

## «I stole with my eyes»: Hamilton Naki, a pioneer in heart transplantation

Julio César López-Valdés\*

Medical Directorate, Teaching and Research Head Office, ISSSTE, Ciudad de México; Universidad Autónoma de Tamaulipas, Facultad de Medicina de Tampico Dr. Alberto Romo Caballero, Tampico, Tamps., Mexico

### Abstract

On December 2, 1967, when Denise Darvall was hit by a car, a surgery that made medical history was unfold: Hamilton Naki, a black man, expertly removed her heart and gave it to Christian Barnard, who was preparing the receptor, Louis Washkansky, in an adjacent operating room. Naki's contribution was an outlaw act, a criminal offense under the laws of apartheid due to the difference of races; the law forbade him to cut white meat or touch white blood. Naki was perhaps the second most important man in the team that day. There were few photographs where he and Barnard appeared together, but because of the nature of society was Barnard who won the world's attention. (Gac Med Mex. 2016;152:636-8)

**Corresponding author:** Julio César López-Valdés, jc.lopez@live.com

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*“As I entered, a kindly looking big African gentleman looked up. ‘Yes my boy, what can I do for you?’ He was clearly in the middle of an operation, and on the other side of the table stood a white surgeon. In my naivety and lack of political sophistication, I automatically concluded that the black man was the assistant and the white man the surgeon, until the former tapped the latter on the hand and said in a rather authoritative manner, ‘Not there, put the clamp here.’ That was my first introduction to Hamilton Naki, a most remarkable human being.”*

Anwar Suleman Mall

Mall AS. Hamilton Naki – a surgical Sherpa. SAMJ. 2007;97(2):95-6.

### Introduction

Today, performing a heart transplant is an almost routine procedure all over the world; however, the skills, precision, knowledge and willingness to perform

should be taken into consideration. Now, we are obliged to reflect on the intrepidity and courage it took to practice the first one of these procedures.

In addition, taking into account that the first heart transplant took place in South Africa during the era of apartheid (1948-1992), we should reflect on the social

#### Correspondence:

\*Julio César López-Valdés  
Facultad de Medicina de Tampico (UAT)  
Hospital Regional Lic. Adolfo López Mateos ISSSTE  
Pedro José Méndez, 811  
Col. Cascajal  
C.P. 89280, Tampico, Tamps., México  
E-mail: jc.lopez@live.com

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conditions in which this historical event developed and why Hamilton Naki is hardly ever mentioned as a member of the team that on that December 2, 1967, accomplished an exceptional achievement for medicine.

### **Apartheid and medicine**

Apartheid was the social segregation system in the Republic of South Africa and Namibia (then part of South Africa) until 1992, where the supremacy of the white minority (less than one fourth of the population) was preserved over all ethnic groups in political, economic and social issues. In addition, apartheid granted the black population only 14% of the land, providing the Dutch settlers (Afrikaners) with control over all productive activities of the country<sup>1-3</sup>.

Apartheid inappropriate social organization was reflected on issues of health and disease, where white population neonatal mortality was comparable to that seen in first-world countries (21.1/1,000 live births); however, when belonging to a different ethnic group, it was really poor. According to Mechanic<sup>1</sup>, mortality for the Asian population was approximately 37.1 per 1,000 live births, and this worsened for the population of color, where a mortality of 136.2 infants per 1,000 live births was reported. In addition, Mechanic further explains that when a 5-year survival study was carried out in children within the reservations, only half of each woman's children reached an older age<sup>1</sup>.

Moreover, according to the Health Ministry of those times, one doctor was reported per 450 white people and 18 thousand black people; with a doctor of color per 6,200 black people<sup>1</sup>.

By 1971, there were 4 medical schools that excluded, on their majority, African subjects and had a very scarce population of Asian and Black students<sup>1</sup>.

From this point of view, the most advanced transplantation teams lived together with the conditions of severe undernourishment, famine, inequity and death of the country's black population.

### **Hamilton Naki**

Of black race and poor family, he was born in June 26, 1926, in the village of Centani, from the British protectorate of Transkei (Cape Town province), Republic of South Africa. He received basic education until the age of 14 years, when his family could no longer afford his education. At the age of 18 he began to work as a gardener at the University of Cape Town (UCT). It was there where Robert Goetz, a surgery professor

who had fled from Nazi Germany, asked him to step in to the laboratory to hold a giraffe he was operating. When the procedure was completed, Goetz was so impressed with Naki that he invited him to work in the laboratory<sup>4-8</sup>.

