Heeling Touch

Foot and ankle specialist Dr Gowreeson says how he is taking his speciality to the next level with cutting-edge research

By **NITHYA SUBRAMANIAN**

One of the most popular Greek myths is that of Achilles and how his heel was the weakest part of his body that led to his death. In modern times, the foot and the ankle have become two of the most vulnerable parts of the human body with ankle sprains accounting for almost half the sports injuries.

Dr Gowreeson Thevendran is a Singapore-based foot and ankle specialist who is not only passionate about finding new treatments for this area of orthopaedics, but also involved in bioengeering research to create bioreabsorbable implants. His pleasant and reassuring demeanour makes him popular with his students.

Born in Malaysia and educated in the UK and Canada, Dr Gowreeson (41) spoke to *India Se* in great detail about his areas of specialisation and his passion for research and teaching.

India Se: Tell us a little about your background/education. What were your formative years like?

Dr Gowreeson: I was born in Kuala Lumpur, the second of three children, but grew up with my grandmother in Seremban, a smaller town about an hour away. Childhood memories revolved around climbing rambutan trees, cycling through tiny villages and playing Saidina (Malaysian version of Monopoly) with my many cousins.

Primary and secondary schooling was at St Paul's Institution, Seremban. My aunt, who helped raise me, was a teacher and so I got nipped in the heel if I didn't keep my grades up. But I did spend a lot of time doing sports which I was passionate about from a young age. I was a sprinter at district and state level, played hockey for Seremban West and also tennis. I owe it largely to grandma for my being conversant in Tamil. My culinary skills I owe to my aunt. At 18, I moved to the UK and commenced my medical undergraduate programme at the University of Bristol. After Bristol, I moved to London where I started and completed my basic and higher surgical training from 2001 to 2009. My sub-speciality fellowship training was spent in Vancouver, Canada (one year) in adult foot and ankle surgery, Harvard University (four months) for research, Chelsea and Westminister Hospital, London (six months) for sports surgery and the Royal Liverpool University Hospital (six months) for complex trauma surgery. In 2011, I was offered a job at Tan Tock Seng Hospital, Singapore to initiate and develop the newly formed foot and ankle unit. It was a great opportunity to be closer to home and take foot and ankle treatment in Singapore to the next level.

India Se: How did you choose medicine as a career?

Dr Gowreeson: It was never a single event or experience, rather a culmination of different passions. I was always a hands-on kid, never shying away from carpentry at home, gardening or simply repairing appliances. As I got older, I developed a knack for oration and realised quickly that I cherished human interaction. I would be fibbing if I said having Indian parents and being part of a larger Indian community in a multicultural society had no influence whatsoever in my choice.

India Se: What prompted you to choose orthopaedics as an area of speciality? And why did you further choose foot and ankle surgery?

Dr Gowreeson: This came somewhat naturally, given my passion for hands-on practice. It became apparent to me very early in my training that surgeons were truly privileged to be able to engage their head, heart and hands with every operation they perform. Orthopaedic surgery in particular was an easy choice – the surgeries were fun yet challenging, they were constantly evolving, the vast majority of patients got significantly better and were visibly happier and, given our main objective is to improve function and thus quality of life, the emotional burden of the speciality is relatively low. An inspiring foot and ankle surgery mentor told me I had 'what it takes'. Looking back, the choice was evident – I immensely enjoy research, new practices and teaching. Foot and ankle surgery is the newest and has been the most rapidly

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expanding orthopaedic specialty in the last decade. Newer surgical techniques, more effective non-operative methods and a surge of new research data have meant foot and ankle surgeons are truly riding the wave of innovation while making the biggest difference in the lives of their patients.

India Se: You have a keen interest in cartilage regeneration and bioreabsorbable implants. Could you please share some details?

Dr Gowreeson: Cartilage is the Holy Grail of orthopaedics. Cartilage has no regenerative capacity and hence end-stage cartilage damage in joints today have to be replaced with a prosthetic implant. In Singapore, over 20,000 knee replacements have been done in the past decade in public hospitals alone. These don't feel the same, don't last forever and cannot function as well as native joints. As orthopaedic surgeons, we strive to give our patients the best function possible, for as long as possible. This has been the main impetus for my cartilage research. My interest in bioreabsorbable implants was spurred by new technology implants made available from Germany. Magnesium-based alloys that provide the necessary implant strength and yet fully dissolve within the body after a year obviate the need for implant removals. This novel technology also negates concerns with metal detectors at airports and does not cause metal artefacts with future scans. I pioneered the use of these implants in Singapore back in 2015 and currently have the largest series of patients with these implants, mainly for foot surgery and trauma surgery. I am also involved in bioengineering research with NTU to hopefully widen the application of this technology to many more implants in orthopaedics.

