

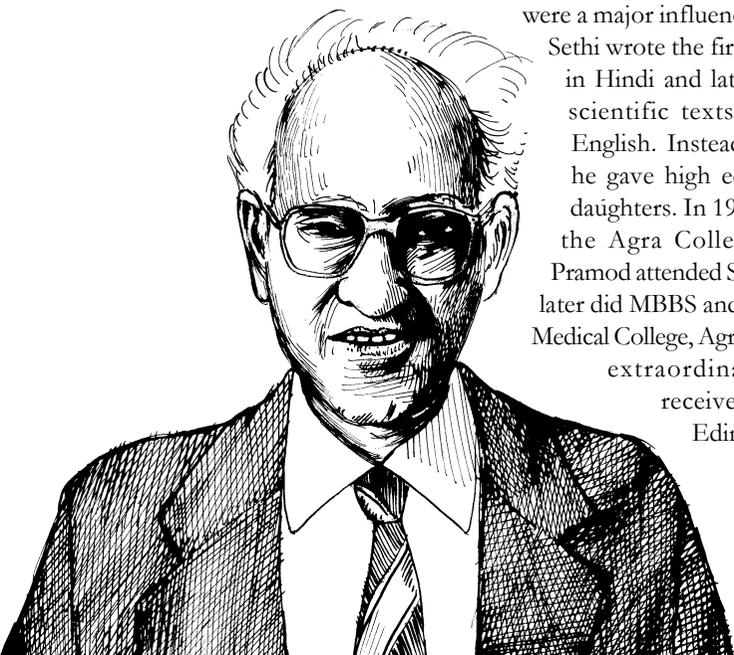


*"I have often advised our young doctors not to rush to make a lot of money – the gratitude of the patient should be enough." - P. K. Sethi*

Most people living in war zones – from Afghanistan, Sri Lanka to Rwanda are likely to know a town in north India – Jaipur. This city in Rajasthan is famous in strife-torn areas as the birthplace of an extraordinary prosthesis, or artificial limb, known as the *Jaipur Foot*. This low-cost attachment has revolutionized life for millions of land-mine amputees. It was co-designed by Dr. Pramod Karan Sethi.

Pramod spent his early childhood in Varanasi. His father Dr. Nikhil Karan Sethi taught physics at the Banaras Hindu University where scholarship, simplicity, sacrifice and service to the nation were encouraged. Gandhi's ideals were a major influence in the family. Dr.

Sethi wrote the first physics textbook in Hindi and later translated many scientific texts into Hindi from English. Instead of giving dowry, he gave high education to all his daughters. In 1930 Dr. Sethi joined the Agra College, so the young Pramod attended St. John's School and later did MBBS and MS from the S. N. Medical College, Agra. On account of his extraordinary brilliance he received his FRCS from Edinburgh in 1954.

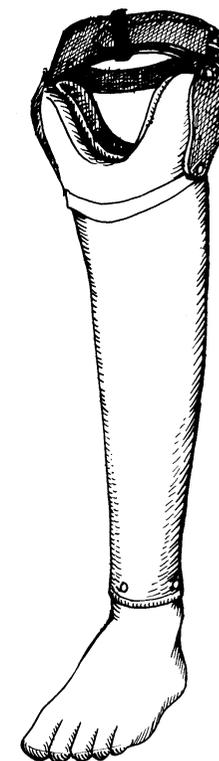


Though trained as a surgeon it was purely by chance that Pramod stumbled upon orthopaedics. A high powered team was to visit the Sawai Madho Singh Hospital, Jaipur for 'inspection'. As there was no Orthopaedic Department, the principal prevailed upon Pramod to start one. This expediency on the principal's part had more far reaching consequences than he could have envisaged, for Sethi went on to design a light, hard wearing, cheap artificial foot which transformed the lives of thousands across the world.

