Cancer risk: Ill-fitting dentures

By DTI

MUMBAI, India: Chronic mucosal irritation resulting from ill-fitting dentures may be a risk factor for the development of oral cancer, researchers from the Department of Head and Neck Oncology at Tata Memorial Centre in Mumbai concluded after reviewing existing literature on the relationship.

In addition to a variety of factors that are known to increase the risk of oral cancer, including tobacco and alcohol use, poor diet and neglected oral hygiene, chronic mucosal trauma has been associated with the disease in the past. However, the connection between such trauma, which can be caused by sharp teeth, dentures or implants, among others, and the occurrence of oral cancer has not been scientifically established thus far.

In the current study, the researchers systematically reviewed 22 articles that described the role of chronic irritation in causing oral cancer. The results suggest that chronic mucosal irritation resulting from ill-fitting dentures may be considered a risk factor for carcinogenesis in the mouth. According to the researchers, trauma-related cancers might be seen more often at the lateral border of the tongue and at the alveolus. However, no association was found for the duration of denture use and cancer formation.

Chronic irritation caused by ill-fitting dentures may increase the risk of developing trauma-related cancer, a literature review in India has found.

Referring to mechanisms behind the relationship, research has suggested different scenarios, the researchers wrote. It has been proposed that persistent mechanical irritation causes DNA damage and may eventually result in cancer formation. Another possible mechanism is that chronic mucosal trauma results in inflammation, thereby releasing chemical mediators such as cytokines, prostaglandins and tumour necrosis factor, which may result in carcinogenesis.

The study, titled "The role of chronic mucosal trauma in oral cancer: A review of literature", was published online on 30 March in the Indian Journal of Medical and Paediatric Oncology.

Two new MALO CLINICS

The MALO CLINIC group has signed a partnership agreement with Data Pacific Medical Group that will result in the establishment of two new dental clinics in Macao. According to Dr Paulo Malo, founder and president of the group, the first will open this year at Centro Médico Fedder and a larger one will follow in 2018 in the islands.

Digital face reconstruction

In creating a digital reconstruction of the face of a woman who lived 13,640 years ago in what is today Thailand, researchers used measurements of skulls, muscle, skin and soft facial tissue derived from contemporary populations worldwide. While the approximate face shows characteristics of Late Pleistocene skulls, it is surprisingly modern-looking, the researchers said.

Early-life stress

While low birth weight, for example, has been established as a primary marker of early-life stress, the findings of a new study have suggested that lower-face asymmetries, assessed according to the asymmetry of occlusion, are a marker of environmental stress and cerebral lateralisation during early development too.

In the study, researchers at the University of Washington assessed data on 6,654 US adolescents collected between 1966 and 1970. Retrousfacial asymmetries (17 per cent), the most common lower-face asymmetry in the US population, were found to fluctuate randomly between the left and right sides of the face. Such randomness indicates early-life stress, said lead author Prof. Philippe Hujoel, from the university’s School of Dentistry.

P. gingivalis in focus

MELBOURNE, Australia: The latest findings on the bacterium Porphyromonas gingivalis will be in focus at PgfMelbourne2017 from 14 to 16 May. The conference, hosted by the Oral Health CRC [Cooperative Research Centre] at the University of Melbourne, is the third in a series of international conferences on P. gingivalis and related species in oral and systemic diseases. P. gingivalis is recognised as being a key factor in the development and progression of periodontitis. It can also influence the host response and the behaviour of other oral bacteria.

A definite point of discussion at PgfMelbourne2017 will be the recent development of a vaccine for chronic periodontitis by researchers at the Oral Health CRC. This vaccine aims to reduce or even eliminate the need for antibiotics and surgery for the condition and clinical trials are to commence in 2018.

Drug-related oral health problems investigated

Hong Kong: Access to dental subsidy scheme to be widened

By DTI

BRISBANE, Australia: People with substance use disorders are more prone to dental caries and periodontal disease than the general population, as well as less likely to receive regular dental care. Hence, the oral health of these patients is a particular challenge for dentists. A new review study has now aimed to examine drug-associated oral health problems and ways for dental professionals to improve these patients’ oral health.

Drug use is associated with problems such as xerostomia, an increased urge to snack, clenching and grinding of teeth, and chemical erosion due to applying cocaine to teeth and gingivae, research has shown. In addition, lifestyle-associated factors can worsen the oral health in patients with substance use disorders. These include high-sugar diets, malnutrition, poor oral hygiene and lack of regular professional dental care.

In order to lift the burden of oral health-related problems, a cautious dental approach is needed when treating these patients. However, according to lead researcher Dr Hooman Baghaie from the University of Queensland, there are simple measures that both dentists and doctors can take to improve these patients’ oral health.

