

Letter from Mumbai

A LITTLE OF WHAT I LEARNT AS THE ENFORCED LOCKDOWN CONTINUES

We have been compelled by law and reason to stay in our homes, away from friends and relatives and lead cloistered lives. This is especially so for those, like me, in the evening of our lives. Those young in years fret under such restrictions. Their ebullience demands outlets denied at present. It is not uncommon to hear them voice thoughts on boredom. Blessed with an insatiable curiosity on the wonders of nature, I have indulged myself by using the worldwide web and that great teacher—Professor Google—to continue my learning. May I share an interesting series of findings on giraffes, lizards and spiders?

Lest you wonder whether these are fit subjects for a medical journal, let me hasten to counsel patience as you read on.

Giraffes are prodigies of nature. They have provoked the curiosity of physiologists who have pondered the mechanisms that govern blood flow to the brain when giraffes hold their heads aloft and when they are drinking from a pond. Why do they not fall comatose when their necks are erect or suffer from ruptured intracranial arteries when quaffing water? Studies showed that their blood pressure measured 220/180 mmHg when they reach for leaves on the branches of trees, explaining cerebral blood flow. Scholars elucidated the role of the rete mirabile and other mechanisms in ensuring that whilst the heart pushes blood out at a pressure of 220 mmHg, the pressure in cerebral arteries remains around 110 mmHg. As giraffes lowered their heads, about a litre of blood pooled in big veins in the neck. This reduced the quantity of blood reaching the heart and thus the brain. The high blood pressure does cause some hypertrophy of the cardiac muscle. Mutations in five genes ensure that unlike in humans, this is not accompanied by stiffness or fibrosis. The other conundrum pertained to the absence of oedema in the lower limbs despite the high blood pressure when the animal was feeding, standing, walking and running. Studies showed tight, elastic connective tissue in their legs which compressed the soft tissues and prevented fluid from accumulating. Their arteries also show thick walls near the knees that act as restrictors and lower pressures in the distal legs. I recommend a study of the papers by Aalkjaer and Wang¹, and Petersen *et al.*² for more interesting details.

Lizards too teach us lessons. Limits imposed by our lung capacities restrict the amount of time we can spend under water. We must, perforce, surface from time to time, exhale spent air and take in fresh air. When threatened by predators, some diving arthropods have evolved techniques to breathe without resurfacing for 15 minutes or more. Caribbean anoles—small lizards with throat fans—can stay under water for 18 minutes or more. The anoles studied by Boccia *et al.*³ are able to retain a bubble of air in a plastron between the cuticle around their snouts and the surrounding water. The anole expels air from its lungs into this plastron and then takes it back into the lungs. Studies show that as they did so, the carbon dioxide in the plastron increased progressively and the concentration of oxygen reduced. By 15–18 minutes, the oxygen levels were so low that the anole had to resurface and replenish air in the lungs and in the bubbles they had created around their snouts.

Equally interesting are diving bell spiders, who spend their

lives in water. As their name suggests, they have mastered the art of weaving a diving bell web in which they trap bubbles of air. The web is anchored to submerged stems of water plants. When the oxygen level in this bell falls, the spider rises to the surface and traps a bubble of fresh air in the hair over its abdomen, which it releases into its bell.⁴

Can these lessons help us devise techniques for better access to oxygen by ill patients?

SOME ADVANTAGES OF USING OUR SENSES OF HEARING AND TOUCH TO SOOTHE THE PATIENT'S EMOTIONS

Any senior and respected clinician will tell you of the importance of listening carefully and patiently to the patient and family. Quite apart from the invaluable data and clues to diagnosis that can be gleaned thus, is the comfort and confidence it generates in the anxious, sick and tense patient. Within minutes, there is evident relaxation of the patient's muscles and increase of confidence in the physician as their relationship is strengthened.

Not as well recognized is the role played by gentle and reassuring touch, evidence of care displayed by us and soothing rituals.

