

Obituary

Narayana Panicker Kochupillai
(10 February 1939–26 February 2024)



It is an honour to write a biographical sketch on my teacher and mentor, but for the fact that it is being done on the occasion of his passing away. Professor Narayana Panicker Kochupillai, who was born on 10 February 1939, breathed his last on 26 February 2024 in Bengaluru, his home for a large part of his post-superannuation life.

After his initial education in Kerala, Dr Kochupillai came to Delhi to join the All India Institute of Medical Sciences (AIIMS) as a medical undergraduate. Kochu, as he was called by his friends and peers, belonged to the 3rd batch of AIIMS, an institute still finding its place in the pantheon of Indian medical institutions. Little would Professor Kochupillai have known in 1958 that this institution would evolve into one of India's most renowned and respected centres of learning, and that this would happen in no small measure due to the contributions of astute medical scientists such as him. Dr Kochupillai would really never leave AIIMS, physically residing in the campus till he and Dr (Mrs) Vinod Kochupillai retired from service, but mentally remaining anchored to the ethos and culture of his alma mater till the very end. As an interesting aside, Dr Kochupillai's undergraduate batch contributed six faculty members to AIIMS, including Professors J.N. Pande, S.C. Manchanda, Ramesh Sarin, O.P. Malhotra and Gomathy Gopinath.

After completing his postgraduation in Medicine, Dr Kochupillai gravitated towards the world of hormones, which allowed him to pursue his interest for clinically relevant laboratory research and enquiry. A series of highly cited publications written along with senior colleagues, including Professor V. Ramalingaswamy (who served as Director, AIIMS for a decade, followed by a stint as Director General, Indian Council of Medical Research), Dr M.G. Deo and Dr M.G. Karmarkar, heightened his interest in iodine nutrition and its role in goitrogenesis. Dr Kochupillai brought in the key element of measuring thyroid hormones using radioimmunoassay, adding a critical facet to the story of understanding the pathogenesis of goitre formation, and the downstream impact on human physiology and disease. He was deeply inspired and mentored by Professor Ramalingaswamy, who not only encouraged him in his pursuits in laboratory science, but also engendered in him the need to learn not only clinical and laboratory medicine but also do that in the context of public health needs.

He received the prestigious Samuel Berson Fellowship to work in the laboratory of the legendary Professor Rosalyn Yalow, where he became adept at preparing, purifying and stabilizing high specific activity thyronines labelled with ^{125}I . This skill and funding support from the Department of Science and Technology led to the setting up of the radioimmunoassay laboratory at AIIMS, as a consequence of which in-house

assays became available for research and patient care. With this broad-based exposure to clinical and laboratory endocrinology, Dr Kochupillai embarked on a series of epidemiological surveys and field visits to understand the terrain, topography and environment of the sub-Himalayan belt, which was home to a large population afflicted by the spectrum of iodine deficiency disorders. At the same time, he became interested in the thyroid–brain axis of neonates and children. His work showed that cretinism was merely the tip of the iceberg when it came to the impact of iodine deficiency in the neonate, and that children living goitre endemia had a drop in their measurable intelligence, as quantified by the intelligence quotient (IQ) and other validated metrics of neurological development.

His ability to utilize laboratory techniques to enhance our understanding of the extent of impact of iodine deficiency disorders was best exemplified by his work on congenital hypothyroidism. In pivotal studies conducted in the districts of Gonda, Basti, Bahraich and Gorakhpur in eastern Uttar Pradesh, he got birth attendants to sprinkle a few drops of blood at the time of cutting the umbilical cord on to a Whatman filter paper. Once the blood spots dried, they would be packed into a stamped envelope, on which the address of his laboratory at AIIMS was already printed. When these filter paper-containing envelopes were received in the laboratory, discs of dried blood were punched out, the blood eluted and the resulting eluate assayed for thyroid hormones and TSH. This study showed that the incidence of congenital hypothyroidism in iodine-deficient areas of India was 10–20-fold higher than that reported in the iodine-sufficient world, and that it was causing a massive negative impact on human development in these regions.

