An investigation into asbestos related disease in the dental industry

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IN BRIEF

- Highlights the dangers of the asbestos-based disease mesothelioma.
- Discusses the theory behind the origin of this form of cancer in some dental professionals.

This article discusses the dangers of the asbestos-based disease mesothelioma and the possible origins of this form of cancer in dental professionals. The potential for an increase in diagnosed cases of mesothelioma among dentists and technicians in future is highlighted.

I first became interested in asbestos related disease in dentistry upon reading an obituary for a gentleman named Mr Richard Bourne which was published in the *British Dental Journal (BDJ)* in December 2007.¹ Mr Bourne died on 28 September 2007 following a two year battle with the asbestos-based disease mesothelioma. The article stated that his only known exposure to asbestos was from the tunnels of University College Hospital, London.

This tragic case piqued my interest in the issue of mesothelioma in dentistry and I began to wonder how many others had been affected by this lethal disease. I embarked on research to ascertain how unknown exposures to asbestos may have apparently affected so many leading medical professionals. In my work I specialise in all manner of occupational illness claims and in my personal life I was all too aware of how many of my friends and family were qualifying and practising as skilled dental surgeons, so I undertook further investigations into exactly what these potentially harmful practices were, and what was known about them at the time.

As is perhaps apparent from the increase in stories in the media about claims for

workers exposed to asbestos, cases of mesothelioma and lesser forms of asbestos exposure are becoming more prevalent – with a peak expected over the next five or ten years. Those affected by inhalation of asbestos fibres may be completely symptom free for between 35 and 40 years.² Once the symptoms surface, life expectancy is very short and quality of life deteriorates quickly.

On that basis, the concern raised is that there may be many hard working dental professionals who were perhaps innocently exposed to powders containing damaging levels of asbestos and who may only now be approaching the age at which symptoms may become prevalent. At face value there may be no obvious cause for respiratory problems but it may have a cause of occupational origin.

Asbestos and dental dressings

These grave concerns prompted me to begin investigating research papers from the Royal Society of Medicine that refer to asbestos and dental practice. I first discovered a paper by Dr M. R. Yewe-Dyer written in 1967 and entitled 'The possible adverse effects of asbestos and gingivectomy packs', which explains that mixing asbestos at the chairside could expose both the dentist and the patient to harmful doses of asbestos.³ It concludes with the assertion that 'the use of gingivectomy packs containing asbestos should be discontinued.' The paper goes on to reference key papers of 1935, 1953 and 1955 demonstrating a causal link between asbestos and exposure

and mesothelioma. According to Mr A. Cook, who wrote to the *BDJ* in March 2008 stating he was using such a resin containing asbestos in the Royal Dental Hospital, London, between 1967 and 1968,⁴ the practice seems to have been in use at this time. In his article, Mr Dyer did not specifically mention any particular producers of gingivectomy packs which contained the asbestos.

Additional papers, such as an article created for *Quintessence International* in 1976 by Doctors Bakdash and Frydman entitled 'Asbestos in periodontal dressings: a possible health hazard',⁵ explored the potential threat of the presence of asbestos in dental dressings. This paper cites Mr Dyer's research as a reference and was written with the purpose 'to explore and discuss the various aspects of asbestos and health in general and in the dental office environment in particular.' It specifically examined the amounts of asbestos in various products openly available in America, revealing that The Periodontal Pack Corp of America produced periodontal dressing powders containing 14.29% asbestos by weight. I believe this American dental products manufacturer, known as the Professional Products Company, based in San Diego, may unwittingly be responsible for creating the single largest threat to dental technicians' and dentists' health during the 1960s and 1970s.

In April 1976 the American Dental Association Council on Dental Therapeutics took the decision to no longer accept these products, although producing a statement

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that 'there is no apparent health danger from inhalation to patients for whom asbestos containing periodontal dressings are used since the fibres cannot be appreciably released from the dressings whilst they are mixed and applied.' At that time, the article goes on to conclude, there were only 'several commercially available preparations on the market' which did not contain asbestos.

A lingering concern

However, the question of asbestos related illnesses within the dental sector still lingers on today. The most recent UK article on the subject appeared in the *Lancet* in 1991, entitled 'Malignant mesothelioma after exposure to asbestos in dental practice'.⁶ This research was conducted by four London medics but with close reference to the Health and Safety Executive in Nottingham, and refers to the death of a 60-year-old retired dentist who appears to have been referred to King's College London Medical School with mesothelioma. The implication of this article (although not apparently confirmed) was that the dentist in question

had been exposed to asbestos fibres used in periodontal dressings, but also possibly in paper and powder used for manufacturing prostheses.

Worryingly, the *Lancet* article asserts that the issue of asbestos contaminated dental equipment was not isolated to dressings alone, therefore furthering the problem. It seems that in addition to the use of asbestos in periodontal dressings, there had also been significant exposure to airborne asbestos fibres in the manufacturing process for casting dentures. The article explains that in 1971, one of the authors of the report saw mesothelioma in a dental technician and assumed that this may have been caused from the dust of the dry roles of asbestos paper. According to the 1991 report it was common practice for undergraduates at dental schools to cast a minimum of 40 sets of dentures, and those using this asbestos fibre-based roll are likely to have been exposed. It follows that if it takes 35 to 40 years for symptoms to materialise, then many dentists, dental assistants and technicians may well become symptomatic with respiratory problems now that may

be attributable to using these powders and rolls in the past.

The outcome of these investigations is alarming and should be of great concern to present dental professionals and their families. It is of paramount importance that action is taken to obtain advice for those who believe that they may have been exposed to these substances in the past. It is an unpalatable possibility that a profession dedicated to the care of others should be at great risk of respiratory diseases.

The author would be interested to hear from any readers with further information about the Professional Products Company powders and the asbestos paper and rolls, and would be happy to provide initial advice to those who believe that they may be at risk personally.

1. Ogus H, Bourne R, Richard James Bourne. [Obituary]. *Br Dent J* 2007; **203**: 715.
2. Hillerdal G. Malignant mesothelioma 1982: review of 4710 published cases. *Br J Dis Chest* 1983; **77**: 321-343.
3. Dyer M R. The possible adverse effects of asbestos in gingivectomy packs. *Br Dent J* 1967; **122**: 507.
4. Cook A. Asbestos dressing. *Br Dent J* 2008; **204**: 224.
5. Bakdash M B, Frydman A. Asbestos in periodontal dressings: a possible health hazard. *Quintessence Int Dent Dig* 1976; **7**(10): 61-65.
6. Reid A S, Causton B E, Jones J S, Ellis I O. Malignant mesothelioma after exposure to asbestos in dental practice. *Lancet* 1991; **338**(8768): 696.