India Se: What are some of the common problems that people encounter in the foot and ankle areas? How can they be avoided?

Dr Gowreeson: Aside from trauma, the commonest foot and

ankle problems my patients have are deformity and sports injuries. Common deformities include bunions, ankle arthritis and flatfoot deformity. The most prevalent sports injuries include ankle ligament tears and Achilles tendonitis. I genuinely believe the vast majority of foot and ankle problems can be prevented with good footwear and proper muscle conditioning exercises. Conditions such as tendonitis, instability and ligament tears can be minimised with proper muscle training and conditioning.

India Se: Do you see more Indians, especially women, complaining of bone-related issues? Why is it so?

Dr Gowreeson: It is not a problem unique to Indians but found among Asians. Bone strength is very dependent on regular exercise and a balanced diet. Humidity and the Asian culture have historically accounted for the lack of physical activity among our women. Fortunately, this is not so much the case with the newer generation. A restrictive diet, more so among Indians, has also sometimes resulted in fragility fractures. Needless to say, the biggest endemic yet is Type 2 diabetes and its associated foot complications. I do see a fair number of Indian patients, some overweight, with poorly controlled diabetes having non-healing ulcers and insensate feet. My advice: prevention is better than cure. Good footwear, regular foot hygiene and proper orthotics to support weaker parts of the foot can make all the difference. Ultimately, good blood sugar control among diabetics is the single most pertinent prognostic factor.

India Se: Do you recommend any precautionary measures that can be taken to prevent these problems?

Dr Gowreeson: Be active, and be consistent. For newbies, I always advocate a graduated training programme. No matter whether we take up yoga, Pilates ,trail-running or cricket, our bodies require gradual conditioning before we start a new activity or sport. Sustaining performance requires regular resistance training and perhaps even a trainer / therapist.

India Se: You are also keen on sports medicine. How important has this become in today's world?

Dr Gowreeson: My interest in sports medicine has stemmed from my own passion for sports. I relate easily to sportspersons and take great satisfaction working with these patients as they are largely a motivated lot. With increasing sports participation, and at an increasing age too, sports medicine has become an integral part of today's society. Athletes are motivated to return to their sport as soon as possible without risking repeated injuries. Sports medicine facilitates this objective.

India Se: You also seem to enjoy engaging with the student community mainly as a teacher. What draws you to teaching?

Dr Gowreeson: I have had the opportunity to teach at the Tan Tock Seng Orthopaedic Residency Programme and as the Programme Lead for the Lee Kong Chian Imperial School of Medicine. Teaching is an innate trait for most of us in the surgical fraternity. Surgery, after all, is a craft passed on uniquely through a mentor-mentee relationship and we were all once at the receiving end of that relationship. It goes both ways – the teacher benefits as teaching reinforces one's understanding of the condition and it helps to inspire the next generation of surgical progeny who are vital to the existence of our profession

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India Se: Could you briefly tell us about the voluntary/community programmes that you are involved in?

Dr Gowreeson: This is something I am constantly eager to do more of. During my training days, Raleigh International and Doctors Without Borders were good avenues to contribute medically. As I mature and do more clinical work, I have swung towards doing more non-medical voluntary work. I am lucky to have a wife who is just as passionate in pursuing this call and our current organisation of interest is Cycling Without Age – a voluntary group that picks up the elderly and disabled in a trishaw so they can experience the outdoors and the wind in their hair.

India Se: Tell us a little about your family. How do you balance your work and life outside it?

Dr Gowreeson: My wife, Lekha, and I have two boys – Lukesh, aged three, and Nolan, who turns one next month. You can imagine the lively household I return to each evening, and the activity-packed weekends we have. Lekha works in the energy efficiency space. She is passionate about the environment, sustainability and promoting awareness. She is truly the glue that holds our family together. I have had it lucky when it comes to striking work-life balance, for two reasons: I truly enjoy what I do and I am blessed to have a family that understands the demands of the job. Gandhiji said it best: Happiness is when what you think, what you say and what you do are in harmony.