Memories of dental treatment haunt brains of anxious patients

DT Asia Pacific

TOKYO, Japan: The sound of a dental drill or suction system evokes a feeling of fear in almost every tenth dental patient. New findings presented by Japanese researchers at a recent neuroscience meeting in the US have now revealed new insights into how the brain of anxious patients may react during treatment. Using functional magnetic resonance imaging, a neuroimaging procedure to measure brain activity, they found stronger activity in the left caudate nucleus in anxious patients when playing them sounds of various dental instruments. When neutral sounds, like a French horn or pure tone, were played, however, activity in this region was found to be significantly lower.

No significant neural activity was detected when the same sounds were played to a control group of non-anxious patients. Instead, these patients showed stronger activity in the right and left superior temporal gyr, a part of the brain usually associated with auditory processing and other neural functions.

“Recent studies have indicated that the basal ganglia, including the caudate nucleus, may play a role in learning and memory functions. The subjects in the dental fear group therefore may have receiving feedback from memories of sounds of dental treatment,” researcher Hiroyuki Karibe from the Nippon Dental University’s Department of Pediatric Dentistry in Tokyo suggested.

He said that the findings, which have not been published yet, could be applied to assess the effectiveness of conventional interventions for dental fear, such as cognitive behaviour therapy.

The study is the first to have measured how the sounds of dental instruments relate to brain activity. It confirms the assumption that dental anxiety is mainly due to reasons other than the fear of experiencing pain through surgery.

No amalgam for kids

Environmental organisations in the Philippines have called on the Philippine Dental Association House of Delegates to pass a resolution that will phase down the use of amalgam as a dental filling material for children. The ban is supposed to protect the most vulnerable segment of the population from a harmful substance, representatives of BAN Toxics and the International Association of Oral Medicine and Toxicology in the Philippines stated.

According to the two Filipino organisations, amalgam fillings add significantly to the already high exposure to mercury resulting from artisanal and small-scale gold mining in the country.

Report about sterilisation incident

An incident involving the use of improper sterilised instruments in the University of Hong Kong Health Service’s Dental Unit last year was evidently caused by an on-duty dental surgery assistant who failed to complete an autoclave process of a number of instrument packages. Although hundreds of patients were exposed to unsterilised dental instruments, no infections have been detected in the aftermath of the blunder, a report published by an investigation panel of university staff in the Journal of the Formosan Medical Association in Taipei, Taiwan, concluded.

The Centre for Health Protection in Hong Kong received information from the university about the incident in early November. Subsequently, over 550 patients having received dental treatment between 50 October and 2 November 2013 were tested to rule out bacterial infections or viruses such as Hepatitis B and C or HIV.

Despite complying with standard infection control guidelines, the panel recommended to revise the documentation process of future autoclave cycles.