



Medicine for Managers

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Asbestos and Asbestosis

Asbestos is in fact a set of naturally-occurring silicate minerals. They are composed of long, thin, fibrous crystals, often known by their colours; blue, brown, white and green asbestos. It has been mined for over 4,000 years but first happened on a large scale in the late 1800s, used by builders because it was strong and resisted fire, electricity and chemicals and, above all, it was cheap.

Asbestos causes a number of diseases and the health damage which it could cause was known and recorded in documents produced by the Romans.

In the modern world concerns started to be raised in the early 1900s, were widely appreciated by the mid 1920s but asbestos was not properly controlled until the 1980s, after which it was phased out or banned outright. The word 'asbestos' comes from the ancient Greek word meaning 'unquenchable' or 'inextinguishable'.

The recognition of the serious medical consequences of asbestos first came to prominence in the early 1900s when research workers noted increased deaths and lung diseases in asbestos mining towns.

In 1900, a pathologist at Charing Cross Hospital discovered pulmonary fibrosis associated with asbestos during a post-mortem of a young man. Two years later in 1902, the Inspector of Factories in Britain added asbestos to the list of harmful industrial substances.

The first diagnosis of asbestosis was made in 1924 following the death of Nellie Kershaw,

who worked spinning asbestos into yarn at *Turner Brothers of Manchester*. A post-mortem carried out by Dr William Cooke found fibrosis and asbestos particles which led to the diagnosis



Nellie Kershaw

Over 100 years on, asbestos still kills about 5,000 people a year and around 20 tradesmen die each week of past exposure (HSE). The consequences of asbestos are not immediate; they take a very long time to develop.

Trades at risk include shipyard workers, builders, plumbers, boilermakers and, of course, insulation workers.

Asbestosis is a chronic long-term condition resulted from persistent exposure to asbestos. It results from the inhalation of minute asbestos fibres which lodge in the lung and cause chronic inflammation as a result of the body's defence cells trying unsuccessfully to break down and destroy the fibres. The result is increasing damage and scarring over time. Interestingly, the presence of asbestos fibres in the lung is not the full story behind the acquisition of the condition because some people who experience heavy and prolonged exposure do not suffer from the disease.

The characteristic features of the disease are shortness of breath, wheezing, sometimes chest pain, tiredness and lethargy and sometimes clubbing of the fingers.



The disease itself cannot be cured once acquired because the damage is irreversible. The damage imposes an extra burden on the heart because the scarring damages the blood vessels in the lung and the heart has to work harder to force the blood through the vessels. The result may be a deterioration and shortened life expectancy, although this is not invariable.

However, it is commonly not asbestosis itself from which the patient dies but from the development of one of several other serious and life-threatening diseases.

Pleural Thickening. This is a serious lung problem occurring in association with

asbestosis. The pleura cover the lungs and line the inside of the chest wall. Normally the pleura is a soft thin membrane which is lubricated and allows the lung to slide over the inner aspect of the chest wall as the chest wall rises and the diaphragm falls, allowing the lung to expand by negative pressure.

If pleural asbestosis disease occurs the pleura becomes thickened, dry and swells. The elasticity of the lungs is lost and the fibrotic pleura acts as an inelastic coat progressively preventing the ability to breathe in and aggravating the shortness of breath. It may also cause discomfort or pain in the chest. The lungs ultimately may become so inelastic that it is not possible to breathe in with the inevitable consequence.

Mesothelioma is a cancer which predominantly affects the pleura, although it can also affect the lining of the abdomen and intestine (**the peritoneum**) and the heart (**pericardium**). Like the other conditions above, it is normally associated with asbestos exposure.

About two-and-a-half thousand people develop mesothelioma each year and they are most commonly in men aged between 60 and 80. The delay between exposure to asbestos and the development of the tumour is usually twenty to thirty years or even more.

Like the other occupational asbestos-related chest diseases the symptoms are principally breathlessness, chest pain, extreme fatigue and lethargy, persistent cough, weight loss and clubbing.

It is normally diagnosed by chest x-ray and a CT scan, often combined with a positive history for asbestos. Sometimes it may be necessary to drain any fluid which has accumulated in association with the tumour to examine for the

characteristic cells. In some cases a thoracoscopy may be undertaken, which is where an endoscope is inserted into the chest under anaesthesia to visualise and biopsy the tumour.

Chemotherapy and radiotherapy may slow down the progress of the tumour but are rarely curative and surgery can also be used in some cases, especially if the diagnosis is made very early in the tumour history. Sadly the prognosis is poor with only one in two patients surviving a year and about one in ten lasting five years after diagnosis.

Asbestos-related Lung Cancer. This type of cancer shares the same characteristics as lung cancer caused by smoking and by other causes. The symptoms of breathlessness, persistent cough, sputum, weakness and lethargy and chest pain are very similar. As with other lung diseases, X-ray and CT scan are the stalwarts of investigation, together with more targeted tests such as drainage of fluid or bronchoscopy to obtain a biopsy. Like mesothelioma, the prognosis is poor.

Sufferers of asbestos related diseases have provided a rich vein of litigation for solicitors. Claims are based on the nature and frequency of exposure, the precautions taken (or ignored) and the nature and severity of the resulting condition. The amount awarded is based on a set of national guidelines and generally awards may be up to about £65,000.

There are a number of firms of solicitors with lawyers who have particular expertise in asbestos morbidity. Anyone with asbestosis or one of the other asbestos related diseases should ensure that they obtain good advice for what is an unpleasant killer disease.

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