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Indian dental clinic chain aims for expansion

DTI

HYDERABAD, India: India's rising dental health-care sector is expected to receive another significant investment, as Alliance Dental Care has announced that it will triple its number of dental clinics by mid-2013. The expansion is intended to serve different market segments, including dental spas, regular dental clinics, as well as express cleaning and whitening spots located in public places like airports and shopping malls.

Alliance Dental Care was founded in 2002 as a subsidiary of Alliance Medicorp, a joint venture between Apollo Hospitals and medical equipment provider Trivitron. Both companies have been reported to seek private investors in order to raise Rs 0.5 trillion (US$10 million) for the first phase of the expansion in 2012. The new clinics, as well as the existing ones, have been re-branded as White Dental Clinics, they said.

Alliance Dental Care currently maintains over 20 dental clinics in major Indian cities like Chennai, Bangalore and Hyderabad. In addition to its Indian business, the joint venture is also eyeing potential markets overseas, including South-East and West Asia, Africa and Eastern Europe.

According to the latest financial reports, Apollo boasted revenues of Rs 23 trillion (US$460.4 million) in 2010/2011. Once the expansion has been completed, the company will hold a 70 per cent share in Alliance Dental Care.

Contact allergies owing to gloves: A growing problem in dentistry

Ben Adriaanse
DT Netherlands

HOUTEN, Netherlands: In recent years, researchers have noted a significant increase in contact allergies to rubber additives among health care professionals. Although the cause of this cannot be stated with certainty, experts believe that nitrile gloves does.

Experts believe that nitrile gloves cause contact allergies.

In the 1980s, the use of medical gloves made of natural rubber latex was introduced into dentistry. Owing to an alarming number of allergic reactions caused by certain proteins contained in latex, synthetic alternatives like nitrile and vinyl gloves emerged shortly afterwards. While they, like other alternatives, score significantly lower in comfort and elasticity, nitrile gloves are most commonly used by dentists.

According to Michiel Paping, director of Budev, a Dutch research and development company focused on natural rubber latex allergens, type I allergic reactions, which are immediate reactions to allergens in a product, are very rare nowadays owing to improved quality standards and production processes. Type IV reactions, however, are delayed reactions to the chemicals used in the production process and are more common and can arise in response to nitrile or vinyl. "In fact, I think that synthetic rubbers cause more contact allergies than natural rubber latex," he told Dental Tribune Netherlands.

"It is not the raw, unprocessed rubber that causes type IV allergic contact eczema but the excipients added during the manufacturing process, such as vulcanization accelerators, plasticizers, fillers, antioxidants and colorants. Excipients are present in both natural and synthetic rubber gloves," said Prof. An Goossens, a contact allergy expert at KU Leuven's Department of Dermatology in Belgium.

In 2010, a soft nitrile glove was introduced that weighed only 2.5 to 3.5 g. The production lines were shortened and the vulcanization was performed at lower temperatures to save costs and energy. However, concerns have been raised about the thinner gloves.

"Producing thinner gloves and thereby being able to fit more gloves in a shipment, saves costs for raw materials and transport. However, the production of such a thin product and vulcanization at lower temperatures inevitably requires extra and new chemicals. In addition, it is unavoidable that thinner gloves will score worse in strength and permeability," said Paping after his company had tested various gloves with regard to these properties.

Alongside the growing number of contact allergies in recent years that are likely caused by added chemicals or antimicrobial agents, Paping and his team have observed an increase in allergic reactions in daily practice. "Recently, we have seen that the professional body is becoming alarmed. Despite this, I am concerned that the average dentist is not aware of this matter," he said.

"When health care professionals start working in practice, they use the same glove out of habit. When gloves are ordered, the responsible person most often looks for the cheapest product on the market. As a result, cheap gloves of unknown origin are sometimes used in dental care," Paping said.

According to studies conducted in Finland and the Netherlands, the quality of latex gloves today is evolving and most manufacturers have eradicated the proteins that can cause allergies from their production. However, currently there is insufficient data on the new generation of latex gloves but initial studies have shown promising results.

According to the experts, a change of thinking and a policy on rubber gloves based on neutral information is urgently needed. Currently, a number of inferior products on the market owing to the fact that CE markings can be awarded based on self-assessment in Europe, Paping said. He recommended the implementation of new standards to replace the CE marking in order to promote high-quality products that are flexible, cause as little sensitisation as possible and keep permeability as low as possible.

Contact allergies caused by gloves are a growing problem and should not be underestimated, the experts concluded. "With an annual global use of more than 150 billion pieces, the medical glove is something that requires serious attention," said Paping. "It is a condition that can threaten your career and you can develop it suddenly," he warned.

