

Prof Sir Roy Calne: Pioneer who Carried out European's First Liver Transplantation

Prof Sir Roy Calne: Pioneiro que Realizou o Primeiro Transplante de Fígado na Europa

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Roy Yorke Calne was born December 30, 1930, Richmond, Surrey, England. He was 16 years-old when accepted to study medicine and he graduated at Lancing College and Guy's Hospital Medical School. From 1953 to 1954 he was House Physician, Surgeon and Thoracic House Surgeon at Guy's Hospital also serving at Royal Army Medical Corps in Hong Kong and Malaysia from 1954 to 1956. On his return to England, in 1957, he was appointed Departmental Demonstrator at the Department of Human Anatomy, Oxford. In the next two years (1957-58) he worked as Senior House Officer at the Wingfield Morris Hospital, Oxford. Then Calne moved to London and worked as Surgical Registrar at the Royal Free Hospital (1958-60). From 1960 to 1961 he was accepted as Surgical Research Fellow at Peter Bent Brigham Hospital, Boston, Massachusetts, United States. From 1961-62 Calne worked as Lecturer in Surgery at St. Mary's Hospital, London, then as Senior Lecturer and Consultant in Surgery, Westminster Hospital, London between 1962-65. In 1965 he became Consultant Surgeon at Addenbrooke's Hospital, Cambridge and in this year as Professor of Surgery, University of Cambridge, being only 34 years-old.

His interest in transplanation began when he was a medical student, observing many fatal diseases in young people when all they required was new organs. The inspiration for transplantation came from Sir Peter Medawar (brazilian-born Nobel Prize in Physiology or Medicine, 1960) after he attended a science lecture given by Medawar in 1956 telling the exciting story of immunological tolerance, with beautiful illustrations.

Medawar suggested to Calne a stage in America and after the approval of both Dr Francis Moore and Dr Joseph Murray (Nobel Prize in Physiology or Medicine, 1990) he travelled to Peter Bent Brigham Hospital, Boston, to continue his work with 6-MP in renal transplantation in dogs that was published in *Transpl. Bull* (1961)¹.

In 1965 Calne moved to the Chair of Surgery at Cambridge and with Dr Davis Evans got the program of human renal transplantation under way at Addenbrooke's Hospital.

When Calne was at Brigham, Boston, Dr Moore had carried out experiments developing the technique in dogs of liver grafting and Calne in his return to Cambridge set up the technique of orthotopic liver allografting in the pig.

Dr Thomas Starzl did the first clinical liver transplantation in 1963 but the results were dismal ². At Addenbrooke's a young adult with primary cancer of the liver was under his care and a child with mumps encephalitis was diagnosed as brain dead and then having his organs offered for transplantation. Dr Moore, fortuitously on that day, was visiting Cambridge and Calne discussed with him the possibility of performing a liver transplant and Dr Moore said: "Roy you've got to do it". On May 2th 1968, the first liver graft in Europe was performed in Cambridge, Dr Moore being the first assistant. This was the first liver transplant in the world with preservation of the inferior vena cava of the receptor "piggy back technique", also the primary bile duct anastomosis was chocho-cysto-choledocus. The transplant was technically successful, the patient survived six weeks but ultimately succumbed to a lung infection. Since that day in 1968 Calne established a collaborative program with Dr Roger Williams of Kings College Hospital in London, his Department performed more than 1000 liver grafts in the next 25 years. He also performed the first heart-lung-liver grafting in England. I was lucky enough to participated in the third heart-lung-liver grafting at Papworth Hospital, on 5/01/1992. The patient was a male, 20 years-old with polycystic disease. During my stage at Cambridge he performed as well the first small bowel transplantation (1992) of England.

Calne introduced the use of Cyclosporine A in organ transplantation (Rome 1978)³ a drug that supresses the imune system and prevent organ rejection. By 1977 Cyclosporine A had increased the chance of the patient surviving a year after a kidney transplant to

around 80% paving the way for transplant medicine to become mainstream and a huge expansion in the number of transplant units worldwide.

Calne was Fellow of the Royal Society, FRS (1973), he was Foundation President, European Society of Transplantation (1983-1984), he received his Knight Bachelor from the Queen of England (1986) and became Sir Roy Calne, Vice President, The Royal College of Surgeons (1987-1989), President Elect of the Transplantation Society (1990-1991). He has also more than 25 awards, being M.D (Hon Causa) University of Oslo, University of Athens, Hannover University. Albert and Mary Lasker Foundation Award “*sometimes known as the “pre-Nobel”*” (2012). He has more than 500 papers and 18 books. He has had in his Department more than 250 Visiting Fellows from all over the world.

Prof Sir Roy Calne, Professor of Surgery at Cambridge University (1965-1998), who died January 6 2024, age of 93, was a skilled surgeon inspiring future generations of clinicians in many continents. He has also done so much to advance medical knowledge and he will be remembered by us for his vision and genuine kindness. I had both the honour and privilege to be taught by him the art of liver transplantation in the early days in Cambridge, since my last visit to his home in 2017 I miss him very much.

He was a true pioneer of transplant surgery. After introducing Cyclosporine A in organ transplantation he has simply changed the transplant history making possible the transplantation of heart, lung, liver, pancreas, kidney transplants routinely. He leaves behind a truly amazing legacy such as first liver transplant in Europe in 1968, the world's first liver, heart and lung transplant in 1986, the UK's first small bowel transplant in 1992 and the world's first successful “organ cluster” transplant (stomach, intestine, pancreas, liver and kidney) in 1994.

CONFLICT OF INTEREST

Nothing to declare.

AUTHOR'S CONTRIBUTION

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