

Obituary

DR. NOSHIR ANTIA, FRCS (Eng.) FACS (Hon.)

Noshir Hormasji Antia was born into a middle class Parsi family in Mumbai on 8th February 1922. After a happy childhood and schooling in rural Karnataka and Mumbai, Dr. Antia completed his medical studies with merit at the prestigious Grant Medical College in Mumbai in 1945, and the lure of a handsome stipend made him enlist as a doctor in the British Indian Army. In 1947, exultant with a lucky quick discharge from a military career, he sailed to England to qualify in surgery. He worked in over 11 hospitals in the UK over a 9 year stint absorbing the skills under stalwarts like Sir Harold Gillies, the father of modern plastic surgery, and A.B. Wallace, who had pioneered through his inquiring mind radically new treatment for burns. His interest in plastic surgery was kindled by Gillies, an unorthodox surgical genius with an awesome reputation. Young and impressionable, Antia picked up not just the technique but also an attitude of the mind. The years in post-war England and Europe fortified in his mind how much could be achieved with very little money and facilities without compromising on quality.

On his return to India in 1956, Dr. Antia developed a surgical department at a reputable private nursing home in Pune. The opportunity for practicing his newly-gained skills in plastic surgery came in the form of stigmatised leprosy patients living behind barbed wire at Kondhwa on the outskirts of Pune. The primitive conditions of work at Kondhwa merely stoked his creative genius. With no assistant, anaesthetist or antibiotics, and with patients providing illumination through torchlight, many procedures for correction of facial deformities were undertaken using innovative methods. A negative face mask of a leprosy patient sent to The Wellcome Trust Museum in London was instrumental in being selected for the Hunterian Professorship.

In 1958 he established the first plastic surgical centre in Western India at his alma mater, the J.J. Group of Hospitals in Mumbai (later rechristened as the Tata Department of Plastic Surgery on account of the visionary support from this industrial house), it pioneered not only plastic surgery in leprosy, burns and other conditions, but also facial prosthesis, rehabilitation and applied research in neurobiology and immunology of leprosy, as well as immunological response in thermal injuries. Surgeons, clinicians and researchers from all parts of India and the developed world partook and contributed to the overwhelming vitality at the department.

It is now widely acknowledged that the first microvascular surgical flap which revolutionised reconstructive surgical procedures was undertaken by him at this hospital.¹ He became best known for his procedure for ear repair using chondrocutaneous flaps.² Realising the futility of restricting to correction of deformities in a stigmatising condition such as leprosy, the work of the department was extended through US PL-480 grants to economic and social aspects of rehabilitation. A range of services for comprehensive care were set up including vocational counseling, provision of orthotic devices and a placement service. A number of education projects were started for purposeful involvement of the

community on behalf of the handicapped. His crowning achievement however was the integration of treatment of leprosy patients in the general ward of a public hospital in 1960. He was also instrumental in convincing Professor Lechat and the organising committees of the International Leprosy Congress in 1984 to introduce for the first time a session on the social aspects of leprosy. At this session he had an official opening to stress on political will by quoting China's remarkable progress in the control of leprosy.

In the stimulating environment of a teaching hospital, Dr. Antia brushed shoulders with eminent personalities such as the neuropathologist Dr. Darab Dastur, and leprologist Robert Cochrane who kindled the love of clinical research. At the height of his surgical career in 1968 with the temptation of embarking on glamorous transplantation surgery, he sat on a laboratory bench in the Mellanby Building at The National Institute for Medical Research, Mill Hill learning of host – parasite relationships in mycobacterial disease under Dick Rees and Sir Peter Medawar. The best advice he received from the Nobel Laureate was to start using his hands as fast as possible!

He established the post-graduate research laboratory at the J.J. Hospitals so that he was not restricted to clinical research. In collaboration with Dr. D.K. Dastur and others he studied the nerves from leprosy patients that pioneered a trail for another 25 years. It modified the concept of leprosy from being a dermatological disease to a neurological one.³ The team demonstrated that the non-myelinated fibre Schwann cells are the prime hosts for *M. leprae* and nerve damage in leprosy was more diffused than envisaged. It is here that his combined skills as a surgeon and scientist came to the fore. He identified the index branch of radial cutaneous (IRC) nerve as an ideal nerve for study in leprosy. The small area innervated by the IRC nerve lends itself to total biopsy and permits the correlation of clinical, functional and structural parameters within the same nerve. Using the most powerful source of contemporary magnification – the electron microscope – his team demonstrated significant changes that could not be discerned by the light microscope. This allowed a unique understanding of the evolution of nerve damage in leprosy.⁴