(Edited by Claudia Duschek, DTI)

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Dental occlusion/temporomandibular joint and general body health

Clinical evidence and mechanism of an underestimated relationship

Drs Yong-Keun Lee
& Hyung-Joo Moon
South Korea

During the treatment of symptoms originating from disorders of the temporomandibular joint (TMJ) and occlusion, it was found that restoring the TMJ to its normal condition resulted in a change of general body health. In most cases, the change of health was for the better. Owing to similar reports, a connection between TMJ status and general body health was therefore hypothesized. However, the mechanism of this relationship remains unclear.

In this article, the relationships between dental occlusion/TMJ status and general body health are reviewed with reference to peer-reviewed papers. A conceptual theory is proposed that may explain this mechanism.

TMJ and myofascial pain

Dental occlusion is the relationship between the maxillary and mandibular teeth when they approach each other.[1] The TMJ is the joint of the jaw, which is unique in that it is the only bilateral joint that crosses the midline.[2] As the treatment of dental diseases aims to achieve harmony within the entire stomatognathic system, teeth could be literally considered to be a set of gears anchored in bone, while the upper and lower jaws are attached to each other by the TMJ.[3]

The causes of TMJ disorders can be divided into five categories: dental, trauma, lifestyle habits, stressful social situations, and emotional factors.[4] Trauma can be in the form of whiplash, traction appliances, and blows to the head, face, or jaw.[4] Evidence of significant trauma to the TMJ has also been found following hyperextension of the cervical spine.[5] With regard to habits, bad posture, bad ergonomics at work, oral and childhood habits, as well as poor diet and strenuous activities such as heavy lifting, have been cited.[4]

Myofascial pain, deriving from the hyperalgesic trigger points located in skeletal muscle and fascia, is commonly characterized by persistent regional pain.[6] The myofascial component has generally been considered to be part of pain syndromes that involve TMJ. Trigger points in masticatory muscles are presumably caused by malocclusion, misalignment and habitual para-function of the jaws, abnormal head and neck postures, or trauma.[6]

Relationship between TMJ and general body health

There have been several studies on the relationship between occlusion/TMJ and general body health. Among other findings, it has been found that lesions in the masticatory muscles or dento-alveolar ligaments can perturb visual stability and thus generate postural imbalance.[7] The position and functioning of the mandible also have an effect on the centre of gravity.[8,9]

Dental occlusion is associated with reduced lower extremity strength, agility and balance in elderly people.[10] The proper functional occlusion of natural or artificial teeth has been shown to play an important role in generating an adequate postural reflex.[10] The subgroups of general body conditions associated with TMJ may be divided into the following three categories:

1) Synchronisation of the head and jaw muscles with other muscles

There is a necessary systematic synchronisation of the head and jaw muscles with the other muscles of the body to maintain proper body posture. The functional coupling of the stomatognathic system with the neck muscles is well known. Patients suffering from occlusal or TMJ disorders have frequently reported dysfunction and pain in their neck muscles.[12,13] An imbalance of sternocleidomastoid muscle activity, often leading to neck pain, can be induced by a unilateral loss of occlusal support.[14]

The biomechanical impact on cervical vertebrae during mastication has been calculated, which confirmed that vertical occlusal alteration can influence stress distribution in the cervical column.[15] Possible associations between trunk and cervical asymmetry and facial symmetry have been reported.[16] For example, it has been found that visual perception control is most important in orienting the head in the frontal plane.[16] A relationship between dental occlusion and postural control has also been postulated.[17]

2) TMJ and body stability

Dental occlusion/TMJ condition exerts an influence on body stability. Human beings assume a relatively unstable postural state when in the standing position; therefore, the maintenance of a standing position is related to fluctuation in the centre of gravity, which is controlled by information from the ocular region, the three semicircular canals and anti-gravity muscles.[18]

It has been suggested that occlusion and head position affect the centre of gravity, resulting in an increased risk of falling when abnormal.[19] Poor or absent dental occlusion may decrease proprioception in this area, interfering with the proper stability of the head posture.[7] It is thought that tooth loss is a risk factor for postural instability.[20] Physiologically, mechanical receptors in the periodontal membrane control mandibular movements and coordinate masticatory function,[21] and this is related to the motor activity of the neck muscles.[22]

Fluctuation in the centre of gravity caused by altering the occlusal contact area experimentally was examined experimentally, and the results confirmed that occlusal contact affects gravity fluctuation and that appropriate occlusion attained by maintaining even occlusal contact in the posterior region is crucial for gravity fluctuation.[23]

