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PREVEST DenPro®
THE FUTURE OF DENTISTRY

(1939-2020)

Dr. John T. McSpadden

EDITORIAL

Don't press the panic button :

Spread Of Covid 2 has gripped our entire nation and has caused a severe crisis with devastating social and economic effects. Fear and anxiety resulting from this outbreak has caused over whelming consequences on the emotional and social well-being.Coping with stress and preparing for the future is the only way we can make our community stronger.

This outbreak has put thousands of dentists in a state of fear and confusion. Transmission of SARS-Cov-2 may take place in any normal dental setting. Aerosol producing procedures, blood contact and contaminated residuals create an easy doorway for transmission.

Future of dental practice is strongly dependent on the planning and implementation of effective protocols which will help us in fighting such outbreaks. Dental health care professionals should adopt a strict protocol for patient screening, PPE's , sterilization and disinfection procedures to control the spread of such communicable diseases.

Choice of disinfectants, modes of sterilization, use of screening tools and choosing the right technologies to combat such deadly outbreaks will be the way forward . At present, planning of work spaces and preparedness to tackle the "post covid" dental practice poses enormous challenges and creates widespread confusion. Dental professionals should wait for the government and the health agencies to publish official guidelines for dental setups before making any substantial changes

However measures to improve air quality and ventilation systems would be a top priority. However these tough times will pass and open up new opportunities. The lessons learnt will surely improve the way we practise dentistry.

We are Indians and our inner strengths will enable us to prevail over such difficult situations.

Untill Then ...

"Stay Strong, Stay Safe"

Dr. Sai Kalyan

Research Rat Race

This write up I was planning to pen down since a long time and it gives me immense pleasure that I am doing this on this particular platform. There is a strange similarity in the number of dental journals in the present times and the number of mushrooming dental colleges in India back in early 2000. The similarity continues to be in the product both are delivering and the effect both are having on dentistry.

Since journals are service providers and a proper check is not maintained on them, there is a market which is created for the articles published in such journals. However, such publications can earn the academicians some points in DCI criteria but it saddens me to write about their futility when it comes to contributing to main stream dentistry.

Everyone who doesn't know about how a specific material or technique makes it to the standard text books and is accepted as a treatment protocol, let me introduce you to the highest form of research which helps a material or technique to be accepted i.e Meta analysis. Meta analysis is a way of reviewing all the valid, genuine and standard research papers published on the topic and then analyzing there results collectively and finally declaring the new material and technique ready to be accepted as a standard protocol or not.

Considering the criteria of meta analysis which are carried these days a lot of substandard journals never make to the inclusion criteria nor do the ill planed , just for the sake of it, done studies. Therefore , even after having a lot of scientific papers published under someone's name its just a number and the actual contribution of one's paper to the science is minimum, if not zero.

Finally , through this article I want to call out the system of focusing on the number of publications as a mark of excellence, promotion and grading in our dental exams. Only one standard, bonafied and innovative research published in a gold standard journalis worth infinite studies done just to fulfill points criteria as in the bigger scheme of things ill planned studies don't contribute to science and only helps in ulterio motive. In my opinion this is a very important criteria which we should keep in mind the next time we plan a study and want to really contribute to this great science, which brings us all together, dentistry. Remember, if we don't then even if we win a rat race we still remain a rat.

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TELEDENTISTRY

ABSTRACT :

Digital technology has transformed all aspects of modern life, including the work environment, education, leisure time and healthcare. The use of technology in dentistry ("teledentistry") is emergingas the most viable approach to dental care due to the benefits it offers dentists and their patients. Dentistry involves close face-to-face interaction with patients, hence during the COVID-19 pandemic, it has mostly been suspended. Many people, fearful of getting infected with COVID19 are reluctant to seek dental care in the midst of the pandemic. Are you considering integrating teledentistry into your practice?

In this review, we provide a brief overview of applications of teledentistry.

KEYWORDS :

Technology, Telehealth, Telemedicine, Teledentistry, COVID-19.

