Memories of dental treatment haunt brains of anxious patients

TOKYO, Japan: The sound of a dental drill or suction system evokes a feeling of fear in almost every truth 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 gyri, 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 be 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.

Widespread tooth decay

Owing to bad oral hygiene habits and high consumption of sugary beverages and snacks, dental caries is still highly prevalent among children in Taiwan. According to figures of the Health Promotion Administration in Taipei, eight out of ten children at the age of five currently suffer from severe tooth decay.

Indians to study oral cancer

Three dentists from India are among the first participants of the University of Dundee’s Master of Research in Oral Cancer programme. The Scottish university inaugurated its 12-month course, which is also the world’s first postgraduate research degree to focus exclusively on oral cancer, in September.

Report about sterilisation incident

An incident involving the use of improperly 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 revamp the documentation process of future autoclave cycles.