3) TMJ and physical performance

TMJ conditions can influence physical performance. Trainers often advise athletes to wear occlusal splints or mouth guards during competitions in order to increase motor performance.[24] It has also been reported that proper teeth clenching plays an effective role in the enhancement of physical performance.[25]

The relationship between the presence of occlusal support in edentulous subjects and their capacity for physical exercise has been investigated, and it was concluded that reconstruction of occlusal support holds significance not only for the restoration of masticatory function but also for the maintenance of physical exercise.[26]

Mechanism of relationship between the TMJ and general body health based on the myofascial aspect

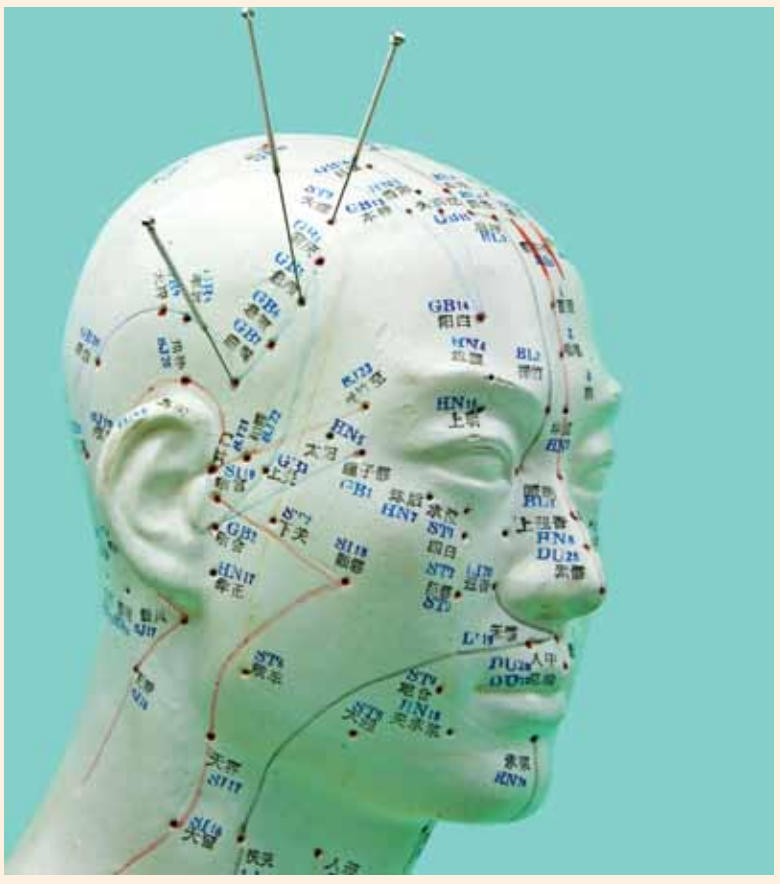
It is the first hypothesis of this article that TMJ and other parts of the body are connected through fasciae, which is a connective element between various anatomical structures,[27] very similar to a three-dimensional network extending throughout the whole body.[28,29] This network can be stretched by the contraction of underlying muscles and transmit tension over a distance.[30,31]

The fascial tissues are arranged vertically, from head to toe, and four interconnected transverse fascial planes criss-cross the body. Therefore, should an injury occur in one part of the body, pain and dysfunction may occur throughout the body.[32]

Mechanism based on qi and the meridian aspect

The second hypothesis is that the TMJ and other parts of the body are connected through the meridian system, which is constituted of the fasciae.

> “...lesions in the masticatory muscles or dento-alveolar ligaments can perturb visual stability.”



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Traditionally, acupuncture meridians are believed to form a network throughout the body, connecting peripheral tissues to each other.[33] Studies that seek to understand the acupuncture point/meridian systems from a Western perspective have mainly focused on identifying distinct histological features that differentiate acupuncture points from surrounding tissue.[34] One of the histological and anatomical associations with the meridians is intermuscular or intramuscular loose connective tissue (fascia).

Ancient acupuncture texts contain several references to "fat, greasy membranes, fasciae and systems of connecting membranes" through which the qi is believed to flow.[35] In terms of connective tissue associations, several authors have suggested that a connection may exist between the acupuncture meridians, which tend to be located along the fascial planes between muscles or between a muscle and bone or tendon, and the connective tissue.[34,35]

"...the traditions of acupuncture and myofascial pain therapies share fundamental similarities..."