INTRODUCTION :

In recent years, development of telecommunication technology, computers, digital diagnostic imaging services, software for analysis and use of electronic information have evolved the terms such as Telehealth and Telemedicine, describing health care services at a distance.[1] Telehealth" can be defined as the merger of information in digital form with communication devices to improve health care. "Telemedicine" can be defined as the use of digital information and communication technology to provide healthcare when direct provider-patient interaction is inefficient or not possible.[2]

Teledentistry is an aspect of telemedicine that deals with dental care. It is a combination of telecommunications and dentistry. According to **Jampani et al**[3], the concept of teledentistry was introduced in 1994, when the U.S. military sought ways to improve communication among dentists and dental laboratory technicians, thereby enhancing patient care.**Cook**[4] defined it as the practice of using video-conferencing technologies to diagnose and to provide advice about the treatment over a distance.

METHODS OF TELEDENTISTRY :

Teledentistry can occur in two forms "real time

consultation" and "store and forward."Real-Time Consultation involves a video conferencein which dental professionals and their patients, at different locations, may see, hear, and communicate with one another. Store-and-ForwardMethod involves the exchange of clinical information and static images collected and stored by the dental practitioner, who forwards them for consultation and treatment planning. The patientis not present during the "consultation".[5,6] Dentistscan share patient information, radiographs, graphical representations of periodontal and hard tissues, therapies applied, lab results, tests, remarks, photographs, and other information transportable through multiple providers. This data sharing can be of extreme importance for patients, especially those in need of specialist consultation.[7]

TELEDENTISTRY SUBUNITS :

a) Teleconsultation :

The most common form of teledentistry is teleconsultation in which patients or local healthcare providers seek consultation from dental specialists using telecommunication. It has been valuable for the consultation of patients who are physically and intellectually challenged, and patients from aged care facilities and prisons.[8,9]

b) Telediagnosis :

Telediagnosis makes use of technology to exchange images and data to make a diagnosis of an oral lesion. **Haron et al**[10] developed Mobile Mouth Screening Anywhere (MeMoSA®) to facilitate early detection of oral cancerand found it to be beneficial for patients with limited access tospecialists. **Skandarajah et al**[11] evaluated a tablet-based mobilemicroscope (CellScope device) as an adjunct for screening of oral cancer. During the current COVID-19 pandemic investigators from Brazil recently illustrated the use of WhatsApp and telemedicinein making a differential diagnosis of oral lesions.[12] As most of the oral lesion are often directly evident telediagnosis can be made by dental photography thus reducing the need of close clinical examination.

c) Teletriage :

Teletriage involves the safe, appropriate and timely disposition of patient symptoms via smart phone by specialists. It has been used for remote assessment of school children and prioritize those requiring dental care without unnecessary travel regardless of socio-economic and geographical difficulties in many places.[13]

d) Telemonitoring :

Monitoring of dental patients require frequent visits of patients to their dentist to monitor the progress of treatment. The use of telemonitoring can replace the frequent physical visits by virtual visits for regular monitoring of treatment outcomes and disease progression.[8] In a recent pilot study during this pandemic, telemonitoring appeared to be a promising tool in the remote monitoring of surgical and non-surgical dental patients, especially reducing costs and waiting times.[14]

APPLICATIONS OF TELEDENTISTRY :

The main application of Teledentistry is Tele-education and remote diagnosis in remote areas of country like India where the majority of the population lives in rural areas. In rural areas, health care facilities are insufficient and inadequate, and tools like Teledentistry can contribute substantially in bridging the gap between demand and supply.

1. Role in Oral Medicine and Diagnosis :

Teledentistry has been used to aid in the diagnosis of oral pathology. **Torres-pereira c et al**[15] suggested that distant diagnosis is an effective alternative in the diagnosis of oral lesions using transmission of digital images by email. Smartphone cameras have been used to identify potentially malignant oral lesions[16], with a sensitivity greater than 70% and specificity of 100%, as compared with direct assessment by specialists in oral medicine. The complexity and difficulty of managing orofacial disorders usually results in a consultation with or referral to a specialist. Teledentistry can bring the specialist in orofacial pain or oral medicine to the rural dentist or dental hygienist through remote teleconsultations.

