Recent Research in Science and Technology

An International Refereed Journal

www.recent-science.com

ISSN: 2076-5061

PROCEEDINGS OF "CONFERENCE ON RECENT ADVANCES IN BIOMATERIALS DEC 17-18 '10"

HELD AT SAVEETHA SCHOOL OF ENGINEERING, SAVEETHA UNIVERSITY, THANDALAM, CHENNAI-602 105, TAMILNADU, INDIA

SAVEETHA UNIVERSITY

(Established Under Section 3 of UGC Act 1956)

Recent Research in Science and Technology 2010, 2(12): 01-09
ISSN: 2076-5061
www.recent-science.com

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SCOPE OF THE CONFERENCE

"The conference will provide a platform for discussing current advancements and future trends in biomaterials for medical and pharmaceutical applications. Through the synergistic approach of applied chemistry and physics, material science, electronics, mechanical engineering, biochemistry and medicine, this Conference on biomaterials includes how the deeper insight into biological events and its interplay with nanotechnology may support the development of a generation of novel materials, micro-nano-devices and molecular level approaches suited to solve relevant biomedical problems both for therapy and diagnostics. The conference will provide an excellent opportunity to meet and forge collaboration with large number of experts with diverse specializations including engineering, basic sciences, medical and dental professionals, etc. For the research scholars and students, CRAB 2010 will be an eye opener and an excellent opportunity to meet experts from various institutions in India and abroad."

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THEME 1
BIOMATERIALS FOR ORTHOPAEDIC, GYNAECOLOGICAL, OPHTHALMIC, SURGICAL AND DENTAL APPLICATIONS

Abstract id:44

MATERIALS USED IN MAXILLOFACIAL PROSTHESIS

Dr. Abirami G.

Saveetha Dental College, Saveetha University, Chennai- 77

Maxillofacial Prosthesis Have Been Used To Treat The Patient Whose Facial Defects Cannot Be Restored By Means Of Plastic Reconstuction.These Prosthesis Have Been Made With Various Materials From Time Immemorial.Recent Advances In Biomaterial Science Have Made Materials Used In Maxillofacial Prosthesis Life Like In Both Feel And Visual Perception.This Paper Seeks To Show The Advances Made In Such Material.

Keywords: Maxillofacial, Immemorial

Abstract id:45

A REVIEW OF COMPOSITIONAL ASPECTS OF DENTAL APPLICATIONS

Akanksha Srivastava, Jalise Aaisa, Tarun Kumar AT, Kishore Ginjupalli, Nagaraja Upadhya P

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Alginate is an elastic irreversible hydrocolloid, widely used for recording the impressions of dentulous arches, impressions for making models for diagnostic purposes, and for duplicating the casts. Introduction of alginate as an alternative material to agar impression material was inevitable due to the scarcity of agar. Alginate when dissolved in water forms a viscous solution which can be converted to gel using a calcium salt. It is truly hydrophilic and most pleasant impression material with an ability to record all the finer details of the undercuts with sufficient elastic recovery. Today, their use far exceeds the use of all other impression materials in general dental practice. Alginate as an impression material evolved with several modifications being incorporated in the composition from time to time to improve their properties and clinical performance. These modifications are mainly done to improve the properties such as ability to produce minimum or no dust during manipulation, to indicate various stages of manipulation by color change, to improve resistance to tearing and to improve handling characteristics. This review is an overview of the evolution of conventional and modified alginate impression materials with an emphasis on the material aspects and clinical implications.

Keywords: dentulous, arches, hydrocolloid

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Abstract id:49

AMORPHOUS CALCIUM PHOSPHATE - CLINICAL APPLICATIONS IN CONSERVATIVE DENTISTRY

Dr. Arif Bhasha, Prof.Dr.C.V.Subbarao

Saveetha Dental College& Hospital, Saveetha University, Chennai – 77

The Amorphous Calcium Phosphate helps in restoring mineral balance in efficient way in natural building blocks of the teeth.These materials are available in tooth paste delivery system it was initially used as tooth paste, at present it is used as tooth whitening product and also as pit & fissure sealants .Clinically it is proved to be anti-cariogenic and re-mineralising the sub surface caries lesion.These materials are available as various commercial products and when applied to tooth surface it strengthens enamel, protects dentine & prevents dentine sensitivity. It also been reported that people suffering from saliva problems also benefits since it replenishes tooth surface by supporting natural flow of saliva.

Keywords: Amorphous, anti-cariogenic, saliva.

