

The Night of the First Heart Transplant in Italy

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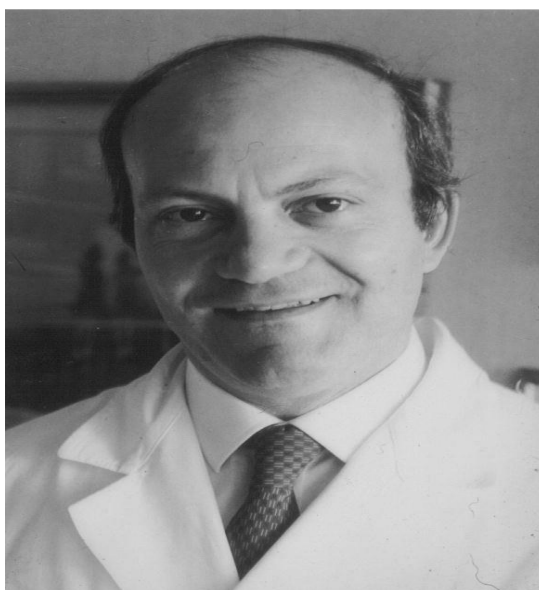
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INTRODUCTION

I beg your pardon if I will be boring you with a storytelling of just a case. I will deal with the first patient who underwent cardiac transplantation performed in Italy. Organ transplantation is one of the major surgical therapies. This is particularly true for heart transplantation, a procedure lifesaving from the lethal heart failure.

At 6:00 PM on November 13, 1985, the phone rings in my office at the Institute of Pathology. It is Professor Vincenzo Gallucci (*Figure 1*): "Gaetano, it's time: we have a donor in Treviso, and the countdown has begun. The transplant is scheduled for 3:00 AM tonight. Professor Donato recommends to preserve the recipient's heart for research and above all for History. Start up your technician. Ah, don't tell anyone—it has to be a surprise".



The donor is an 18-year-old young man from Treviso, Francesco Busnello (Figure 2A), who has been declared brain-dead due to a head trauma from a scooter accident. His parents gave the consent for organ donation. The recipient was Ilario Lazzari, a 38-year-old carpenter suffering from dilated cardiomyopathy (Figure 2B).

A



B



Figure 2: (A) Francesco Busnello, 18 years old - DONOR. (B) Ilario Lazzari, 38 years old – RECIPIENT

The objective, performing a heart transplant in Italy, that Gallucci had been pursuing for years was finally materializing. When Barnard carried out the first heart transplant in Cape Town in 1967 (Figure 3), Gallucci was in Houston as Resident under Cooley, who sought to emulate the South African cardiac surgeon by performing the first artificial heart transplant. It was during that time that Gallucci began to dream of carrying out the procedure in Italy. However, many years had to pass before this goal could be achieved.

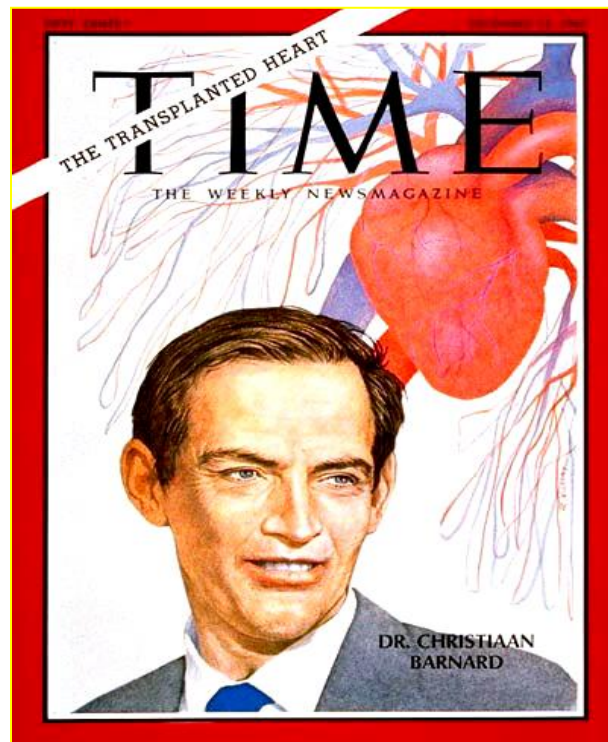


Figure 3: Front page of Time magazine marking the first heart transplant performed in Cape Town, South Africa, by Christiaan Barnard on December 3, 1967.

