Dear reader,

Anyone who has been working in medicine for a long time has probably heard dentists referred to as “only failed medical students” or “overpaid sadistic tooth pullers.” While their medical colleagues may consider them second-class professionals, little is known about the fact that they have already left their mark in history, for good and for worse.

Did you know, for instance, that the inventor of the electric chair was Alfred P. Southwick, a dentist from Buffalo in the USA? Observing the death of a drunken man touching an electric generator in one of his hometown’s factories, Southwick became a driven advocate of capital punishment by electrocution until he died in 1899. While highly debated now and back then, his idea has the dubious honour of being one of the few inventions of the early electrical period to have survived the last century almost unmodified.

And what about art? When in 1936, American painter Grant Wood was looking for a man and woman to stand model for his most famous work “American Gothic”, he not only turned to his sister but also convinced his family dentist, Dr. Byron McKeeby, to pose. Until this day, the characteristic figure wearing farmer’s clothes and holding a three-pronged hay-fork eternally looks down at visitors from a wall at the Art Institute in Chicago.

Dentists have even been involved in politics. Rumour has it that one of the reasons that British Prime Minister Margaret Thatcher had to leave office in 1989 was that her Lord Chancellor and successor John Major was not able to rally support in his hometown’s factory. As a three-pronged hay-fork eternally looks down at visitors from a wall at the Art Institute in Chicago.

Dentists have been around since the 1950s, when Bohm and Haas began mass production of Plexiglas, a clear and resistant glass substitute made of polymerized methacrylate. It is used extensively for windowpanes, airplane canopies, car lights and windshields, streetlights, and so on. Numerous other acrylates have been synthesized and found applications in paints and adhesives, dental composite resins, printing inks, artificial nails, and medical devices such as contact lenses, hearing aids, and bone cement for orthopedic endoprostheses.

The salts of acrylic or methacrylic acid can be polymerized to form solid plastics which are inert and harmless. Nowadays, numerous (meth)acrylates, mostly used in dental bonding materials, printing inks, and artificial nails, are polymerized by exposure to UV light with help from a priming photoinitiator.

The monomer building blocks acrylate and, to a lesser extent, methacrylate are strong irritants, but they are also notorious allergens. In the occupational setting, publications have described severe hand dermatitis with painful fissures and desquamation in orthopaedic surgeons and nurses exposed to MMA monomer in bone cement. Dental surgeons, assistants, and technicians are also at risk of allergic sensitization from monofunctional and multifunctional (meth)acrylates and from the epoxy acrylate prepolymer. (Meth)acrylate monomers can penetrate most gloves within minutes, especially vinyl and latex gloves. The best protection is conferred by laminated polyethylene.

Most patients in case reports of allergic contact dermatitis to (meth)acrylates have multiple sensitizations when patch tested. These have been regarded as cross reactions. However, chemical analyses carried out by investigators at the Finnish Institute of Occupational Health have shown that most acrylate-based industrial products contain numerous other acrylates as impurities, sometimes as much as 40 per cent of the total weight of the product. These additional compounds are not disclosed on material safety data sheets. Many of the so-called cross reactions could in fact be concomitant reactions.

Dentists are everywhere, and their use is likely to increase. Despite the plethora of publications on (meth)acrylates over more than half a century, new information keeps surfacing about these fascinating chemicals, enough recently to justify their nomination by the North American Contact Dermatitis Group as “allergen of the year 2012.”

To the Editor

Re: “Hand-held dental X-ray devices under investigation by FDA” (Dental Tribune Asia Pacific, Vol. 10, No. 3, pages 1–2)

Thank you for providing additional information for your readers beyond what was announced by the FDA. However, your readers should know that the level of operator radiation exposure from hand-held X-ray devices varies significantly between manufacturers and equipment styles.

Also, your closing statement that standard dental radiography like CT is a bit misleading. CT exposes the patient to much more radiation than intra-oral radiography. Any handheld device that has comparable exposure to CT should not be used, as lower exposure levels are easily achievable.

Clark Tuner, 17.02.2012

Re: “Intraoral device manoeuvres electrical wheelchair” (Dental Tribune Asia Pacific, Vol. 10, No. 3, page 9)

Woof! I have a disabled daughter who is fully dependent (unfortunately she does not have good tongue control) but the implications are amazing! Fantastic work is being done by all involved. It would be good if it could be widely available to all income brackets and countries.

Sonya, 04.03.2012

Re: “Saudi dentists receive US patent for novel soft tissue augmentation technique” (Dental Tribune Asia Pacific, Vol. 10, No. 3, page 9)

The tunnel technique has been published on by a number of sources using an acellular dermal matrix since the late 1990s. I am curious as to how someone can patent something that has been published in the past (prior art) and why the US patent office is issuing patents for techniques.

Gregory M. Kurtzman, 14.03.2012

“Dentists just seem to be doing fine, don’t they?”

Daniel Zimmermann

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