2. Role in Orthodontics :

Orthodontic specialists, after taking dental impressions of the jaws, instead of casting jaw models in plaster, send the impressions by special postal service to specialized companies for 3D digitization of working models; then they create-digital 3D models using patent-protected systems for 3D scanning and digitization, form a computer file, and return it via Internet to the therapist. The therapists share this digital model of the jaws with others via network, effectuating necessary consultations with his colleagues. Peer teleconsultants, if required, may also participate from a distance in the creation of a plan and program of orthodontic management, using digital patient model. **Stephens CD et al**[17] studied the effect of teledentistry advice on outcome of orthodontic treatment provided by general dental practitioners showed that "TeleDent SW"enabled them to offer a better service for their patientsand use specialist services more appropriately. **Cook J et al**[18] tested an online teledentistry service and showed that it helped to reduce the high level of inappropriate orthodontic referrals to consultants and provided general dental practitioners with quick access to advice that would enable them to tackle a wider range of cases them selves. **Favero L et al**[19]stated that telecommunications applied to dentistry is particularly useful in the orthodontic field, as minor emergencies (rubber ligature displacement, discomfort due to the appliance, irritation of cheeks) can be solve deasily at home, reassuring patient and parents on one hand, and limiting visits to the dental office to cases of real need.

3. Role in Endodontics :

Periapical lesions constitute a large portion of dental pathology and their treatment is commonly performed by dentists who are not specialists in endodontics. Modern telemedical systems are an ideal solution for seeking and obtaining timely expert help in that regard. **Zivkovic D et al**[20] demonstrated that teledentistry based on the Internet as a telecommunication medium can be successfully utilized in the diagnosis of periapical lesions of the front teeth, reducing the costs associated with distant visits and making urgent help available. **Brullmann D et al**[21] reported that remote dentistscan identify root canal orifices based on images of endodontically accessed teeth.

4. Role in Oral and Maxillofacial Surgery :

Telemedicine could conceivably be one way to improve access to specialist oral surgery care. As the presence of oral surgeons outside large centres is very limited, the availability of high quality telemedical consultation is essential. **Duka M et al**[22] showed that diagnostic assessment of the clinical diagnosis of impacted or semi impacted third molars assisted by the telemedicine approach was equal to the real-time assessment of clinical diagnosis.

5. Role in Prosthodontics :

Designing shapes and interjaw relationships using CAD software is a complicated process and requires skills of computerized dentistry specialist. The resulting project file is encrypted and sent by e-mail to a teleconsultant for model analysis, projection of the shape of restoration, of its height and interjaw relationships using a virtual articulator; the completed project is then encrypted and returned to the clinic, usually by e-mail. **Ignatius E et al**[23] investigated the use of video conferencing for diagnosis and treatment planning for patients requiring prosthetic or oral rehabilitation treatment and stated that video-consultation in dentistryhas the potential to increase the total number of dental specialist services in sparsely populated areas.

6. Role in Periodontics :

The Web-based teledentistry consultation syste developed for the US Department of Defence dental clinics showed that referrals to oral surgery, prosthodontics and periodontics had the highest number of consults.[24]Fifteen patients under went periodontal surgery at Fort Gordon, Georgia, and a week later, their sutures were removed at a location150 miles away under the tele-supervision of the Periodontist. Only 1 patient made the return-trip for a follow-up procedure.

7. Role in Pediatric and Preventive Dentistry :

Prevention and early detection of caries are the key factors in the suppression of this mass disease of etiologically insufficiently known nature. It has been demonstrated in real conditions that distant diagnosis of pediatric dental problems, based on non-invasive imaging, is a valid grounding for an appropriate insight into dental problems. The success with these teledentistry systems largely depends on the quality of intraoral cameras.[25]

ADVANTAGES[26]

- ♦ Timely diagnosis of oral diseases
- ♦ Reduces complications due to delayed diagnosis
- ♦ Scheduled appointments, reduces waiting time
- ♦ Improved access to primary and specialty dental services
- ♦ Availability of dental records if a problem is encountered when away from home
- ♦ Improved communication between the oral health care team and the patient
- ♦ Promote patient education, and assess patient progress (i.e. Oral hygiene efficacy)
- ♦ Avoid cost of travel to location for face-to-face examination

LIMITATIONS :

