As one who has done medicolegal asbestos reports now for over 25 years, I remember distinctly the first case I did. I was recently asked to give a talk for three hundred asbestos victims and their families at a symposium hosted by the local asbestos association (QADS) in Brisbane and in preparing the talk, I reflected how I once would have done this, encompassing detailed CT scans of all sundry manifestations of the disease and aspects of causation and pathogenesis. However, as I have matured, I have opted to give a simple overview, not of pathology but from the aspect of my personal experience of asbestos and how it affects people. Thus my "slides" (as they no longer slide) contained little more than one word for each letter of the alphabet and this is the substance of this paper.

It was one summer afternoon in the 1980's, not long after I had taken up a post as thoracic physician at The Prince Charles Hospital, Brisbane, that my late father, a local GP asked me to see a patient of his with mesothelioma. The problem was that although the patient had served as a major in New Guinea during the war, no one could find out how and when he had been exposed to asbestos. I called on him at home as it was within walking distance of the hospital. It had neat-trimmed paths and an immaculate lawn, wood and Cyclone wire fence, and tall front steps leading up to his modest high-set timber house, post-war and not the stately Queenslanders of Ascot. He invited me into in his lounge room with its period swirling brown carpet, given a cup of tea and chatted with him about life, the war and his occupations. He was a thin man with dark hair, neatly trimmed and had that bearing majors have even in retirement. In my thoracic training in Melbourne I had been fortunate to have learnt a methodical approach to an occupational history from Dr Jim Milne, an Occupational Physician with whom I used to do a session each week as well as visiting work places. I elicited that my major had been seconded to "Small Ships" in New Guinea, a section of the Army (and not the Navy) and it was there he had been exposed to asbestos. I can't remember much after this other than I submitted a detailed medicolegal letter to the Repatriation Department and not long after his mesothelioma was attributed to his military service and for which he was in receipt of a pension. He died sometime later but his wife was given a widow's pension and lived more comfortably as result. Ironically and sadly, I recognised his surname in the list of passengers who perished on Flight MH 17 over the Ukraine this year; his son and daughter-in-law.

Thus I had been unwittingly inducted into medicolegal work with this first and successful case. It taught me three lessons; the need for a meticulous occupational and life history, the need for comprehensive and objective medicolegal reports, and finally, that we are fortunate to live where the rule of law applies and where just compensation can be achieved through the correct legal processes.

A. Asbestos is a word not a sentence. Many a patient has been "spooked" by the word asbestos, expecting a life of misery and pain, leading to death by suffocation, or cancer. It is as if someone has pointed the bone at them and that the Sword of

Damocles sits above their head, ready to fall at any moment. Their equanimity has been shattered as they live diminished lives from then on. However, for most people with asbestos diseases, life continues much the same, lung function not always deteriorating and the annual chest radiograph much the same as it was last year. The truth is that most people die with asbestos disease and not from it, and few develop mesothelioma or lung cancer. Indeed it is rare for me to find a new lung cancer or mesothelioma in patients I review annually in my clinic. For most, it is not a death sentence; only for an unlucky few. However, for many it is as if they have been cursed.

B. Breathless to many a layman, equates with being low in oxygen. I even see general practitioners who have this misperception. As asbestos diseases often cause some stiffness to the chest wall and lungs, the patient experiences breathlessness, when in fact their oxygen saturation is normal. It is this alteration of chest wall and lung mechanics which sometimes leads to overzealous and inappropriate prescription of oxygen; a costly error which also leads to premature invalidity, anxiety and reduced quality of life. Functional dyspnoea due to anxiety about “asbestos” is also common.

C. CT scanning of the chest is an essential investigation in asbestos disease but a common problem I see is the unnecessary and overzealous use of CT scans both by general practitioners and lawyers alike. Notwithstanding newer lower radiation HRCT chest which are becoming more common, I tell patients that any added benefit of a CT chest in terms of seeing small opacities in “blind spots” not well visualised on plain chest radiograph is outweighed by the higher radiation exposure. There is no place for annual CT chest in most patients with asbestos diseases.

D. Death from asbestos disease is not the usual outcome in the vast majority of sufferers. Most die of other causes, sometimes with their end hastened by the co-morbidity of asbestos disease, particularly in those with abnormal lung function. The vast silent majority of patients have pleural plaques, in varying severity, and by and large these are not a cause of death. Only a small minority develop mesothelioma or lung cancer as result of asbestos exposure.

E. Exercise is important in maintaining fitness in these patients, but more still, in reducing the common tendency to gain weight leading to obesity. Indeed, obesity in our community is the commonest cause of a restrictive lung function, and the added impost of obesity in addition to asbestos disease leads to a compounding effect; worsening lung function. Obesity is a confounding factor in asbestos disease, making a true assessment of the extent of the asbestos burden more difficult for the

clinician and also making medicolegal assessments of the degree of impairment more subjective. Weight loss in the obese is accompanied by improved lung function regardless of the underlying cause of the lung disease.