In the 1970s, heart transplantation worldwide had stalled due to the prohibitive mortality rate by acute rejection. The Shumway School in Stanford (*Fig. 4*), which had pioneered experimental transplantation in the 1960s, continued its clinical program with mixed results but successfully revived it in the early 1980s, thanks to cyclosporine and endomyocardial biopsy for rejection monitoring.

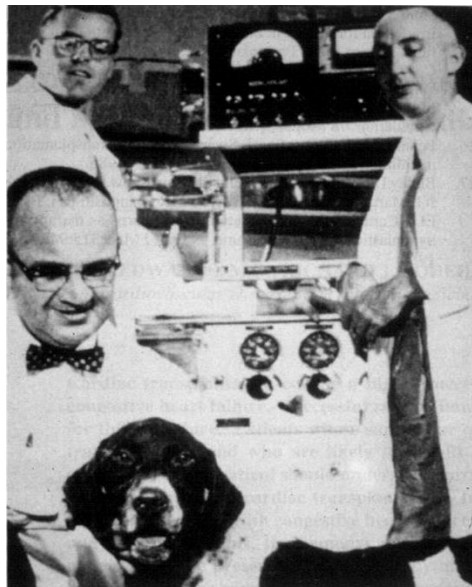


Figure 4: Norman Shumway (top right) and Richard Lower (top left) at Stanford University in 1960 performed the first canine heart transplant.

In 1984-85 Gallucci sent his fellows, Giuseppe Faggian and Uberto Bortolotti, to Stanford to study surgical and immunological aspects, while later the young pathologist Marialuisa Valente attended a course on endomyocardial biopsy organized by Margareth Billingham to train transplant pathologists worldwide (Figure 5).



Figure 5: Margareth Billingham in a white coat and Marialuisa Valente to her left, at a course on endomyocardial biopsies at Stanford in 1986.

However, performing a transplant was not just a matter of solving technical-scientific problems. A law was needed to allow organ donation from brain-dead donor with a beating heart. At that time, the Italian Minister of Health was Costante Degan, a native of Veneto Region, whom Gallucci worked to persuade. Degan faced multiple pressures to delay the decision until all prestigious Italian hospitals were ready, to avoid appearing to favor Padua. The authorization was unlocked in early November. With the first available donor, the transplant could take place. On November 4, Gallucci and his “boys” simulated the procedure in the autopsy room of the Pathological Anatomy department, using two cadavers—one as the donor and the other as the recipient (Figure 6).



Figure 6: Vincenzo Gallucci meets Minister Costante Degan to secure ministerial authorization for the transplant.

Here is the Anatomical Theater (Figure 7), a piece of art of our university, the first scientific laboratory in medical history, where modern medicine originated. The study of the heart was deeply rooted in the University of Padua. Thanks to anatomical dissections performed in this theater, the human body's anatomy, heart and lung functions as well as blood circulation great liberation'. My technician Mauro Pagetta (Figure 10) and I rushed to the Pathology Institute. For the first time, the pathologist were understood and the most important cardiovascular diseases were discovered.

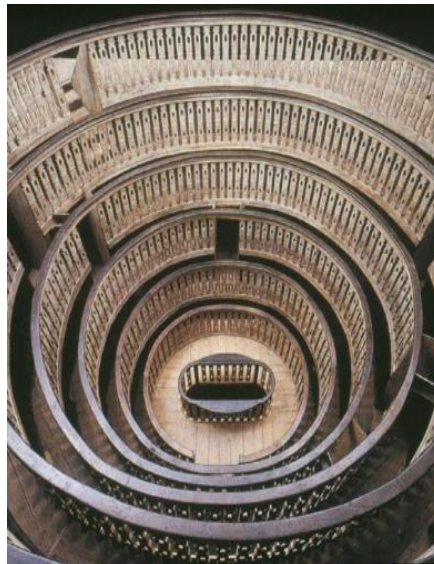


Figure 7: The Anatomical Theater of Fabricius Acquapendente, built at the University of Padua in 1595.

Here, generations of students learned the anatomical basics of medicine, not only from reading books or listening to “ex-cathedra” lectures but above all with direct experience: there was only to see and learn by watching (Figure 8).



Figure 8: Front page of the book «De Re Anatomica» of Realdo Colombo, painted by Paolo Veronese.

Back to the night of November 14, 1985, the operating room was fervent by preparations and excitement. The news had leaked, and a journalist of the newspaper *Corriere della Sera*, Alessio Altichieri, arrived early and managed to infiltrate the Operable Heart Disease Center before barriers were put up to hold back dozens of journalists and television crews, crowding the corridors outside, aware that history was being made that night. Altichieri had the privilege of witnessing the feverish preparation and capturing the emotions and moments that earned him the next day an exclusive “scoop”, arousing envy among his colleagues.

