in five to 10 years, hospitals around the world have a scanner like this.”

The team, based at the University’s School of Medicine, Medical Sciences & Nutrition, has already shown the potential benefits of FFC-MRI for diagnosis by studying tissue obtained from patients who have undergone surgery. The prototype scanner was used to image the brains of patients who suffered from strokes in the hope extra information from the machine would help doctors examine brain tissue around affected areas more precisely.

The study is called “PUFFINS” and is being led by consultant and senior lecturer Dr Mary Joan MacLeod.

She said: “Treatments for stroke have to be given very early to be effective, and the CT scans patients currently undergo on admission to hospital give us limited information to help plan that treatment.

The Fast Field Cycling scanner has great potential, because it might give more accurate real-time information on what is happening in the brain tissue, helping to direct treatment.”