The *Jaipur Foot* was designed by an unusual team of a professional surgeon Dr. Pramod Karan Sethi – a fellow of Britain's Royal College of Surgeons and an unschooled master craftsman Ram Chandra Sharma. They both met 30 years back in the corridors of the Sawai Madho Singh Hospital in Jaipur where Sethi was helping orthopaedic patients with crutches and Sharma was teaching leprosy patients to make handicrafts.

Sethi wanted to provide an appropriate and inexpensive appliance for polio patients and amputees. The nearest artificial limb centre was in far away Pune or Mumbai where only the rich could go. So Sethi set up a workshop in the hospital premises to make some of the aids locally. The *foreign foot* made by the Army Limb Centre in Pune was heavy, stiff and had to be covered with a shoe. This resulted in people buying them but abandoning them very soon. The shoe presented most of the problems as Indians are used to walking barefoot in the fields, at home, at work and at places of worship. It was expensive and deteriorated rapidly when exposed to water or mud. In addition it severely limited postural flexibility. People could not sit cross legged or squat in the toilet.

Sethi was inspired by a Sri Lankan design where a rubber-foot like covering for artificial legs enabled farmers to work in water filled paddy fields. Sethi got a local craftsman to make a foot of vulcanized rubber. Initially it was heavy and stiff, but slowly it was modified by filling the shell with sponge rubber. Later they added microcellular rubber for the heel and cut wedges at its upper end to make a





universal joint. One patient's brother then dyed the rubber to an Indian skin colour, and this became the *Jaipur Foot*.

Trials of the *Jaipur Foot* demonstrated its durability, cost-effectiveness and comfort. The broad flat walking surface gave a feeling of security to the wearer. The tough rubber shell provided virtual immunity from breakdowns and most repairs to its surface could be made in the same manner that bicycle tyres were patched.

In 1970, Sethi presented his first paper on the *Jaipur Foot*. In 1974 he was asked to give the lead talk at the First World Congress on Prosthetics held in Montreux, Switzerland.

In 1975 Arjun Aggarwal, a wealthy former patient from Bihar donated a large sum of money toward the construction of a five-story rehabilitation centre on the hospital grounds. The state government and other philanthropists also pitched in help. The way poor patients are welcomed and treated at the centre is worth recounting. *"Patients arrive from all over without any notice, often accompanied by a close relative. The first thing they are asked to do is to telephone home informing their safe arrival. All food, care and medical facilities are free. A simple kit containing*

*toilet articles, a plate, a mug and a towel is given to each amputee. Thus equipped, the patient enters the rehab centre's courtyard. The courtyard is alive with other amputees - peers who understand him and respect his individuality and the communal experience helps build his confidence and self-esteem. Once treated the patient is given a free train ticket along with a packet of food to return home!"* (Extract from Magsaysay citation)

The process of making and fitting a new limb takes an hour. Each limb is tailor made to suit the specific needs of the patient. Wearing this limb a person can work in the fields, climb trees, pull rickshaws, walk on uneven ground or even perform a traditional dance. In Western countries most amputees are old, where as in India most patients are young and poor migrant labourers.

In 1978, Sethi received the B.C. Roy Award as an *Eminent Medical Teacher*, and the Padma Shri honour from the Indian government in 1981. The same year he was also awarded the prestigious Ramon Magsaysay Award for Community Service.

Dr. Sethi was a man of deep scholarship. He was keenly interested in trees and flowering plants. He was a prolific reader and loved listening to classical Indian ragas, Western jazz, early rock and folk music. He never joined any social club or took a vacation, preferring to spend his leisure at home with his family – his wife Sulochana, three daughters and a son. Dr. Sethi passed away on 6 January 2008 at the age of 80.

A documentary on the *Jaipur Foot* was made by David Suzuki for the Canadian Broadcasting Corporation. The *Jaipur Foot* was also immortalised in *Nache Mayuri* a Bollywood blockbuster about Sudha Chandran, a young Indian classical dancer on the verge of a glittering career who lost a leg. Her rehabilitation and subsequent success in Indian cinema was attributed to the *Jaipur Foot*. School going children in India will be able to read about the dancer and the *Jaipur Foot* in the Class 3 English text book.



Sudha Chandran