At around 2:00 AM on November 14, the surgical operation began on two fronts: in Padua Alessandro Mazzucco and Uberto Bortolotti prepared the operating field and opened Lazzari’s chest, while in Treviso Carlo Valfré opened Busnello’s chest after the 12-hour countdown of brain death was completed. Gallucci, driving his own car, rushed to Treviso with Giuseppe Faggian and Giovanni Stellin, retrieved the donor's heart, placed it in an ice container, and sped back to Padua in just 25 minutes. He then re-scrubbed and entered the operating room to perform the recipient's cardiectomy and implant Busnello’s heart.

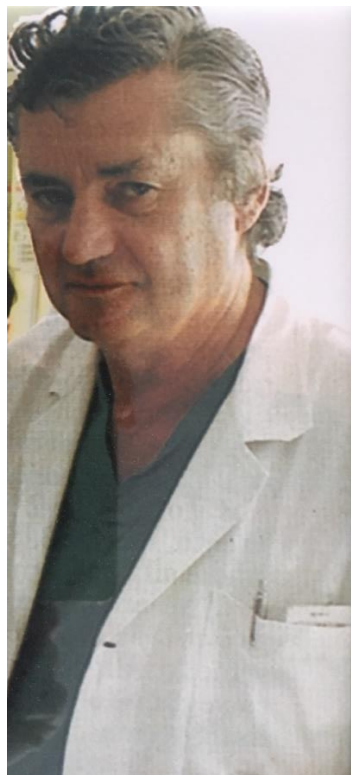


Figure 9: Dr. Pietro Pascotto.

The operation was successful but it took some time before Gallucci and his staff left the operating theatre. Gallucci sent a nurse to me with a basin containing the recipient heart, which was still beating.

Alessandro Mazzucco, on the occasion of the tenth anniversary of the transplant, recalled the event as follows: ‘Long night, full of tension, hope, fear and joy. In the end a great liberation’. My technician Mauro Pagetta (Figure

10) and I rushed to the Pathology Institute. For the first time, the pathologist was holding the heart of a living person and the Institute of Pathology was lit up all night.



Figure 10: Mauro Pagetta, chief histology technician, preserved Lazzari's explanted heart with formalin injection into the coronary arteries. The specimen is now exhibited at the Morgagni Museum of Pathological Anatomy in Padua.

The previous evening, at a warm meeting of the Management Committee of the Socio-Health Unit of Padua, someone had said: 'the health of citizens teeth is more important than an academic virtuosity such as a heart transplant'.

True to the command of silence, I managed to curb the wrath of the reporters who wanted news, so that they could drive off with a special edition of their magazine. They were exhausted, claiming their right to the news and information but I did not intend to anticipate anything, faithful that the official announcement was up to Gallucci. Gallucci finally came out of the operating theatre and, shy as he was, wanted to leave through a back door to avoid the journalists. Maybe he was late to be sure of the surgical result. He turned up around 6.30 a.m., assailed by the flashes and microphones (Figure 11): he made a laconic declaration, as was his style, that everything had gone well and withdrew, going home for a well-deserved, even if very short rest. He had the signs of fatigue and sleepless night in his face but also a deep serenity, indicating a satisfaction with the positive outcome of the operation.

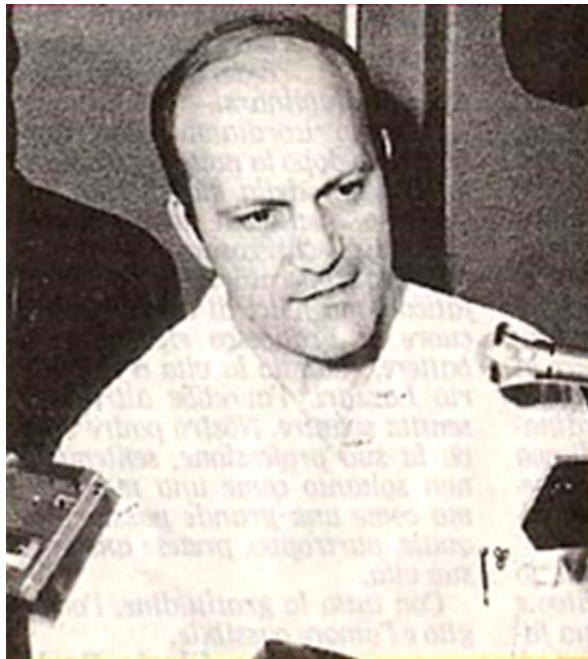


Figure 11: Vincenzo Gallucci at microphone.