The work at the post-graduate laboratory at the J.J. Hospital⁵ was the forerunner to the establishment of The Foundation for Medical Research (FMR) in Worli, Mumbai in 1974 with the help of two industrial families: the House of Godrej, and the Sheths of Great Eastern Shipping, who deferred to his courageous vision of a research institute that would encourage indigenous thought and solutions. Professor E.J. Ambrose, a renowned cell biologist who found Dr. Antia's approach sufficiently challenging, took premature retirement from the Chester Beatty Institute in London to become actively involved in the early stages of the Institute's development. Over the next 15 years the Foundation made significant contributions in leprosy. The studies undertaken at the post-graduate laboratory and J.J. Hospital were further extended at FMR and demonstrated the specificity of 'C' fibre involvement in leprosy. The importance of addressing persistors in the nerves was strongly advocated by him at a time when they were regarded as 'inconsequential'. Their relevance in reactions and progress of nerve damage after clinical cure is only now being appreciated. Qualitative and quantitative studies also demonstrated axonal atrophy as the primary lesion and is the result of *M. leprae*-induced alteration in the axonal cytoskeleton.

A major thrust at FMR was unraveling the roles of two major cellular hosts of *M. leprae*, viz. the macrophage and the Schwann cell. The studies on macrophage–*M. leprae* interaction resulted in the understanding the pathways for specific immune suppression and differential antigen presentation. This led to the designing of intermediary tests for testing vaccine candidates. The Foundation was also in the forefront in the attempt to cultivate *M. leprae*.

Limited multiplication of *M. leprae in vitro* was reported for the first time within dissociated murine Schwann cells. In addition an interesting life cycle of *M. leprae* in axenic culture was described.

The flexibility that he instilled in young scientists provided the goad to the diversification of the Foundation's work in later years into viable long-term research programmes in multi-drug resistant tuberculosis and preclinical evaluation of medicinal plants for primary health care both of which are not only scientifically exciting but relevant to this country's needs. In the last decade he constantly urged the merger of the social and the medical sciences that would give rise to both excellent and compassionate science. He seemed to develop the conviction that when physiology was far advanced, 'the poet, philosopher and the scientist would understand one another.'

His interests in the social aspects of medicine paradoxically began after his return from Mill Hill in 1970, when he perceived the burning problem of bringing medical and healthcare services to marginalised rural populations even across the harbour of an affluent metropolis like Mumbai. This became his foremost mission which he served through the Foundation for Research in Community Health, founded by him also in 1974. Once again, seminal contributions were made with young enthusiastic workers making forays for the first time into the academics of public health in India, health economics, operational research and the conceptualisation as well as human resource development for a graded, decentralised structure for primary health care.

In his first pioneering community health project at Mandwa⁶, across the harbour from Mumbai, Dr. Antia trained semi-literate tribal village women to detect leprosy and offer services for prevention of deformities and rehabilitation. It is interesting to note that the concept of self-care by communities became a recognised part of the control programme almost three decades later.

In the last decade he painted a far wider picture, linking health care to overall development, good governance and human rights. One of the prime players in the consolidation of the National Rural Health Mission of the Government of India, he played a pivotal role in ensuring the representation of cumulative NGO experiences for shaping the Mission.

With morning and passion still in his heart, Dr. Antia, 85 years young, passed away on 26th June 2007 after a brief illness. He is survived by, his wife Arnie, daughter Avan and son Rustom and their families. Both children are reputed scientists in their respective fields of marine and mathematical biology. His two Foundations, pledged to continue his legacy, are in the hands of those he nurtured and inspired over three decades. It is a legacy of looking at problems in a holistic manner; of integrating rather than compartmentalising the disciplines involved. It is this thread that went through all his work –

plastic surgery merged with rehabilitation and research;
laboratory-based sciences merged with the field-based disciplines;
Neurology merged with immunology to combine still further with the 'mind' as the field of psychoneuroimmunology.

Perhaps the most important integration was in his belief which he instilled in the minds of his students and staff that they have the ability to work in diverse fields and disciplines.

Surgeon extraordinaire, renowned public health activist, a noted biomedical researcher and a founder of over 15 national associations, Dr. Antia had to his credit over 350 multidimensional publications and five books. This year's end will see the publication of his

memoirs. Many honours came his way for surgery such as the Hunterian, the Malinac and the Fellowship of the American College of Surgeons. He was elected to the highest scientific bodies in India and the nation bestowed on him the Padmasri in 1980 and the G.D. Birla International Award for Humanism in 1994. He was also nominated twice for the Ramon Magasaysay Award. But the award treasured most was the one given to him by a leprosy patient who boldly threw a prosthetic footwear designed by him at his face; that he said was the mark of truly successful rehabilitation of a cowed down leprosy patient.

