First-ever robot-led dental surgery performed in China

By DTI

Xi’an, China: For the first time ever, a robot has independently placed two 3-D-printed implants into a patient’s mouth without human involvement. The successful procedure raises hopes of lessening Asia’s dentist shortage, especially prevalent in metropolises such as Hong Kong and Singapore, and of avoiding risks posed by poor-qualified surgeries performed by unqualified dentists.

According to Prof. Zhao Yimin, a surgeon from the Fourth Military Medical University (FMMU) in Xi’an, the procedure went very smoothly and the implants were placed with high precision.

Although human staff were present at all times during the 1-hour surgery, they did not play an active role. The robot, which was jointly developed by the Beihang University in Beijing in China and FMMU’s Stomatological Hospital over the last four years, is designed to follow a set of preprogrammed commands, but is able to make adjustments during surgery, the South China Morning Post reported.

The unique concept will allow data on the female patient’s skull and jaw, the medical staff fitted position orientation equipment to the woman and determined the movements, angle and depth needed to fit the implants in her mouth so that the robot could be programmed to move into the correct position to carry out the operation.

After taking a CT scan to acquire data on the female patient’s skull and jaw, the medical staff fitted position orientation equipment to the woman and determined the movements, angle and depth needed to fit the implants in her mouth so that the robot could be programmed to move into the correct position to carry out the operation.

According to a recent survey, about 400 million patients are in need of dental implants in China. However, the number of qualified dentists in the country is insufficient to meet the increasing demand. Through a continuing implementation of robot technology, this shortage may be eased.

In the future, robot-assisted and -led technology could increasingly facilitate dental surgeons’ work, experts have predicted. Robotic technology has already been introduced in recent years to assist in dental procedures such as root canal therapy, orthodontic operations and implant placement. In March this year, a pioneering robotic guidance system, Yomi, received clearance from the U.S. Food and Drug Administration. The computerised navigational system delivers physical guidance through the use of haptic robotic technology, which provides sensory feedback and constrains the drill in position, orientation and depth, the device’s manufacturer, NeoGc, stated.

Dental Tribune’s new online learning series set to launch in 2018

By DTI

Leipzig, Germany: In 2018, Dental Tribune International (DTI) is launching its online educational platform, Dental Tribune Online Shows. Consisting of a series of educational lectures on all dental specialties, including aesthetic dentistry, digital dentistry, endodontics, implantology, laser dentistry, orthodontics, periodontology and preventative dentistry, the shows are designed to be of immense value for dental professionals around the globe and are free to attend.

The unique concept will allow dental professionals insights into the latest studies and case reports as well as gaining first-hand experiences from top international experts. Lectures are designed to be convenient in style and use and participants will be able to access them from anywhere in the world, free of charge. Additionally, interaction with the dedicated experts via the question-and-answer sessions at the end of each presentation offers a chance to dig deeper into an area of interest—all the while receiving credits from an ADA CERP-recognised provider.

Lectures will be presented on a dedicated website and cover two full consecutive days (Friday and Saturday, 9.00 to 20.30) with ten 60-minute presentations per day. Each lecture will be recorded, edited and archived on the respective show’s website to allow for later access.
National campaign to address early-life oral health crisis

By DTI

MANCHESTER, UK: According to figures from the Faculty of Dental Surgery of the Royal College of Surgeons of England, four in five children under 2 years of age in England did not see a dentist last year. Over the same period, more in-hospital operations to extract teeth in children and teenagers were performed than ever before. To reduce the number of younger children needing extractions under general anaesthesia, which is why we need to reach families early to provide support on prevention. We hope DCby1 will raise awareness of the importance of looking after children’s teeth from an early age. Baby teeth do matter,” said Dr Claire Stevens, a consultant in paediatric dentistry and President of BSPD.