In view of experimental evidence, it has been hypothesized that the network of the meridians can be viewed as a representation of a network of interstitial connective tissues. These findings are supported by ultrasound images showing connective tissue cleavage planes at the acupuncture points in human beings.[34] Rather than viewing acupuncture points as discrete entities, it has been proposed that these points might correspond to sites of convergence in a network of connective tissue permeating the entire body, similar to highway intersections in a network of primary and secondary roads.[34]

Correlation between trigger points and acupuncture points

Although separated by two millennia, the traditions of acupuncture and myofascial pain therapies share fundamental similarities in the treatment of pain disorders.[36] Recent reports have suggested substantial anatomic, clinical and physiological overlap of the myofascial trigger points and acupuncture points.[36] The analogy between the trigger points and acupuncture points has been discussed since 1977,[37] when 100% anatomic and 71% clinical pain correspondences for the myofascial trigger points and acupuncture points in the treatment of pain disorders were reported.

A number of similarities between them were also suggested. The two structures have similar locations and needles are used at either point to treat pain. The pain associated with the local twitch response at trigger points is similar to the de qi sensation, and the referred pain generated by needling trigger points is similar to the propagated sensation along the meridians.

It was pointed out, however, that the acupuncture points located at the trigger points are not frequently used by acupuncturists, and do not share the same clinical indications as the trigger point therapy.[38] It was further argued that the claim of 71% correspondence between the acupuncture points and the trigger points[37] is conceptually impossible.

Furthermore, even putting this conceptual problem aside, no more than 40% of the acupuncture points correlated with the treatment for pain and, more likely, only approximately 18 to 19% of the points are actually correlated.[39] The correlation between the trigger points and the acupuncture points clearly need to be further investigated in the future.

The fascial connection theory we propose can explain the functional connection between dental occlusion/TMJ and other parts of the body based on either myofascial release or the qi and meridian system, or a combination of the two. Therefore, dental occlusion should be built up and maintained in a normal natural condition, while causes for deterioration of the TMJ status should be treated in an effort to restore the natural condition. DT

Editorial note: This article is a summary of two review papers recently published in the Journal of Alternative and Complementary Medicine 17 (2011): 995–1000 & 1119–24. A complete list of references is available from the authors.

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3Shape releases its new Dental System™ 2013

3Shape's Dental System™ 2013 introduces new major indications, a variety of powerful design tools, optimized order-creation, stronger scan and design workflows, and a new and highly intuitive user-interface.

Copenhagen, January 7, 2013–on December 21, 2012, 3Shape, a user-acclaimed worldwide leader in 3D scanners and CAD/CAM software solutions, released its next generation Dental System™ 2013 to the market.

"We are keenly focused on helping labs stay competitive in an industry driven by technology changes, escalating globalization, and increasing regulatory demands," says Flemming Thorup, President & CEO at 3Shape. "By enhancing ease-of-use in our Dental System 2013, and adding even more major indications that can be provided digitally, we believe that we have significantly increased the productivity and range of services labs can offer at competitive prices."

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Dental System™ 2013 will be available through 3Shape resellers. Actual availability to end-users will depend on the specific system configuration. Please contact your local 3Shape supplier, or visit www.3shapedental.com regarding reseller information.

About 3Shape

3Shape is a Danish company specializing in the development and marketing of 3D scanners and CAD/CAM software solutions designed for the creation, processing, analysis and management of high-quality 3D data for application in complex manufacturing processes. 3Shape envisions the age of the "full digital dental lab," and its more than 140 developers provide superior innovation power toward reaching this goal. 3Shape's flexible solutions empower dental professionals through automation of real workflows, and its systems are applied in thousands of labs in more than 90 countries worldwide, putting 3Shape technologies at the peak of the market in relation to units produced per day by dental technicians. With TRIOS, 3Shape now brings its vast expertise and innovation power directly to dentists. 3Shape boosts its first-line distributor support network with a second-line support force of over 30 in-house experts placed in 5 support and service centers strategically located around the globe. 3Shape is a privately-held company headquartered in Copenhagen, with the market's largest team dedicated to scanner and software development for the dental segment based in Denmark and Ukraine, production facilities in Poland, and Business Development & Support Offices at several locations in Europe, in North and South America and in Asia. For further information regarding 3Shape, please refer to www.3shapedental.com. Visit us on www.facebook.com/3shape DT

“Most dental practices will encounter fraud”

An interview with expert David Harris, United States

David Harris

The potential for embezzlement and theft is a problem no business is immune to. And research shows that smaller businesses are more likely to experience problems than larger ones. For dental practice owners, it’s not just being small that increases risk. The typical dental office management structure is inherently vulnerable to fraud. Adding to the challenge, detection can be trickier in a dental practice compared with other small businesses. And the bad news continues: David Harris, who has 20 years of experience in dental-practice fraud investigation, puts little stock in deterrence. Instead he emphasizes early detection as the only viable defense. Recently, he shared those thoughts and more with Dental Tribune US editor Robert Selleck.

