

Worldwide success in treatment of liver tumors

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Leicester consultant surgeon who has developed a pioneering technique using microwaves to destroy liver tumours has treated more than 100 patients in the UK and other patients are now being treated internationally.

Worldwide, about one million people a year die of primary liver cancer, with another million dying with secondary liver cancer where the cancer has spread from other tumour sites such as cancer of the colon.

The incidence of primary liver cancer is gradually increasing in the Western world, but it is very common in Asia and the Far East where it is associated with endemic hepatitis. Most patients with liver cancer are deemed inoperable but with the development of this microwave equipment, literally thousands of patients worldwide could be offered curative treatment, even if they have established [liver cirrhosis](#).

Mr David M Lloyd, MBBS, MD, FRCS, a consultant surgeon with University Hospitals Leicester NHS Trust, is also acclaimed for his innovative work in keyhole surgery. The University of Leicester has awarded him an Honorary Senior Lectureship, and earlier this month he won the title of Honoured Citizen of the Year for the City of Leicester.

David Lloyd's research, in collaboration with Professor Nigel Cronin and Dr. Peter Clegg at the University of Bath, has led to the development and production of a microwave generator and probe, now being manufactured by Acculis Ltd, UK. The treatment of more than 100

patients with [liver cancer](#) has resulted in curing or extending life for many of them, whose life prognosis was less than twelve months. More than one third of the patients treated are still alive after three years and some have been, quite simply, pronounced cured and discharged.

The earliest patient to be discharged is one of David Lloyd's trial patients treated nine years ago. Several more are alive and well five years after receiving treatment.

The importance of this application of microwave technology is immense, as Mr Lloyd explained: "The technique will have a significant effect on liver cancers, because we are operating on people who have been declared inoperable. Someone with cirrhosis of the liver can't be operated on in a conventional way to remove a tumour, but we can place a microwave probe in by keyhole or percutaneous (through the skin) methods and can destroy these tumours."

Because of the pioneering research done at the University Hospitals Leicester, the microwave generator is being used as far afield as Hong Kong, Singapore, the USA and Australia. In particular, the microwave technology has been embraced by many of the top cancer hospitals in the US, including the Memorial Sloan-Kettering Cancer Institute in New York, The Johns Hopkins University in Baltimore, and the M D Anderson Cancer Centre in Texas. Mr Lloyd added: "We've placed several in France and Switzerland and many of the world's leading liver [surgeons](#) have now expressed an interest in using the generator.

Because David Lloyd was the only surgeon with this specialised equipment he was referred patients from all over the world for treatment. He is extremely pleased that more centres are now using the microwave device and, in the UK, there are now generators in major teaching hospitals in Liverpool, Manchester, Leeds, Basingstoke and Edinburgh. David Lloyd calculates that within a couple of years, every

major liver centre in the UK will probably have a microwave generator.

The advantage the microwave technique has over other machines designed to destroy tumours, such as laser, ultrasound and radio-frequency (which is similar to an electric current) is that it is quick and produces cancer cell death with very few side effects.

Only tissue in the immediate field of the microwave energy is destroyed, David Lloyd explained, and not in other parts of the body, which is a danger with other methods, such as radio-frequency, where the electric current has to have an exit point from the body, with the risk of burning at that site.

"Microwaves don't cause collateral damage elsewhere in the body," he said. "They only heat up the tissue at the end of the probe and no energy is sent through the body. We can now treat very large tumours up to 6-8 cms in diameter within 4-6 minutes. This makes it ideal for someone who may have multiple tumours, which by other techniques, might take several hours to treat.

"People have come to Leicester from all over the world," he added. "It has really put Leicester on the map, within this field. For the last ten years I have been invited to every world and European congress in liver surgery to talk about this development. There has been tremendous interest because of the frustration with other forms of energy which haven't delivered. Our system is safe, fast and reproducible and it does work.

"If it's used correctly there are no side effects, but because this is a very powerful device, it has to be used correctly. I tend to work in collaboration with a radiologist so that accurate placement of the microwave probe can be achieved. We have not seen significant side-effects so far."

Source: University of Leicester ([news](#) : [web](#))

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