Teledentistry has not yet become an integral part of mainstream oral health care. The reasons are many including: absence of direct provider to patient contact, limited internet access in certain regions, limited technology literacy among patients, resistance to technological innovations (elderly), lack of compatibility of technology with other digital records, absence of copyright, licensure and financial guidelines, medical/legal issues, coordination difficulties between hub and remote sites and increase in cost of practice. If a technical problem occurs during data transmission that may cause a misdiagnosis or medical error, if patient data are lost or stolen during the process of transmission, the entire project may need to be discontinued.[27] A clear, nationwide teledentistry protocol is needed regarding the forms, equipment, efficiency, privacy and security which would enable organizers to control the problems caused by different standards and result in a more objective program evaluation. A standardized recording system would make the data-collecting process much easier and decrease the learning curve.

CONCLUSION :

Teledentistryis the present and future of dental care delivery. It offers the possibility of improved communication between oral healthcare providers and patients via email communication, specific apps for smartphones and wearable devices. This communication can improve patient compliance by monitoring oral hygiene practices and sending reminders about scheduled appointments. However, certain challenges have to be addressed before teledentistry can rise to its peak. Adequate training and educating dentists about this technology will increasethe acceptance of teledentistry. During the current pandemic, thedental school curriculum not only needs to be updated regardinginfection control measures, teledentistry should also beroutinely taught as a solution for prevention of infection transmission.The widespread application of teledentistry still requires additional research on clinical efficacy as well as cost effectiveness.

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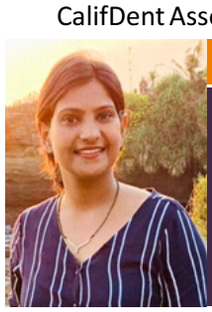

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She has completed her masters in 2017 from Subharti Dental College & Hospital, Meerut.
Has published many papers in National and International Journals.
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The Story Behind Platform Switching

Like most good things in life are accidental, Platform Switching too was discovered accidentally.

During late '80s Nobel Biocare introduced wide diameter Branemark implant (5mm) without providing a corresponding platform abutment. Restorative dentists were compelled to use the available “standard” (3.75/4.0mm) diameter abutments. Similarly, Implant Innovations Inc. in 1991 introduced wide diameter implants (5/6 mm) along with matching wide diameter platforms.

After the introduction, matching diameter prosthetic components weren't easily available. So many of those early implants were restored with standard diameter(4.1mm) prosthetic components. After a 5-year period, the typical pattern of crestal bone resorption was not observed in Platform Switched implants. Thus, the discovery of the concept was a coincidence. Platform switching concept was introduced in the literature by Lazzara, Porter and Gardner.

WHY IS PLATFORM SWITCHING IMPORTANT?

The concept of the platform switching is aimed to minimize the vertical bone loss by providing different diameters of the platform and the abutment.

HOW DOES IT WORK??

a. Inward positioning of the implant-abutment interface allowed the biologic width to be established horizontally, as an additional horizontal surface area is created for soft tissue attachment

b. The PS design increases the distance between the inflammatory cell infiltrate at the microgap and the crestal bone, thereby minimizing the effect of inflammation on marginal bone remodelling.

c. Reduction in stresses, especially in the crestal region by shifting the stresses away from the bone implant interface.

The clinical advantages of this concept are as follows :

a. Marginal Bone Preservation.

b. Increased implant longevity.

c. Reduced concentration of force on the crestal area.

d. Improved esthetics.

LIMITATIONS OF PLATFORM SWITCHING :

There exists a possibility of the deformation in abutment/screw due to the concentrated stress on the junction of abutment and platform. This calls for the need of stronger materials in the production of abutment and screw to prevent possible fracture during patient use.

If normal implants are to be used, smaller diameter abutments may compromise the emergence profile in aesthetic areas.

Around 3 mm of soft tissue should be present to place plat form switched implants or else bone resorption is likely to occur.

For platform switching to be effective, the under sizing of the components must be carried out during all phases of the implant treatment.

HOW TO GET BENEFITS OF PLATFORM SWITCHING :

Gone are the days when clinician had to choose components to platform switch the implant. Most Implant companies today have PS integrated in the implant system itself. Namely - Nobel Biocare, Straumann, Dentium, Osstem etc.