Most of us, in India, have seen ill individuals brought to temples, mosques and churches and to those respected as seers. The atmosphere in places held as sacred by the patient and family, the calm and unhurried manner in which the priest and others rally around, listen, recite mantras in a gentle rhythm and carry out rituals are therapy for the ragged emotions of the patient.

The application of the priest's cool hand to the fevered brow adds physical relief. Massage—perhaps with herbal oils—as in the ayurvedic clinics in Kerala, has proved of immeasurable benefit to patients with a wide variety of symptoms and signs. Such measures have been shown to reduce the patient's heart rate and blood pressure and release oxytocin into the blood stream. These enhance a sense of equanimity and comfort.

We can adopt similar measures with equal success in our own clinics. Letting the patient unburden himself of woes other than those of medical import can also help the physician's attempts at treating their symptoms. It is possible that your own wisdom and experiences might enable suggestions that could help assuage non-medical problems faced by the patient. Reducing distress in the patient's mind by every means available to us will benefit the management of the patient's illness as well. After all, the mind plays a major role in ensuring physical recovery.

There is much to be said in favour of adding the role of the well-meaning priest or the *shaman* of folklore to our armamentarium used to help our patients.

WHEN CONSENT IS NOT ACCEPTED BY JUDGES AS A DEFENCE

Informed consent is a basic principle in medical practice. When properly recorded on the patient's case notes, it serves to protect the clinician and institution.

Medical ethicist, Dr Michael Cook, noted on his website the instance where Brendan McCarthy (termed *Dr Evil*)—a British

‘body modification artist’—was found guilty of causing harm to his patients despite his patient having consented to his operations.⁵ British law views the infliction of bodily harm *with no good reason* seriously even though the patient may have consented to it. ‘Whether there is a *good reason* in the case under discussion is a matter for the courts to decide.’

McCarthy had performed tongue-splitting and nipple removal. Since the procedures posed a serious risk to health and were performed for no good medical reason, the Court of Appeal turned down McCarthy’s plea on the grounds of having obtained consent.

Dr Cook emphasized that any risky, potentially harmful cosmetic procedure requested by a vulnerable patient may face scrutiny. As pointed out by Dr Sanjay Pai in a personal discussion on the topic, such judicial analysis could also be extended to caesarean sections performed in India in order that the birth of the child occurs at an auspicious moment when a vaginal delivery would have been safe.

OLD-TIMERS YEARN FOR LANDLINE TELEPHONES

The advent of mobile phones and their ready availability have been widely welcomed, and for good reason. Many will recall the period where, as with motor cars, there were waiting lists, the inevitable use of strings that could be pulled to jump the queue and the glee with which the arrival of the telephone was greeted, especially when your neighbours were still without it. Those are now relegated to history. Mobile phones are readily available to all and sundry.

We see the many benefits that have accrued to those who could never have dreamed of a landline—small farmers, fisherfolk, labourers, immigrant workers and other daily-wage earners. The well-to-do, of course, revel in their phones that appear to get smarter almost every month. Some have termed the new models as avenues to the internet and cameras with attached telephones!

We are empowered with the ability to communicate with loved ones, friends, colleagues and others wherever we may be located and whenever we wish. And yet, we appear to be some way from Utopian communication. Low grumbles have given

way to ‘forehead-smacking exasperation’ and voiced complaints that have yet to become vociferous. The causes include ‘dropped calls’, ‘weak signals’, ‘overloaded cell towers’.⁶ The consequences are inability to hear what your caller is saying and, worse, sudden break in communication. This can be catastrophic in an emergency. As the numbers of cell phones increase, so do these problems.

Especially troublesome for ageing persons is the lack of clarity of sound. It is not uncommon to see a middle-aged individual repeating, ‘Hello’ into his mobile phone as he struggles to decipher what the voice at the other end is attempting to convey to him. Exasperation is evident.

Landlines are often preferred by the elderly as the quality of sound and clarity of voice are much superior to that available on mobile phones. The fixed locations of these phones in home and office also ensure that we do not need to search for them, which is crucial in cases of urgency. Brianna lists other advantages.⁷

The move to discard landlines may not be such a good idea, especially if you have family members in their anecdotage.

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