F. Follow-up annually by a chest physician I think is important, as these patients usually have slowly progressive disease and are at more risk of lung cancer and mesothelioma. Chest pain is also common. Although some chest physicians do not recommend annual review, I think an annual chest x-ray, lung function and clinical review is the least we can do for these patients and the experience is generally reassuring and allays anxiety. The finding of a steady decline in lung function also assists lawyers in cases of potential litigation or compensation where a statute of limitation may exist if not reported in a certain time.

G. God and the spiritual dimension to a patient's makeup are often overlooked and in my experience, the spiritual dimension to suffering from a disease remains the unspoken elephant in the room for those who find solace in religion. I tell patients who believe in God that God made asbestos, and thus it invokes the need for the patient to have a conversation with God about this matter. He also made silica and coal dust, so all things in Creation have their place; just not in our lungs. It was Adam and Eve who were disobedient, and all things followed from that. We have created an imperfect world.

H. Homeopathic medications abound, but most do not substantiate their therapeutic claims with peer-reviewed scientific papers. While prescription medications have to jump through many hoops to be released for general consumption, homeopathic remedies are accepted by blind faith with little questioning as to their efficacy. Thus, I warn patients about unjustified claims about "immune boosters", "liver cleansing drugs" and a whole range of wildly fanciful medications posing under the guise of legitimacy but with no hard facts to support this.

I. Information about asbestos diseases goes a long way to empowering the patient, and reducing undue anxiety. This is available from many sources including from the chest physician and family doctor, local asbestos associations, publications and public lectures and also the Internet. With this information, the patient may end up being more informed than some of the medical practitioners managing the patient.

J. Joking about your asbestos disease empowers the sufferer, by diminishing the gravity of the problem. Humour and light-heartedness about illness reduces the seriousness of the problem and I often remind patient how God afflicted pharaoh with "The ten plaques (sic) of Egypt". I recommend a combination of stoicism and humour to disarm the afflictions of life.

K. Knowing the difference between pleural plaques and asbestosis is essential as I see this error commonly even by radiologist and general practitioners. There is a tendency to call any asbestos disease, “asbestosis” which should be restricted to pulmonary fibrosis caused by asbestos, even in milder cases. Pleural plaques on the other hand are generally found on the chest wall cavity and not usually on the visceral pleural surface of the lung although sometimes they can be.

L. Lyrica (pregabalin) and gabapentin are pain attenuating drugs which have an important role in the treatment of more severe or intractable pain caused by asbestos pleural disease and folded atelectasis (Ref.1). We found that benign asbestos pleural pain occurred in about half of our patients with benign asbestos pleural disease and in over 70% with folded atelectasis, not surprisingly and with no over-representation in patients referred for medicolegal reports. Although the mechanism of action of the pain remains hypothetical, we believe that the pain occurs from irritation of the exposed intercostal nerves running under the asbestos pleural disease. In several places in the thorax, the intercostal nerves are not covered by the internal intercostal muscles and thus remain vulnerable. This is neuropathic pain in contrast to more common nociceptive pain e.g. hitting your thumb with a hammer, and hence the good response to these drugs and indifferent response to simple analgesics.

M. Mindfulness is a mainstream but ancient technique of living more effectively and assists establishing peacefulness and reduces anxiety, particularly about the future, which is a common source of rumination by patients afflicted with asbestos disease. From my experience it helps raise the pain threshold and puts the patient more in control than would happen otherwise. Patients end up happier and better able to cope with the vicissitudes of life (Refs. 2-4). No study has been done to date on mindfulness in patients with asbestos diseases.

N. Neuropathic pain is also reduced by long-acting topical patches such as Norspan and Fentanyl, with the former lasting five days and the latter three days. These drugs should only be used after failed trials of more simple analgesics.

O. Objectivity is demanded of medicolegal reports, and thus, the patient may find that these reports may lack the personal touch and tend to be somewhat dispassionate. It is the job of the medical expert witness to see things objectively and not to side with any one position. This may therefore make the patient feel that the medical expert is not compassionate and that the report is impersonal. It also may contain discussion about what will happen in the future, even decades later, and which is not the normal domain in most clinical medical correspondence (see P).

P. Prognosis is a commonly asked and important aspect of a medicolegal report and it derived from the medical evidence including clinical, radiographic and lung function as well as the general experience of the expert witness who may well have seen thousands of similar cases. Strangely, it is seldom asked in normal clinical medicine, and mostly not expressed in letters to referring general practitioners unless specifically asked by the patient, which I find an unusual occurrence. Doctors are more interested in addressing the present problems than pontificating about possible scenarios in ten or twenty years' time. This in depth crystal ball gazing is very subjective, open to criticism and often incorrect. On the other hand, I have often been struck with the accuracy of my prognosis, when asked to do a supplementary report e.g. regarding disease causation with the hard evidence of a death certificate and an autopsy. Cavafy wrote in his poem, "Wise Men" (Ref. 5).