Robert Selleck: ***What is the likelihood of a dental office experiencing fraud?***

David Harris: There have been several studies by the American Dental Association and others. Collectively they suggest that the probability of a dentist being a fraud victim in his or her career is between 50 and 60 per cent. However, such statistics are necessarily low because there is an unquantifiable amount of fraud that is never detected or is detected but not disclosed.

Are there any reasons why dental practices would be more likely or less likely than other types of small businesses to experience fraud?

Two main points influence the prevalence of fraud in dentistry. First, the clinical responsibilities carried by dentists effectively reduce them to being absentee owners in their own businesses. Second, the fact that so much of dentistry is paid for by third parties removes one of the most basic controls that businesses depend on.

Is there a difference in potential for fraud in a three- or four-person office compared with a practice with 20 or more?

Intuitively, one would think that a larger practice should be able to have tighter controls through increased separation of duties. But many group practices are essentially several solo practices sharing space, thus offering no particular administrative synergy. When a group practice is run as a single unit, the dentists owning the clinic tend to delegate oversight of the administrative functions to a single dentist. Given that there are many thefts perpetrated against a solo dentist, imagine the fraud possibilities when one dentist is overseeing a much larger business activity.

Do you have statistics for average or median losses to fraud based on various sized dental practices?

Unfortunately, there isn’t any published data specific to practice size. Bill Hiltz, who heads our investigation department, has a hypothesis that frauds typically range between 4 and 7 percent of monthly revenue while the fraud is going on. In its 2007 Survey of Current Issues in Dentistry, the ADA surveyed dentists who had been fraud victims. The average estimated loss was US$18,174. Based on our own experience, this number is tremendously low. That’s not surprising because in the same survey only 51.3 percent of the dentists who were fraud victims completed a fraud investigation, raising questions on how the remainder determined their losses. We normally find that the amount of fraud that dentists are able to identify without the benefit of professional assistance is far less than the true fraud.

We surveyed our own files several years ago and found an average theft of more than US$150,000. This is superficially consistent with the Association of Certified Fraud Examiners number of US$200,000 for the average small business loss, but many of its “small businesses” are much bigger than most dental practices. We have seen a number of dental frauds of more than US$500,000 and a few exceeding US$1 million.

What are the most typical types of fraud cases seen in dental practices?

Most of the fraud that we see is “revenue fraud.” Some examples are writing off amounts that were actually collected, deleting treatment that was done so that collections are “off the books” and billing the full amount to two insurance companies when someone has dual coverage.

A second type of fraud that we are seeing involves creation of “phantom” revenue. Insurance companies are billed for work that was never done, with funds either stolen directly or “lapped” (used to pay someone else’s balance to cover a stolen payment). Obviously, if discovered by an insurance company, this type of activity can have serious consequences for the innocent dentist.

Most thieves use more than one method of stealing; very few stick to a single methodology. Also, we are continually seeing new variants. For example, we recently saw a thief take advantage of a server crash to decrease some accounts receivable balances. When patients paid the correct balances, they would be paying more than the “official” balance in the practice management software, with the thief pocketing the difference.

Is there a type of fraud more prevalent in a dental practice compared with other small or similarly sized businesses?

Since we investigate only dental embezzlement, my knowledge of fraud patterns in other small businesses is limited to what I read. My perception is that much of the fraud committed against other businesses involves expenses: payroll, paying non-existent suppliers, padding expense claims, etc. The majority of embezzlement that we see in dental practices involves revenue.

While we do see a fair number of thieves who will steal revenue and also manipulate their payroll or create a phony supplier, very few will commit expense fraud while concurrently resisting stealing some of the cash that patients hand them daily.

What about fraud that’s more indirect, such as questionable workers’ compensation claims?

We have seen an astonishingly wide variety of unconventional thefts, everything from stealing the gold that is recovered from old restorations to misappropriating dental supplies and instruments and selling them online. However, embezzlement typically involves larger amounts and takes place undetected for a longer period.

What motivates the typical perpetrator?

We see two types of fraudsters. One type we call “dishonest”—these people typically believe that they should live better than their “official” compensation permits.

I immediately think of one thief who rented a private plane with stolen funds for a New York City shopping trip with girlfriends. Funds from another major theft were used to purchase a yacht and the most expensive BMW available. The other group I would characterize as “desperate.” These people struggle to meet basic needs. There might be an addiction, an uninsured medical condition, a divorce or an unemployed spouse. In contrast to the dishonest fraudsters, these people have their moral compass altered by their desperation. Many initially plan to repay what they “borrow,” but a continuing deficit frustrates this. Interestingly, the desperate thieves have normally worked for more than eight years at their office.