I walked back to the Institute of Pathology, incredulous that I felt neither sleepy nor tired. The Via Gabelli bar had just opened. Mr. Fanzago, who had anxiously followed the radio news at home and read the first edition of the local newspapers, which did not report the outcome of the operation asked me for the latest news. I went to the cashier to pay: 'It's on me, Professor,' he said to my surprise, with all the pride of feeling that he was a citizen of Padua, heir of Fanzago, a Rector of the 'Great Doctors' University.

The formalin fixation of Lazzari's heart, with direct injection into the coronary arteries, was carried out by Mauro Pagetta with perfection and the result was superlative. The heart turned out to weigh 850 grams and, dissected by 4 chambers view, appeared as a classic dilated cardiomyopathy with extreme biventricular dilatation ('cor bovinum'). It is now part of the anatomical collection of the Museum of Pathological Anatomy (Figure 12).

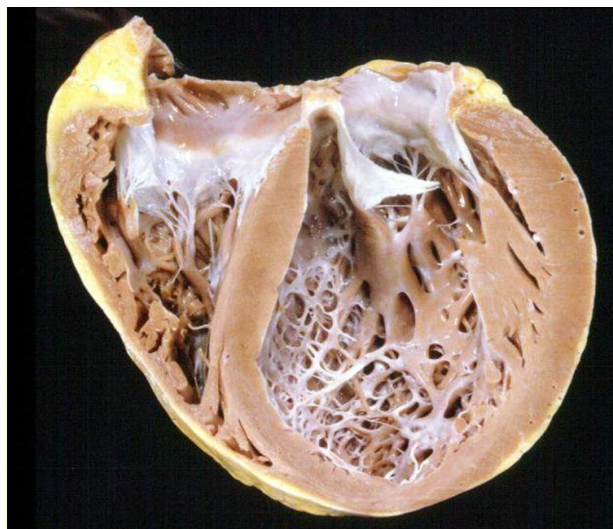


Figure 12: The recipient heart of the first transplanted patient.

Lazzari (Figure 13) had some postoperative complications (a duodenal ulcer, a pulmonary mycetoma) but incredibly never a rejection.



Figure 13: Ilario Lazzari, a few days after his heart transplant.

Two years later he married (Figure 14). Subsequently, the blood bags used during her hospitalisation in Milan for mycetoma turned out to be infected with HIV. At that time, the ELISA test was not yet available to identify whether donated blood was positive.



Figure 14: Prof. Gallucci with Ilario Lazzari, on his wedding day, 25 July 1987.

Lazzari, 7 years after the operation, developed an opportunistic immunodeficiency infection together with chronic rejection and myocardial infarction, rapidly fatal ^[1]. Paradoxically, he benefited from the most radical cardiac therapy and at the same time was struck down by the cruellest disease of the century due to an infected transfusion.

Gallucci died tragically on the evening of 10 January 1991 in a car accident along the Brescia - Padua motorway, near the Verona Est tollgate. His body was exposed in the new Cardiac Surgery Centre, the project to which he had entrusted his dreams. Fate did not allow him to enjoy its inauguration. The Centre took his name.

Gallucci rests in the cemetery of a small town in the province of Mantua, next to his parents. In an interview, given in 1987, he confided: 'My faith today is firm, rooted, unshakable. I cannot say when I came to this. It

happened naturally, slowly, becoming a man. Perhaps ... becoming a doctor. It seems to me that it is right to thank God for what he gives us rather than ask him for anything more'.

In a newspaper, on the occasion of the tenth anniversary of the transplant, entitled "Gallucci, an inheritance which is not consumed" I wrote 'Gallucci survives in the hearts of thousands of patients to whom he gave health again ... he lives on in the myth of the Medical School of the University of Padua, as a warning and example for the new generations: humanity needs heroes also for the progress of Medicine'.

It was not a coincidence that the extraordinary event of Italy's first heart transplant took place four centuries later at the same university.

In his prolusion of 1924-25 academic year, Prof. Castiglioni (Figure 15), Italy's greatest medical historian, stated: 'The connection that exists in history is continuous and intimate, so that nothing suddenly arises'.



Figure 15: Arturo Castiglioni (1874-1953) Prolusion Academic Year 1924-25 - University of Padua.

REFERENCES

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