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References

- Antia NH, Buch VI. Transfer of an abdominal dermo-fat graft by direct anastomosis of blood vessels. *Br J Plast Surg*, 1971; **24**: 15–19.
- Antia NH, Buch VI. Chondrocutaneous advancement flap for the marginal defect of the ear. *Plast Reconst Surg*, 1967; **39**: 472–477.
- Antia NH. The significance of nerve involvement in leprosy. *Plast Reconst Surg*, 1974; **54**: 55–63.
- Antia NH, Shetty VP (eds). *Peripheral nerve in leprosy and other neuropathies*. Oxford University Press, Delhi, 1997.
- Antia NH, Shetty VP, Mehta LN. Study of the evolution of nerve damage in leprosy. *Lepr Indian*, 1980; **52**: 3–25.
- Antia NH. An alternative strategy for health care? The Mandwa Project. *Econ Polit Wkly*, 1985; **20**: 51–52.

Dr. N.H. Antia (1922–2007)

In earlier years, leprosy patients were treated and looked after by full-time leprologists. Many of them were general physicians and had taken up the work with a missionary zeal. If the patients had any medical or surgical problems, it was impossible for them to avail themselves of the services of these specialists due to the severe prejudices prevailing at that time. Leprosy patients could not gain access to general hospitals, let alone being admitted into the wards or operated on in the operation theatres. Dr. Noshir Antia was one of the pioneers who came forward to provide his special services to neglected leprosy patients. Dr. Paul Brand, an orthopaedic surgeon, dashed into the field first, and gave new useful limbs to deformed patients. Dr. Antia, as a cosmetic surgeon, gave a new look to those patients who were disfigured. These two surgeons changed the lives of leprosy patients from being subjects of charity to becoming useful citizens with dignity and a social status.

After graduating from Grant Medical College, Mumbai in 1945, Dr. Antia did his surgical training in England. He had the good fortune to work under the famous plastic surgeon, Sir Harold Gillies, who became his mentor. He started surgical practice in Pune, and it was at this time that the plight of disabled leprosy patients came to his notice. At an old leprosy asylum

in Kondwa near Pune, he started reconstructive surgery, correcting the deformities of the patients. The technique of temporalis transfer was first devised by Antia and was subsequently practiced by several surgeons to save the eyes of patients. Different techniques were applied to build up depressed noses. Cosmetic surgery involving the face and lips gave a new appearance to the patients. He was practising and demonstrating these techniques in general hospitals, and thereby was able to break the prejudice and discrimination against leprosy patients who were refused treatment in general hospitals.

With the encouragement of Sir Harold Gillies, Dr. Antia went over to plastic surgery. He joined the J.J. Hospital in Mumbai and established the Department of Plastic Surgery, which was later named the Tata Department of Plastic Surgery. In the same department he continued surgery of leprosy patients. Sir Harold Gillies visited Mumbai to see his work, and Dr. Antia brought him to attend the conference of the Indian Association of Leprologists at Mumbai in 1959.

Dr. Antia did a stint in laboratory work at the National Institute of Medical Science, Mill Hill, London, and had the opportunity to work under Sir Peter Medewar from 1968 to 1970. I happened to go to work at Mill Hill in 1971 and the name of Noshir Antia was still resounding, with Dr. Rees talking many times about him and his work.

A major achievement of Dr. Antia was the establishment of the Foundation for Medical Research in Mumbai. With grants from PL 480 funds, and from several funding agencies, the FMR took up fundamental research in several aspects of leprosy; immunology and nerve pathology in leprosy formed major subjects. More recently a lot of work has been taken up on research in tuberculosis: in a recent visit to the institution, I was delighted to see a new board, 'Centre of Excellence for TB'. I also found work on a different subject – on medicinal plants.

Dr. Antia was a multifaceted personality. From general surgery to reconstructive surgery to laboratory research, he moved on to social and preventive aspects of medicine. He established the Foundation for Research in Community Health (FRCH), and I got a glimpse of its work around Mumbai. Talking with those concerned I could understand that the project of FRCH near Pune is very extensive, involving several aspects of rural health, including training of community health workers.

As a person Dr. Antia was quite aggressive, with an unflinching ambition to expand the fields of work in which he attained considerable success. I had several occasions to meet him and discuss various subjects which used to be very stimulating. I had him on the Scientific Advisory Committee at the Central Jalma Institute for Leprosy and he contributed a lot with his suggestions for the research programme.

The eminence of Dr. Antia's work was duly recognised. He was the recipient of several prestigious awards including the Hunterian, Birla International Award and several others as also the Padmashri from Government of India. After living an illustrious life, he passed away on June 26, 2007. He has trained many scientists who have now become well known and will carry out and further develop the work he has started.

Dr. K.V. DESIKAN