Shortly, Naki became very skilled, from mere observation, as he himself used to explain, on a wide range of surgical procedures, which ranged from catheterization and suture to intubation and anesthesia. In addition, he took care of postoperative care of the animals<sup>3,4</sup>.

He practically became an expert surgeon of precise and firm hands, although only known by those who shared the operating room with him. He began to intervene in surgical procedures on laboratory animals, where he had the chance to anesthetize, operate and, finally, to transplant organs to animals such as pigs, dogs and rabbits<sup>4-6</sup>.

There were few surgeons able to do what he could do. When Christiaan Neethling Barnard (1922-2001) returned from the USA, where he learned newest techniques on heart surgery (the then classical technique devised at Stanford University by Lower and Shumway), he recognized Naki's skills and used him first as his anesthetist and, later, as his first assistant. Soon enough, Naki became Barnard's right hand, a fact that became more important when the latter started suffering from arthritis<sup>4-6,9</sup>.

### **First heart transplant**

On December 2, 1967, when 26-year old Denise Darvall was hit by a car when she was on her way to Cape Town to buy a cake, after having sustained serious head injuries that resulted in brain death when she arrived to the Groote Schuurhospital, an operation that made medical history was set off: her heart was healthy and still pumping<sup>8,9</sup>.

After permission for the procedure was granted by the young woman's father, her body was placed on Hamilton Naki's hands, who skillfully extracted her heart and handed it to Christian Barnard, who was preparing the recipient, Louis Washkansky, of 57 years of age, in an adjacent operation room<sup>4-12</sup>.

Mr. Washkansky had a favorable evolution after the postoperative period for a couple of weeks. However, he developed a pneumonia that triggered sepsis, probably secondary to excessive immunosuppression, which finally ended up with his decease at day 18 post-transplantation<sup>9-11</sup>.

The news spread quickly and, due to the dramatic nature of the event, as well as to Barnard's charismatic

personality, he became an instantaneous celebrity; nobody got to know Naki.

Maybe Naki was the second most important man of the team that on that day carried out the first heart transplant in history. There were few pictures where he and Barnard appeared together, but owing to society's nature, it was Barnard who gained worlds' attention<sup>4,8</sup>.

Hamilton Naki's contribution was a proscribed act that was considered inadequate; it was a criminal offence under the laws of apartheid owing to the racial difference. Nevertheless, the hospital granted Naki permission, but not without first recommending to maintain his role concealed owing to the color of his skin and to the laws of apartheid that prohibited for him to cut white flesh or touch white citizens' blood<sup>4,6,8</sup>.

For years, hospital records kept him enlisted as a gardener; he never complained about the injustices suffered throughout his life. Naki got retired in 1991 with a 275-dollar monthly gardener pension<sup>13</sup>.

According to R. Hickman<sup>14</sup>, a surgery associate professor who was close to Naki, when he was about to retire and went to the pension office, there was consternation because there were no records of his participation, to what he stated: "Don't worry, your offices weren't here when I started".

Years later, Oxford's historian Theodore<sup>7,15</sup> wrote "An Intimate History of Humanity", revealing Hamilton Naki as a participant<sup>7,11</sup>. In 2001, in an interview shortly before his death, Barnard called him "one of the great investigators of all times in the field of heart transplants", and added: "he was a better craftsman than me, especially when it came to sowing"<sup>6,9</sup>.

Naki played an important role in the training of hundreds of surgeons that attended Cape Town to study with Barnard; he participated in the education of more than 3,000 surgeons, as well as in countless keynote addresses within the university<sup>4,8,13</sup>.

He was granted an honorary Doctor's Degree in medicine by the University of Cape Town in 2002 and, in 2003, he received the Magister Scientarum in Surgery honorary title from President Thabo Mbeki's hands<sup>12</sup>. He was also awarded with the National Order of Mapungubwe by Nelson Mandela's government.

Ironically, Naki died on May 29, 2005, from a heart attack at the age of 78 years<sup>4,8,13</sup>.

Few years after his decease, the South African government established the "Hamilton Naki Clinical Scholarship" with the purpose to create world-class doctors in all areas of medicine, as well as for clinical research<sup>16</sup>.

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