“Dentists should screen their patients for substance use, notice any advanced dental or periodontal disease inconsistent with a patient’s age and consider referral to medical doctors for management,” Baghaie said. In addition, dentists should be aware of issues concerning treatment and consent when the patient is intoxicated and be alert to the possibility of resistance to painkillers, he emphasised.

Generally, doctors and clinicians who care for people with substance use disorders should screen for oral disease and warn patients of the oral health risks associated with xerostomia and cravings for sweet foods, Baghaie added.

The review combined the results of 28 studies from around the world, which collectively provided data on 4,086 patients with substance use disorders. The findings indicated that one in 20 people between the ages of 15 and 64 use drugs each year, with approximately 10 per cent of this number having drug dependence or substance use disorders.

The findings mirror those of increased dental caries and periodontal disease in people with severe mental illness, eating disorders and alcohol use disorders, compared with the general population.

The study, titled ‘A systematic review and meta-analysis of the association between poor oral health and substance abuse’, was published in the May 2017 issue of the Addiction journal.

By DTI

HONG KONG: The age limit for the Community Care Fund scheme, which subsidises dental care for the elderly, will enable more of Hong Kong’s elderly population, as well as less likely to receive regular dental care. Hence, the oral health of these patients is a particular challenge for dentists. A new review study has now aimed to examine drug-associated oral health problems and ways for dental professionals to improve these patients’ oral health.

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Hong Kong: Access to dental subsidy scheme to be widened

By DTI

HONG KONG: The age limit for the Community Care Fund scheme, which subsidises dental care for Hong Kong’s elderly population, among other assistance programmes, is set to be lowered from 75 to 75. Fund task force chairman Dr Law Chi-kwong has announced. However, a general lack of services for this vulnerable group remains a problem in the city.

Last year, the age requirement for the scheme was already lowered from 80 to 75, giving an additional 24,600 senior citizens access to funding. However, even with this and the recently announced expansion of those eligible for aid, the sheer lack of public dental services in Hong Kong is still a limiting factor for adequate treatment for the elderly, according to experts.

Although the lower age limit will enable more people to obtain public dental care, the general capacity to provide services will remain the same. As reported by the South China Morning Post, out of the 39 government dental clinics across the city, only 11 offer emergency services to the public. This imbalance is worsened by the fact that most of the government clinics provide only very basic services, such as pain relief and tooth extraction, and are open to the public only for limited sessions per week, the paper wrote. As a result, elderly patients are often forced to queue in the early morning hours to beat the crowds to see a dentist.

“Dental care servicing in Hong Kong has never been subject to any serious review or any long-term planning,” Law said in this regard. “This is something that needs to be thought about.” However, the problem will probably not be solved in a few years, he stressed.

Just as in other Asian cities, Hong Kong’s population is ageing rapidly. However, while countries such as Japan and South Korea have three and four dentists per 1,000 elderly residents, respectively, Hong Kong’s dentist-to-population ratio is only two to 1,000.

In the population eligible for funding, problems such as tooth loss, untreated dental caries and periodontal disease are more prevalent than in the general public.

Figures from a 2011 oral health survey by the Department of Health indicate that about 40 per cent of those aged 65-75 have fewer than 20 teeth remaining and about 55 per cent have none.
New cost-effective blue laser intra-oral scanning technology

By DTI

TAIPEI, Taiwan: Taiwan’s Metal Industries Research and Development Centre (MIRDC) has introduced a new blue laser line intra-oral scanning technology. According to the developers, the device is built with mostly Taiwanese electronic components and will be significantly cheaper than similar scanning devices from international competitors.

Through software, the device uses a triangular measuring method to focus a high coherence laser light on to the object to be scanned. In this manner, it is able to accurately construct a dental model, taking precise measurements within an area of 22 × 18 mm, which reduces the margin of error, the developers said.

The blue laser line was introduced at a press conference held at the Ministry of Economic Affairs in the capital city of Taipei in April. According to the ministry, the technology has attracted nearly NT$70.61 million (US$2.4 million) in investments and generated nearly NT$200 million (US$6.6 million) in market value so far.

Developed by the MIRDC, a non-profit organisation established in October 1963 to research and develop leading technologies for use in the metal and related industries in Taiwan, the blue laser line was transferred to several Taiwanese companies, including EPED, ARIX CNC Machines, Gillion Technology and Ain Tec Industrial, Taiwan News reported online.

The scanner, which is currently being tested in clinical trials, is to be introduced to the market later this year. According to the MIRDC, similar oral scanning devices made in Germany, Denmark and the US, for example, cost about NT$1.2 million–1.6 million (US$39,900–53,200). The MIRDC’s partners, however, hope that the commercialised product will sell for US$30,000 to hospitals and dental clinics.