What are the strongest deterrents?

Deterrence is effective with crimes of opportunity or where thieves can choose their target. Embezzlement is not a crime of opportunity; it is carefully planned with complete awareness of the control systems in place, and it is crafted to bypass these controls. Adding more controls simply increases the circumvention challenge. Most of the thieves we see can easily adapt.

Because shoplifting is a crime of opportunity, control systems such as video cameras and radio-frequency identification tags on merchandise are effective at helping to prevent pilferage; however, such deterrence is unlikely to work in a dental practice.

The other point I will make is that fear of punishment seems to be virtually ineffective in deterrence. Embezzlers we see are well aware of the consequences of their actions, which include loss of livelihood and potentially, loss of liberty. Because of the needs of each group, we should not expect punishment to deter either the dishonest or the desperate fraudsters.

Are there any effective deterrents?

My suggestion is that deterrence strategies that provide no collateral benefit (i.e., are done only to discourage fraud) are a waste of resources; instead dentists should focus on early detection of fraud.

I will again disagree with much of the collective “wisdom” that exists on dental embezzlement when I say that for a dentist or advisors to try to confirm fraud by some form of audit or analysis is unproductive and possibly dangerous. Because there are many possible ways to steal from a dentist, without considerable knowledge and some specialized software, this activity is looking for a needle in a field of haystacks. Fortunately for dentists, even though there are myriad ways to steal, the behaviour of embezzlers is remarkably consistent. With the right knowledge, identifying embezzlement through behavioural analysis is painless and reliable.

(DTI/Photo AVAVA)

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We have a behavioural assessment questionnaire requiring less than five minutes to complete, which dentists can request from our website.

How does an economic downturn affect dental-practice fraud?

Difficult economic times create more of these desperate people I mentioned earlier, which creates more fraud. We did notice a much larger incidence of fraud in the Detroit area after the auto industry downsizing a few years ago.

What are the first critical steps a dental practice owner should take if he or she suspects internal fraud is occurring?

Unfortunately, intuitive steps are not always the right ones at this point. Dentists try to conduct their own investigation, bring their CPA into the office, or call the police. Doing any of these will likely alert a perceptive thief to your suspicions.

The overarching objective is not to telegraph your suspicion to the suspect. When fraudsters think they are about to be discovered, their strong urge is to destroy evidence. This invariably causes collateral damage. Destruction might consist of wiping the computer's hard drive and destroying all backup media.

In one spectacular case, the victims did not engage us but began their own (clumsy) investigation. The thief, once alerted, burned down the office!

This is really the point where expert guidance is needed. We have an "immediate action checklist" for dentists who suspect fraud in their office. They can request the checklist from our website.

Our investigative process is completely stealthy. I promise never to send a nerdy-looking investigator to your office. This helps ensure that evidence is protected, and also that working relationships are not destroyed in the event that suspicions are groundless.

What is the most unusual fraud case you have encountered?

About once a month we see something innovative. The alteration of receivable balances after the server crash is one I think of—we suspect that the thief caused the server to crash. By placing a magnet inside one of our lab computers, we could replicate the crash quite easily.

Is there specific insurance owners can buy to protect their business against loss to fraud? Is such insurance worth getting?

