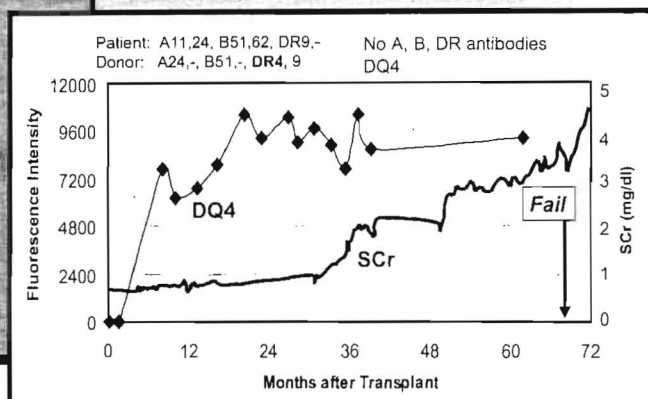


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RENE KÜSS (1913–2006)

In Memoriam

During a historic 12-day period between January 12 and January 20, 1951 in Paris, Rene Küss (1), Charles Dubost (2), and Marceau Servelle (3) first performed the extraperitoneal renal transplant procedure in common use today. Oeconomos and Rougeulle, who were members of the Dubost and Servelle teams, respectively, had helped Küss develop the operation in the experimental laboratory. Consequently, all those involved acknowledged the primary role of Küss, whose name is commonly attached in Europe to the procedure (the "Küss operation"). Dubost and Servelle obtained their renal allografts from the same guillotined convict donor, while Küss used a "free" kidney that had been removed from another patient for therapeutic purposes.

In Figure 1, the lessons learned from Küss's experimental work and from these early cases are inscribed in Küss's handwriting in the sketch and in a finished portrait of the operation done by an artist. When all nine of the grafts transplanted by the French surgeons were rejected, Küss concluded in an article, published in 1952, that "... in the present state of knowledge ... the only rational basis for kidney replacement would be between monozygotic twins ..." (4). The prediction was validated by Joe Murray's identical twin transplantation 2 years later using Küss's operation (5).

THE FIRST SUCCESSFUL ALLOGRAFTS

The transition from isografts to allografts was signaled by the successful engraftment of dizygotic (fraternal) twin kidneys, first by Murray in Boston on January 24, 1959 (6) and 5 months

later (June 22) by Hamburger's Paris team (7). For the next 3 years, the French experience provided the principal if not the only justification for continued clinical efforts in renal transplantation (7,8) (Table 1). After the fraternal twins, Küss added 2 crucial examples of >1-year survival following the transplantation of non-related kidneys on June 22, 1960 and March 12, 1961 (Table 1 bolded cases), while Hamburger's team reported successful outcomes with two blood-related donors. All six recipients had been subjected to sublethal total body irradiation. However, Küss's patients were subsequently treated with 6-mercaptopurine and prednisone, setting the stage for the era of drug immunosuppression. The Foch Hospital team that treated the first of these patients is shown here in Figure 2.

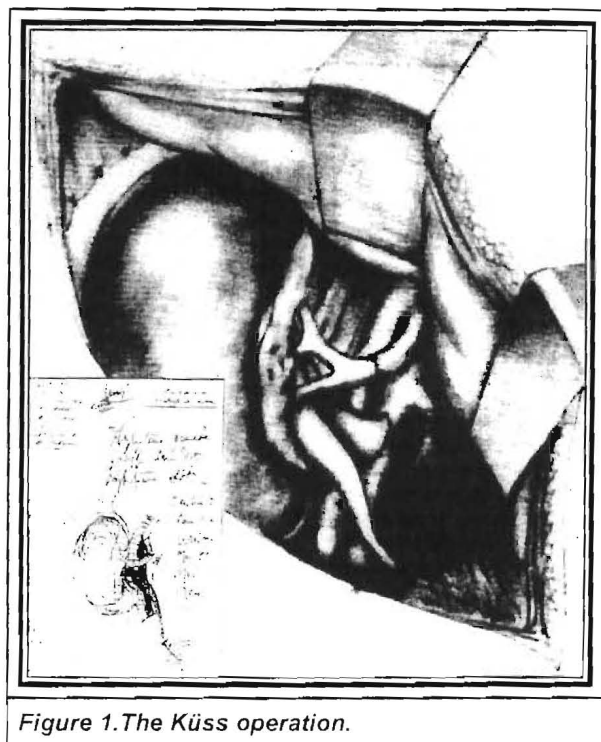


Figure 1. The Küss operation.

WHO WAS KÜSS?

Rene Küss was born on May 3, 1913. His grandfather, Emile Küss, was a famous physiologist at the University of Strasbourg and was the last French Mayor of this city (before its annexation). His father became a Parisian surgeon and member of the French Academy of Surgery (President) and of the French Academy of Medicine. Embedded in a privileged family, Rene was a happy youth with two brothers (one would become a physician) and two sisters. Moving freely between homes at the beach, in the mountains, and in Paris, the family was preoccupied with the arts, humanities, and year-round sports. Rene's undergraduate studies were heavily weighted with Latin, Greek, and philosophy courses.