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NOW AS A FLOW!
Many Asian countries are experiencing a great deal of growth

An interview with Jeff Wong, Strategic Analyst Manager at medical market research firm iData

Jeff Wong in talks with Dental Tribune.

By DTI

The ever-progressing digitalisation, changing regulations and a tendency towards mergers are currently shaping the dental industry. At the International Dental Show in Cologne, Dental Tribune met with Jeff Wong, Strategic Analyst Manager at international medical market research and consulting firm iData, to talk about how—major and emerging—competitors have reacted to these trends.

Digitalisation is one of the main trends that is changing the industry. Other than that, what developments are dominating the dental market?

Yes, digitalisation is still the up-and-coming trend and everybody is trying to get into that market now. On the product side, I would say it is 3-D printing and intra-oral scanning. Three or four years ago, there was only a handful of competitors in both of those areas. This year at IDS, almost everybody is presenting some new product in these fields—knowing how fast these markets develop, everybody wants to participate.

What consequences will this have for the market in general?

Especially in these two areas, where the level of imitation is high, with so many competitors, it will definitely start diluting the market shares among the existing companies. However, if these participants start focusing on specific regions or niche audiences, I think there will still be a great deal of benefit.

What about the recent merger trend—is that something we will see more of in the future?

From what we have seen in other industries, we definitely predict that the trend will continue. Of course, there will always be a couple of smaller companies that will end up becoming fairly larger themselves and remain independent. However, we expect that many of the successful emerging companies will be acquired at some point. One advantage that the larger competitors have is the amount of resources they have. They can always stay ahead of the curve. If they see something come to the market with something unique, they have the resources to quickly develop a product of their own.

What role do the emerging markets play? What regions will become more significant in the future?

Regarding digital dentistry, I would say much of the development is linked to implantology and prosthetics. The key countries where those areas are big as well are Brazil and Italy. Even though the penetration of digital dentistry might be relatively higher in those areas compared with others, I would say they have the greatest opportunities for growth.

What are the main trends in implantology?

In terms of implants, dozens of new companies are popping up every year, but many are also either acquired or close down. There are definitely certain regions that are experiencing a great deal of growth, for example many Asian countries. At the same time, traditional markets such as Italy, Brazil and the US are doing very well. These markets are well penetrated at this point, so in terms of market growth it will definitely slow down. However, there is still substantial growth opportunity for the lower-priced competitors, while the traditional prices will still be a great deal of benefit.

At this stage, I think companies are mainly waiting to see what will happen. Nevertheless, in light of what is happening in other industries regarding the whole Brexit issue—for example, European Union chiefs have warned airlines, including easyJet and Ryanair, to relocate their headquarters to the EU if they wish to continue their routes within continental Europe after the Brexit—if that can happen in the airline industry, who is to say it cannot happen in the dental industry? Again, for example in Mexico, which has a major dental tourism industry, if that is going to be affected in terms of procedures volumes, it is definitely going to affect the dental manufacturers as well.

So, you are saying that larger companies are looking for smaller businesses to acquire in order to bring new technology to market?

Not only on the technology side, but also to compete on the pricing level as well.

In the current political climate, the Chairman of the Association of the German Dental Industry has issued a warning about protectionism and trade barriers. What are companies doing in this regard?

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Osteoporosis: Resolvable magnesium implants may promote bone formation

By DTI

MALMÖ, Sweden: According to new research from Sweden, a ground-breaking method for stimulating bone formation around implants could soon be available. In testing the cellular and molecular effects of magnesium-based implants in the early healing stages of implant integration, the researchers found that the release of magnesium promoted rapid bone formation and the activation of osteogenic signals near implants placed in osteoporotic bone.

“We observed that the implant material disappeared, having formed calcium and phosphate, which are similar to bone structure,” lead researcher and doctoral student Silvia Galli from Malmö University’s Faculty of Odontology told public broadcaster Sveriges Radio. By using magnesium-based implants that dissolve completely over time instead of titanium ones, osseointegration in osteoporotic patients thus might be enhanced.

The use of magnesium-based implants could be a potential method for restoring skulls after facial fractures through promoting new bone tissue formation as the implant dissolves over time. According to Galli, the amount of metal used in the implants is so insignificant that it leaves the body without a trace of the traumatic event having taken place and without any side-effects for the kidneys, or the need for a second surgical procedure to remove the implant, for example.

Thus far, the method has only been tested in animal models and will need more research before proceeding with clinical tests on human patients. Prof. Lars Magnus Bjursten from Lund University emphasised in the radio interview. However, he said that it is important to always look for alternatives, particularly in orthopaedics, and magnesium seems to be a useful material.

Whether the method could potentially assist osseointegration around dental implants was not addressed in the current research project.

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