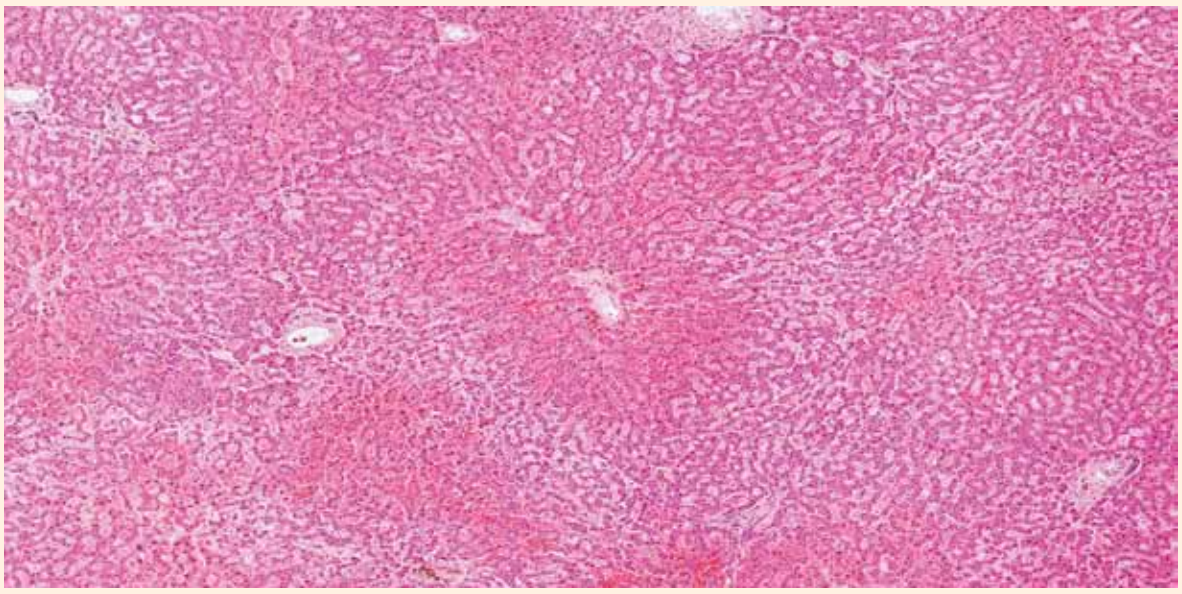
This insurance is either included in the basic insurance package that offices already have or an "employee dishonesty" rider can be added. I don't have cost details, but understand that it is quite inexpensive. Based on what I said about the probability of fraud in offices, I think everyone should have this coverage.

How much of a problem is external fraud involving customers, vendors, suppliers or other business relationships compared with internal fraud?

It certainly happens. We see a fair amount of identity theft from people trying to make use of someone else's insurance coverage or to obtain prescription medication. However, the financial and other damage that this type of activity normally causes pales in comparison to the damage caused by embezzlement.

Thank you very much for this interview. DT

Bad breath gas used to make liver cells from teeth



Microscope picture of normal human liver. (DTI/Photo Convit)

DTI

TOKYO, Japan: A team of Japanese researchers has demonstrated that hydrogen sulphide, one of the main causes of bad breath, could be a key component in developing future medical therapies. In a recent study conducted at the Nippon Dental University in Tokyo, they reported that stem cells isolated from dental pulp transformed into liver cells after being incubated with the characteristically foul smelling gas for at least three days.

While dental pulp stem cells have been found to have the ability to transform into a number of different cells, including muscle and blood cells, this is the first time that researchers have claimed to have produced a huge number of cells that were able to store glycogen and collect urea—the two main functions of the liver. They said that although more research might be needed on the possible carcinogenic effects of the method, results indicate that it produced cells with little potential to differentiate, hence limiting the risk of developing tumours after transplantation.

"Hydrogen sulphide did not cause apoptotic changes in the cells," they stated in the report.

Common methods of producing hepatic cells for human transplantation include the use of foetal bovine serum, which is heavily regulated worldwide. The researchers however extracted stem cells for their study from patients undergoing regular tooth extractions. These were then divided into two groups, of which one was incubated with hydrogen sulphide and the other with a different medium.

Commonly associated with the smell of rotten eggs, hydrogen sulphide is produced in small amounts by the human body for signalling and other biological functions. In the oral cavity, where it is considered highly toxic to tissue, it is produced by forms of bacteria that do not require oxygen to grow.

It is estimated that between 20 and 50 percent of people in developed countries suffer from halitosis, the main side-effect of this process. DT

Traditional imaging will not disappear with CBCT

An interview with Prof. Stefan Haßfeld, Germany

Prof. Stefan Haßfeld

The ability to examine the craniofacial anatomy with help of three-dimensional images obtained through Cone Beam Computerized Tomography (CBCT) has been praised as the new gold standard in oral surgery. Dental Tribune recently had the opportunity to speak with Prof. Stefan Haßfeld from the University of Dortmund's Department of Oral and Cranio-Maxillofacial Surgery in Germany about the technology and its future potential at the FDI Annual World Dental Congress in Hong Kong.

Dental Tribune: Prof. Haßfeld, in your opinion, has CBCT become a standard in dentistry?

Prof. Stefan Haßfeld: CBCT has been available in dentistry for over a decade and since then has been established as a standard for many indications. Despite this development, I doubt that the technology will make traditional imaging obsolete any time soon. Instead, it will be used as an aid in more complex treatments.

One of the areas in which CBCT is used is implant treatment planning. What are the other main areas of application?

Nowadays, the technology is widely used in complex oral and maxillofacial surgery procedures. For example, we regularly examine large cysts and deeply impacted third molars with CBCT.