This along with several epidemiological surveys conducted with colleagues at AIIMS, resulted in the inclusion of goitre control measures in the 20-point programme of the Government of India and that initiative transformed eventually to what is known as the National Iodine Deficiency Disorders Control Programme.

My personal interaction with Professor Kochupillai commenced with his evocative lecture on thyroid disorders to our undergraduate class. His clinical description of hypothyroidism has stayed in my mind till today, including, but not limited to his enunciation of the word 'torpor' when describing a severely hypothyroid adult. I saw more of him as a postgraduate when I became one of the few (if not only) MD Medicine postgraduate residents whose dissertation was anchored outside the parent department—in my case, it was with Dr Kochupillai in the newly minted Department of Endocrinology. I can say without an iota of doubt that this experience prompted me to branch off into the subspecialty of endocrinology—a decision I feel has stood the test of time.

Later, when I joined the Department of Endocrinology as an Assistant Professor, Professor Kochupillai was the Head of Department. Around that time, concerns were emerging in the literature that exposure to large amounts of iodine was precipitating thyroid autoimmunity. This provided me an opportunity to leverage my training in thyroid autoimmunity along with Professor Kochupillai's immense clinical and public health expertise to investigate the epidemiology of thyroid

disorders in the post-iodization phase. I, along with Dr Raman Marwaha, a clinician scientist at the Institute of Nuclear Medicine and Allied Sciences (INMAS), Defence Research and Development Organization (DRDO), had the privilege of accompanying Dr Kochupillai in a series of surveys in areas that had previously been iodine-deficient, but now had been covered by the country's iodization programme. It was an unforgettable experience, the memories of which remain imprinted in my mind till today—driving through the unpaved roads in rural Uttar Pradesh, tramping the dusty lanes of villages in districts which were unheard of in the sanitized environments of urban India, stopping by to admire the lush fields irrigated by water from the rivers Sarayu and Ghaghara—all in an attempt to conduct goitre surveys, perform neurodevelopment tests, draw blood samples to measure thyroid hormones and thyroid antibodies, and on occasion to track down the last known cretin in a particular village.

Much has been said about Dr Kochupillai being a strict disciplinarian, with a stern visage and someone who would merely not tolerate nonsense, but would unhesitatingly call a spade a spade, on most occasions without mincing words! That did describe his persona in AIIMS—but Professor Kochupillai in the field was a totally different person. He was affable, sporting, and carried no baggage of being this highly accomplished and recognized clinician scientist—he was one of the team, happy to shoulder his share of responsibilities, and step up to navigate the challenges thrown at us by the district administration. Staying in derelict government guest houses, where uninterrupted electricity was a mirage and food was inedible to say the least—his zeal and passion to pursue what he thought (and rightfully so) was important, needed urgent

attention and prompt and sustained resolution was a learning which will never leave me.

Dr Kochupillai's ability to provide a holistic oversight of a scientific problem, combining not one, not two, but skills and training (didactic and experiential) in three domains—clinical medicine, laboratory science and public health—made him a force to reckon with. He was an indomitable crusader relentlessly pursuing his vision of a country freed from the scourge of iodine deficiency. His erudition, wisdom and scientific contributions were recognized by the award of Fellowships of the Indian Academy of Science, Indian National Science Academy and National Academy of Medical Sciences. He was also bestowed the prestigious Dr B.C. Roy Award and the Padma Shri by the Government of India.

Dr Kochupillai left behind scores of students of endocrinology who will remain forever beholden to him for the mentorship he provided. We shall always remember his single-minded devotion to the cause that he espoused for the entire duration of his professional career, that of iodine nutrition and thyroid disease—a focus which probably matched that described in the Mahabharata in the tale of Arjun and the eye of the fish. The country will always be grateful to his immense contribution in our fight to eliminate iodine deficiency disorders.

May his soul rest in peace.

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