Consultant paediatric dentist and incoming BSPD president Dr Claire Stevens holding 60 decayed teeth she extracted from just 8 children aged two to nine under general anaesthesia in one afternoon. (Photograph: University Dental Hospital of Manchester, UK)

Practices which wish to actively participate in the campaign and communicate that they are open to children between 0 and 2 years of age can download the official DCby1 logo from the resources section of the BSPD’s website. They can further show their support on social media using #DCby1. Practices that have an NHS contract and have fulfilled their units of dental activity allowance, the BSPD said it is working with the Office of the Chief Dental Officer to allow over-performing practices to still receive payment for additional 0- to 2-year-olds they treat.

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Published by DTI

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UK study shows that household environment at the micro level may play a role in oral health

By DTI

LONDON, UK: The role of the household may have an influence not only at the social level, but also at the microbial level. In a study conducted in the UK, researchers have discovered that early environmental influences are far more significant than human genetics in shaping the salivary microbiome, the group of organisms that determine oral and overall health.

Dr Adam P. Roberts, senior lecturer in antimicrobial chemotherapy and resistance at the Liverpool School of Tropical Medicine, pointed to periodontitis, which is associated with an altered microbiome, as a key example of how the study may be relevant to people’s oral and general health. “Once we understand the members of the microbiome that are responsible for health, our everyday behaviour could change to shift our microbiome favourably,” he said. Roberts co-led the study, which was conducted during his time at the UCL Eastman Dental Institute in London.

The study’s main objective was to discover how the salivary microbiome is established and what factors are most responsible for the mix of bacteria. With access to a unique sample set of DNA and saliva from an Ashkenazi Jewish family living in various households spread across four cities on three continents, the team asked how much of the variation seen in salivary microbiomes was due to host genetics and how much to the environment.

Owing to the family members adhering to ultra-Orthodox Judaism, they shared cultural diets and lifestyles that controlled for many confounding factors. Additionally, because the family members’ DNA had already been sequenced to the level of single changes in the DNA code, the research team had a unique and precise measurement of their genetic relatedness.

From this, UCL Genetics Institute graduate student Liam Shaw and the team of researchers sequenced the bacterial DNA signatures present in saliva samples from 117 family members and 27 unrelated Ashkenazi Jewish controls. Across all samples, they found that the core salivary microbiome was made up of bacteria from the Streptococcus, Rothia, Neisseria and Prevotella genera. “What that tells us is that the contact and sharing of microbes that goes on at the very local environment is what determines the differences between individuals,” said Shaw.

To understand what might be driving differences at the bacterial species level, Shaw and the team used statistical methods adopted from ecology to ascertain which factors were responsible for the most variation. When comparing factors such as shared household, city, age and genetic relatedness, the factor that determined who had the most similar saliva microbes was overwhelmingly shared household. Furthermore, spouses, parents and children younger than 10 living in a household together had the most similar salivary microbiomes.

According to Roberts, the study shows that environments shared during upbringing play a major role in determining the community of bacteria that is established and knowing that the shared environment drives the microbiome may provide the ability to one day modulate it.

The study, titled “The human salivary microbiome is shaped by shared environment rather than genetics: Evidence from a large family of closely related individuals”, was published on 12 September in mBio, an open-access journal published by the American Society for Microbiology.

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British Dental Conference joins forces with Dentistry Show

By DTI

COVENTRY & LONDON, UK: The organisers of two of the largest dental events in the UK, the British Dental Association (BDA) and CloserStill Media, have announced their collaboration starting in 2018. Their joint event will be called the British Dental Conference and Dentistry Show and the first edition will be held on 18 and 19 May next year at the National Exhibition Centre in Birmingham.

It will replace CloserStill’s main event, the Dentistry Show, as well as the British Dental Conference, most recently held in Manchester in May.

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GDC warns of new online scam

By DTI

LONDON, UK: The General Dental Council (GDC) has warned dental practices not to answer requests recently sent by a computer forensic company pretending to be working on its behalf. In the e-mail, the company asks for remote access to patient data, the GDC stated on its website.

According to the GDC, providing unauthorised access to computer software could not only compromise data, but also result in a serious breach of thousands of its staff stolen.

Editorial note: Are you a victim of a cybercrime? If so, please contact the National Fraud & Cyber Crime Reporting Centre at 0300 123 2040.