"*Mortals are aware of present things.*
The gods, full and sole possessors
of all knowledge, are aware of things to come.
Of things to come, wise men perceive
the imminent. Their hearing

at times, in hours of serious contemplation,
is disturbed. The secret sound
of approaching events reaches them.
And they pay it reverend attention. While out in the street
the people hear nothing at all."

Q. Query the need for yet another CT chest as I see many patients who have had numerous scans even within a year or so, with little real justification. Sometimes this CT-mania is driven by general practitioners or chest physicians but equally by lawyers who do these often out of curiosity or just in case something has changed which could then set in motion a legal case.

R. Rumination about one's asbestos disease is a common problem I see which impacts adversely on loved ones and tends to magnify the perception of disease severity and thus ruins the present. Mindfulness and education about the conditions are but two remedies which reduce rumination.

S. Selfless behaviour even with the adversity of disease leads to liberation. It brings freedom whereas selfishness brings bondage. Asbestos societies are full of volunteers even with severe disease, and some even on oxygen, who give generously

of their time and spirit for the betterment of others. They are the true winners in this condition and not those who sometimes with minor disease become self-absorbed.

T. Topical capsaicin cream has a place in the treatment of benign asbestos pleural pain. As the smaller pain fibres also sense heat, the capsaicin found in chillies, "tricks" the nerves which interpret the nervous impulse as "hot" rather than "pain". This can be applied up to three times a day, and is better if the area is covered with plastic wrap and the edges sealed with surgical tape. I tell patients not to touch their eyes or genitals when they are applying it and to use gloves ideally and that they will not smell like a jalapeno. I am not aware of any study of this treatment in asbestos diseases.

U. Uniformity of examination, clinically, radiologically and with lung function makes it easier to compare any suspected change. I recommend that patients go to the same radiologist each time, and have lung function in the same laboratory as this makes it easier to assess if there has been any real change. The same clinician also helps to reduce errors or oversights in clinical examination. This uniformity is also useful for legal teams trying to assess if there has been any real decline over several years and thus reduces inter-laboratory error.

V. Volunteering for those with asbestos disease who have time, brings benefits and should not be restricted to volunteering for the local asbestos association. As asbestos diseases commonly afflict retirees, this cohort in general has both the time and opportunity to help others and this extension of self reduces a tendency to become morose and ruminate about their miserable lot.

W. I have found that I have learnt more about life and myself in the Winters of my life than in my Summers. Thus, asbestos disease may unwittingly bring some benefits for those looking for deeper answers and a less frenetic internal mindset.

X. X-radiation from investigations such as HRCT chest and chest radiographs is not well known by most medical practitioners including specialists. At sea level in Australia the annual background radiation is approximately 1.5 mSv as opposed to Cornwall, UK were it is 7.8 mSv/annum and some parts of the world it is as much as ten to fifteen times that of Australia (Ref.6). A chest-radiograph is about $1/100^{th}$ of the background radiation in Australia and a CT scan about the same as our annual background radiation or one hundred chest radiographs (Ref.7). A flight to Europe from Australia is roughly equivalent to four days' radiation at sea level. Thus, better recognition of this iatrogenic radiation is important in these patients who may be followed up for decades. Indeed, the total iatrogenic irradiation may pose more of a health risk that their asbestos exposure.

Y. "Why me?" is a common question asked by patients, particularly when I sometimes see a wife who washed her husband's work clothes suffering from asbestosis and asbestos pleural plaques when her husband has barely a plaque. This question is also common in those unfortunates afflicted by mesothelioma whose asbestos exposure may have been quite trivial and so long ago. I answer that there is great individual variability in Nature and we can't explain everything. I have seen that philosophical acceptance and resignation brings a degree of peace and raises the threshold of anxiety and distress. Mindfulness helps too.

Z. While not a Buddhist, I have found that a more "Zen" approach to life, mindfulness and acceptance of one's lot brings peace, even in the face of progressive suffering and death. There is enlightenment in a rain drop and in doing the dishes. Each of us has the opportunity to find our own path to enlightenment. There are many rivers which flow into the same great tranquil sea. In a poem by Constantine Cavafy, entitled "Ithaca", his thesis is that we each have our own odyssey and that as we approach each our own Ithaca, our own final destination, it is what we have gained intellectually and spiritually from experience that is our true treasure; not the precious goods and expensive perfumes in our ship's hold (Ref.8). For me the Greek dramatist, Menander (341-290 BC) sums it all up;

« *ὁ σοφός εν αύτῳ περιφέρει την ούσιαν* »…

… "The wise man carries his property within himself".

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