Küss's subsequent medical studies and doctorate thesis were at the Medical Faculty (President Henri Mondor) of the University of Paris. His training was periodically interrupted beginning in 1939 (age 26) throughout World War II, during which he served as a physician in the doomed French Navy and was physician in chief on the destroyer, Mogador, that was bombed and sunk by the British off of North Africa in July 1940 (Figure 3). Küss later led one of the surgical teams of General George Patton's third American army and participated with the French resistance in the liberation of Paris — combining hand grenades with scalpels. He received the War Cross with



Figure 2. The Foch Hospital team that performed the first successful kidney transplantations from non-related donors. Küss is on the right, the nephrologist Legrain at the left, and the recipient and her husband donor in the middle.

Table 1. First 6 successful kidney transplantations of kidney allografts in the world.*

City	Ref	Date	Donor	Survival (mos)
1. Boston	6	1-24-59	Fraternal twin	>50
2. Paris	7	6-29-59	Fraternal twin	>45
3. Paris	8	6-22-60	Unrelated*	18 (Died)
4. Paris	7	12-19-60	Mother*	>12 (Died)
5. Paris	8	3-12-61	Unrelated*	18 (Died)
6. Paris	7	2-12-62	Cousin*	>13

*Adjunct steroid therapy. In addition, Küss's 2 patients (cases 3 and 5) were given adjunct 6-MP. Boston: Joseph E. Murray (case 1). Paris: Jean Hamburger (cases 2, 4 and 6), R. Küss (cases 3 and 5).

Palm. Much later, as a man of peace, he became Commander of the French Legion of Honor for his pioneer work in kidney transplantation.

After the war, Küss (already a battle-tried surgeon) became a surgical resident at the Broca Hospital, Paris, where the chief of service was Professor Proust, the brother of the famous philosopher-author Marcel Proust. It was here that he performed his historic kidney transplantations of 1951. In the ensuing years, he created multiple departments of urology in different Paris hospitals and made monumental contributions to general urology. Many of the sophisticated techniques that are used today in dealing with unusual problems of urinary drainage or vascular reconstruction in transplant cases



Figure 3. The war years. Left 2 panels: The sinking of the French Navy by the British in 1940 because of suspicion that it was an instrument of the Vichy government. Küss's ship, the destroyer Mogador, is seen in the distance (top) and fatally damaged close up (below). Right panels: As a medical officer with General Patton's army during the liberation of France (above) and in an emergency operating room in the field.



Figure 4. Küss giving the inaugural address of his presidency of the French National Academy of Medicine (1990).

were developed or promulgated by him. In 1966, an historic effort at pig-to-human kidney transplantation was made with the assistance of Dr. Jacques Poisson. As he wrote me in June 2002, he was left with a lifetime "xenophobia" for cross-species transplantation after the graft hyperacutely rejected.

In 1972, Küss quit private practice to concentrate full-time on the development of the legendary urology clinic at the University Hospital Pitié Salpêtrière. In the same year, he founded the French Society of Transplantation. He retired from clinical duties in 1985, but not from life. In the 1990s, he was President of the French National Academy of Medicine (Figure 4). Although his professional agenda always was a full one, there invariably was time left for other things. He was a race car driver and is shown in Figure 5 after 3 sleepless days and nights at the finish of the 1954 Rally de Monte Carlo. Adding to the start made by his grandfather and father, he gathered one of the great private collections in the world of ancient and modern paintings. These works have been viewed with wonder by me and by several members of the Transplantation Society at his home in Paris

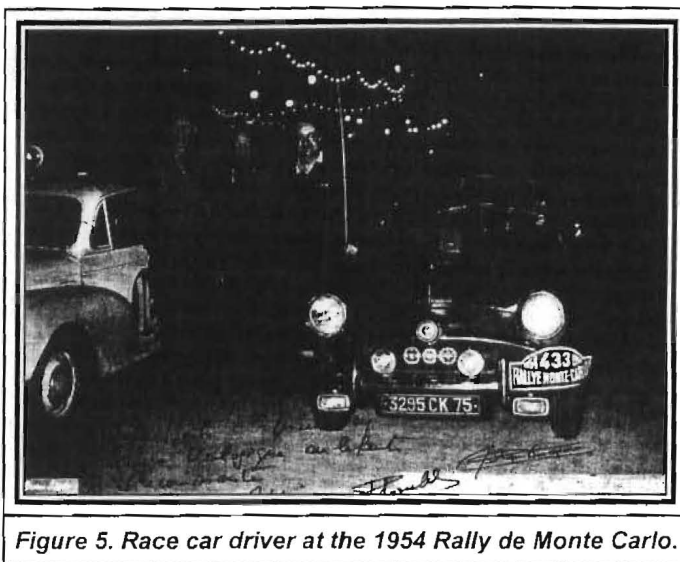


Figure 5. Race car driver at the 1954 Rally de Monte Carlo.

or the seaside village of Honfleur. His care of these treasures, his beautiful wife, his four children, and now grandchildren filled his life over a span of 93 years to a level almost never achieved by any man or woman.

In 2002, I had the honor of presenting René Küss the Medawar Prize of the International Transplantation Society. By then, I had known him for 40 years with always increasing affection. We sat together and reminisced on October 18, 2005 at a restaurant in the Crowne Plaza Hotel in Geneva. It was late, and we were the only patrons, except for his daughter who was attending him. He had come by train to Switzerland to join Roy Calne and me as honorary members of the European Society of Organ Transplantation. After the ceremony the following morning, we embraced. He told me then that he would never be able to leave Paris again. I knew that I had seen him for the last time and that I was saying goodbye to this truly great man. He sent me four hand-written letters during the next 6 months, each more difficult to read than the last. The emptiness left by his decline and death was made complete when I heard recently that his art collection had been auctioned.

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