Its use can also be of benefit for the diagnosis of maxillary sinus diseases, as well as in traumatology or the correction of anomalies and dysgnathias.

What potential does the technology offer regarding the improvement of treatment outcomes?

In contrast to traditional imaging, CBCT allows the human autonomy and pathology to be assessed in detail in 3D space. This can be extremely helpful for treatment planning and the assessment of regions that present a surgical risk, like adjacent nerves, teeth or blood vessels. In many cases, we expect a significant reduction in operative risks and an improvement in surgical plan ning.

According to the industry, the radiation dose for patients is significantly lower with CBCT. Do you agree with this statement?

I would have to disagree, since compared with traditional imaging, CBCT usually has a higher radiation dose. However, it also yields completely different information. By taking a high number of single images from different angles, CBCT can provide lower radiation doses only in a few exceptional cases.

Is this the only drawback compared with traditional imaging techniques?

As CBCT has another field of indications, comparison with traditional imaging techniques is not appropriate. However, there are indeed some shortcomings, like higher radiation doses and costs, as well as a lower resolution compared with dental film.

What role will CBCT play in dental practices in the future?

CBCT will take root in dental practices, particularly in those with emphasis on surgery, when it comes to certain complex treatment issues. For all the mentioned reasons, traditional imaging methods will not disappear.

A panoramic X-ray image, for example, provides an excellent overview of the entire jaw arch for clinically oriented examinations, with only little effort and at a small radiation dose. Dental film still offers the highest resolution for viewing details. Rather, the establishment of CBCT for dental imaging offers us additional options for daily practice.

Thank you very much for this interview. DT

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Dutch supplier acquired by SomnoMed

Daniel Zimmermann
DTI

SYDNEY, Australia/ZURICH, Switzerland: SomnoMed has expanded its own distribution network in Europe through a new acquisition. According to the terms of an agreement closed between the Australian-based company and Goedegebuure Slaaptechniek B.V. (GS) in Loenen aan de Vecht near Amsterdam, GS will market and distribute SomnoMed's range of dental solutions for the treatment of sleep breathing disorders exclusively in the Netherlands.

Currently, GS is one of the leading Dutch suppliers of mandibular repositioning appliances. With the takeover, SomnoMed intends to boost its presence and business development in Europe, particularly in important Central European markets, CEO Ralf Barschow said. He told Dental Tribune Asia Pacific that sales have jump-started in the Netherlands because devices for the treatment of conditions like obstructive sleep apnoea syndrome have been reimbursed by the country's health insurance companies since 2010.

The acquisition will be paid half in cash and half in shares and is expected to be completed by 2019. SomnoMed stocks listed on the Australian Securities Exchange reacted positively to the announcement.

According to Barschow, sales in Europe contribute approximately 25 per cent to SomnoMed's global business results. Last year, revenues in the region grew by over 30 percent.

He confirmed that the company is also in talks with other suppliers in Europe. Since 2008, the company has been operating actively in Europe through its subsidiary in Zurich in Switzerland. DT

The SomnoDent MSA device has seen increasing sales in the Netherlands. (DTI/Photo SomnoMed, Switzerland)

US study suggests dentists cause implant failure

DTI

LOMA LINDA, Calif., USA: The indications and versatility of dental implants have increased, and so have complications. Researchers from the Loma Linda University School of Dentistry in the US have suggested that, regardless of patient risk factors like bruxism, successful long-term outcomes significantly depend on the experience of the clinician performing the procedure.

By reviewing the records of edentulous patients who had received full-arch maxillary and/or mandibular supported fixed complete dentures over a period of ten years, the researchers found that 12 percent of implants failed when clinicians had less than five years of experience in the field. Implants were also twice as likely to fail if the surgeon had performed less than 50 implantations in his career, they report.

Other contributors to implant failure were identified as being related to the patient rather than the implant. Almost every third patient with diabetes or a history of bruxism had experienced implant failure.

Other risk factors commonly associated with implant failure like the type of prosthesis used, smoking or implant location were found to have less impact on long-term success, according to the researchers. They stated that the absolute rate of success was found to be 90 percent.

Overall, the records of 50 patients treated with 297 implants at the school were reviewed. DT

Dentists with little experience contribute to failures of the device.

20 Years Luxatemp–a successful material celebrates its anniversary

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Find out more about Luxatemp from your official DMG dealer or see www.dmg-dental.com/20-years.

* The Dental Advisor, Vol. 28, No. 01 Jan/Feb 2011, Pg. 9
*REALITY now, Oct 2011, No. 228, Pg. 1
Luxatemp Star is sold in the USA as "Luxatemp Ultra" and was also tested under this name.

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