Journal of Dental Applications

Austin Publishing Group

Open Access Full Text Article

Editorial

"Amalgam Free Dental Practices": is it a Necessity?

Mir Faeq Ali Quadri*

Department of Preventive Dentistry, Jazan University, Jizan City – 45142, Kingdom of Saudi Arabia

***Corresponding author:** Mir Faeq Ali Quadri, Department of Preventive Dentistry, Jazan University, Jizan City – 45142, Kingdom of Saudi Arabia, PO Box: 114, Email: faeq_ali@yahoo.com

Received: May 30, 2014; **Accepted:** June 03, 2014; **Published:** June 05, 2014

Amalgam is one among the materials available to treat dental caries, which is considered to be the most common oral disease [1]. As part of the restoration procedure, amalgam is filled in the teeth after the decayed tissue is removed. Dental amalgam fillings contain powdered silver, tin, and copper combined with metallic mercury (liquid mercury, quicksilver). The components are mixed together in the dentist's office immediately before use and form a hard-stable material. These "silver" fillings have been used since the nineteenth century and are still used millions of times every year in the United States. The U.S. Food and Drug Administration (FDA) estimated that more than one billion dental amalgam fillings were placed between 1988 and 2008 [2].

The use of amalgam has been a subject of debate even when it was first introduced in 1800's in France [3] due to the thought of its potential systemic problems [4]. The main concern is the release of mercury and Clarkson as early as 1989 reported this as a serious threat, mentioning that it may lead to neurological disorders [5]. The controversy of the use of amalgam rouse to its peak during the 1990's [6] where most of the debates ignited due to three main reasons; Firstly, a good amount of publications portrayed the negative effects of dental amalgam on physiological processes of the human body. Secondly, there was a rise in public awareness on the potential mercuric poisoning and lastly, the advances in analytical chemistry led to effective detection of systemic mercury present in the slightest of amount [7].

Mercury is a naturally occurring substance found in earth, water and air. Most people have measurable but small amounts of mercury in their bodies. Sea foods are also associated with significant amount of mercury. Although mercury has long been recognized as poisonous to humans, the potential mercury poisoning from dental amalgams is not a subject of great concern. It is also important to recognise that dental amalgam is not a major contributor to atmospheric emissions of mercury and most of the practices have significantly reduced amalgam waste with the 'best management practices' (BMPs) (ADA, 2007).

In the early last year United Nations Environment Program (UNEP) agreed upon certain negotiations on global protection from mercuric emissions. These included; reducing the demand and supply of mercury and its products, reduction in the processing of mercury, reducing the atmospheric emissions (including land and water release) and lastly to regularize the international trade of mercury [8,9]. Keeping in mind the demand-supply chain, the fact which remains and cannot be denied is that the dental amalgam does contribute to the global demand for mercury and we, as dental health care providers have a role to play in protecting the environment [10]. This can be achieved by reducing the use of dental amalgam.

There are tremendous requirements for new inventions in the field of dental materials which could match the physical properties of dental amalgam. Though the hybrid composites have significantly taken over the market due to their esthetics, they are fairly lesser in strength, longevity and are costlier when compared to the dental amalgam. To conclude, it could be said that though dental amalgam filling present in the mouth is not a potential threat per se to the patient, but considering the demand of mercury which leads to environmental effects makes us realize that there is a need for "amalgam free dental practices".

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Citation: Ali Quadri MF. "Amalgam Free Dental Practices": is it a Necessity?. J Dent App. 2014;1(1): 2-2.