WHAT DOES PLATFORM SWITCHING MEANS TO PATIENTS :

A paradigm shift has occurred within health care to 'patient-centered' care.

This has led to widespread agreement on inclusion of patient-reported assessments in dental research and practice.

Today are popularly known as patient-reported outcome measures (PROMs).

In a recent PROM (Patient Related Outcome) study by Horwitz et al, patients experienced minimalistic pain and high degree of satisfaction in esthetics and function. Indicative of over all patient benefit in implant therapy from platform switched implants.

[Journal of Oral Implantology 44(5). May 2018]

RECENT SCIENTIFIC STANDING :

For a long time platform switching was considered to be the most effective way to achieve marginal bone preservation.

Riding the tide, almost all implant companies implemented platform switching as an essential feature of implant systems.

There are a plethora of studies showing positive effects of platform switching.

However, in a recent clinical research conducted by Tomas Linkevicius group has shown that soft tissue thickness is a very critical factor in preserving crestal bone levels around implants.

They found that, if vertical soft tissue thickness is 2mm or less, crestal bone resorption of 1.5mm occurs during formation of biological seal between soft tissues and implant-abutment/restorative surface.

Even implants with platform switched design could not maintain bone, when vertical soft tissues were thin at the time of implant placement procedure.

This leads to the dilemma of what is more important :

BIOLOGY OR IMPLANT DESIGN?

With more such research in future, there is hope for better understanding of bone dynamics.

Dr. Manthan Desai

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Director of Industries, MD SIDCO visits Prevest DenPro and praises the company for driving medical device industry in J&K

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THE FUTURE OF DENTISTRY

MD SIDCO along with Director of Industries & Commerce Mrs. Anoo Malhotra and GM, DIC Jammu Mrs. Subah Mehta and other officials of Sidco and Industries department visited Prevest DenPro, a leading Indian manufacturer of dental products. Managing Director of Prevest DenPro Atul Modi and Executive Director Mrs. Namrata Modi organised a tour of the factory and explained the processes involved in the manufacture of high quality Dental material.

The team took a note of the technological achievements, Research & development of Prevest DenPro and appreciated its role in healthcare innovation, sustainable growth and result oriented efforts. They highlighted the efforts of Prevest DenPro in designing and manufacture of indigenous dental materials and their constant thirst to manufacture innovative dental materials.

A key part of visit was a interactive session with the management and staff of Prevest DenPro, during which the dignitaries talked about the importance of Dental Manufacturing in J&K. They emphasised the efforts of the company manufacture more, invest more and export more. The team praised Prevest staff for the important role that they are playing in making J&K a manufacturing, techsavvy and exporting State.

The Prevest DenPro was named the Best Indian Dental material manufacturer in 2018 at the Indian Dental Asoociation Awards. At 40000 sq feet, and with more than 100 employees working in manufacturing roles at the site, Prevest DenPro manufacturing plant is the largest dental material manufacturing facility with an environment of high innovation. Prevest received various awards including the prestigious Sushruta award for the best dental manufacturer in India.

Celebrating the Legends...
Dr. John T. McSpadden
(1939-2020)

PROFILE Of the month

Dr. John T. McSpadden is recognized as an innovator and leader by the global endodontic community. He has received numerous awards, including the prestigious President's Award and the Louis I. Grossman Award from the American Association of Endodontists. He achieved Honorary status from the Société Française Endodontie as he has lectured internationally on all continents.

A retired endodontist from Chattanooga, Tennessee, Dr. McSpadden is considered the father of rotary endodontics. His textbook, Mastering Endodontic Instrumentation, represents a culmination of Dr. McSpadden's intellectual curiosity weaved with his engineering background to reflect an evidence-based approach to the principles of endodontic instrumentation.

Dr. McSpadden earned his Bachelor of Science from the University of Tennessee, Knoxville in 1963 and Doctorate of Dental Science from the University of Tennessee College of Dentistry in 1967.

The John T. McSpadden Spirit of Service Award is presented annually to the postgraduate endodontic resident who has provided exemplary patient care, pursued excellence in scholarly activity and demonstrates altruism