Abstract id:50

MORPHOUS CALCIUM PHOSPHATE

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Saveetha Medical College, Thandalam, Chennai, India

Background: PIH is one of the commonest complications of pregnancy causing 15.6 % high mortality and morbidity for both mother and fetus especially in developing countries. Aim: The aim of this study was to compare the serum lipid profile and oxidative stress between healthy normal pregnancy and Pregnancy induced hypertension. Materials: The study population comprised of 30 pregnant women divided into two groups, PIH women as cases (n=15) and healthy normal pregnant women as controls (n=15). Methods: Lipid profile was estimated by enzymatic methods & MDA by TBARS (Thio Barbituric Acid Reacting Substances) method. Results: There was a significant increase in the MDA, Total cholesterol, Triglyceride, LDL and VLDL levels in PIH patients when compared to control group. There was a decrease in serum HDL level in PIH patients when compared to control subjects. Conclusion: From the above results we conclude that there is a significant increase in both oxidative stress and serum lipids except HDL which showed a decrease in PIH patients than normal healthy pregnant women. Estimation of MDA and serum lipids can be included as diagnostic parameters for PIH.

Keywords: Pregnancy induced hypertension, malondialdehyde, high density lipoprotein, low density lipoprotein, very low density lipoprotein, oxidative stress.

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Abstract id:51

PRECAUTION AND PREVENTIONS OF MERCURY TOXICITY IN DENTISTRY – CLINICIAN'S CONCERN

Dr. P.A. Bhargavi, Prof. Dr. C.V. Subba Rao, Dr. C.S. Chandana

Dept. of Conservative dentistry & Endodontics, Saveetha Dental College, Saveetha University, Chennai-77

There has been increasing awareness among the dental practitioners and clinical assistants regarding mercury toxicity. Little attention is given to mercury waste disposal and environment concern related to it.
It is time that the dental practitioners should be aware of the possible potential toxicity on their health as well as on patient before indiscriminately sacrificing the existing amalgam restorations for aesthetic alternatives.
Removing amalgam restoration may increase vapour levels of mercury to unhealthy levels in the clinical atmosphere which is considered as a greater risk of the insignificant level of mercury getting released during manipulation and mastication.
Therefore, necessary precautions should be taken during handling of silver amalgam. Toxicity of mercury is more concern to the dentist than to the patient.
Therefore disposal waste from silver amalgam manipulation resulting in excess mercury and remaining amalgam should follow the guidelines as per the international protocol laid down for waste disposal to avoid the possible environment pollution and ecological imbalance.
The biomaterials used in dentistry do not release toxic doses but their effects caused by accumulation in vital organs cannot be ignored.
This paper highlights some of the aspects of hygienic disposal of mercury and silver amalgam as a precaution to minimize or prevent toxic effects of mercury to the dentist and environment.

Key Words: amalgam restoration

Abstract id:53

MATERIALS USED IN ROOT CANAL THERAPY

Deeksha Grotra, Dr C.V. Subbarao

Saveetha Dental College& Hospital, Saveetha University, Chennai-77

The field of biocompatibility is interdisciplinary and draws all knowledge from material science, bioengineering, biochemistry and other fields. Dentistry shares concern about biocompatibility with other fields of medicine.
In the development of any biomaterial one must consider strength, aesthetics and functional aspects of the material as well as biocompatibility
Various materials are being used in endodontic therapy in clinical practice which include calcium hydroxide, zinc oxide eugenol, resin sealers. Glass Ionomer cement, composite resins, amalgam etc. These materials are widely accepted as biomaterials and each has got special properties which makes it an effective material of choice in root canal therapy
This paper highlights the properties and clinical application of the biomaterials in endodontic therapy

Key Words: as biocompatibility, Glass Ionomer, , composite resins

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Abstract id:56

SYNTHETIC BONE GRAFTS IN ORTHO PERIO INTERDISCIPLINARY TREATMENT

Dr. E. Muruganandam, Dr.K.K. Shantha Sundari M.D.S.

Saveetha Dental College & Hospitals, Saveetha University

Developments in biomaterials research are steadily emerging to challenge the standard use of allografts and autografts as the preferred options.Autogenous bone is a desirable graft source insofar as it provides a scaffold for osteoconduction, contains noncollagenous bone matrix proteins that stimulate osteoinduction, and incorporates progenitor stem cells for osteogenesis.Despite its wide prevalence, however, the use of autograft material poses several disadvantages like the discomfort, time and expense of two procedures to accommodate the patient's need for bone grafting. At worst, the initial harvesting procedure can precipitate chronic pain, significant blood loss, infection and other iatrogenic complications, prolonged hospital stay and recovery time.While cadaver-derived allograft, the second most frequent technique, precludes the need for a second surgery, disadvantages like viral infection, graft rejection, inconsistent results, donor bone is not always available at the time of surgery.The inherent shortcomings of both autografts and allografts and considerable recent progress in bioscience have driven the development of important emergent technologies.Artificial bone can be created from ceramics such as calcium phosphates (e.g. hydroxyapatite and tricalcium phosphate), Bioglassand calcium sulphate. Newer synthetic materials like Bio-oss, Cerasorb, Bio-Gran also have been introduced.In this poster presentation, the various synthetic bone grafts will be presented as an overview, with a case of ortho-perio interdisciplinary treatment where Ossifi-synthetic grafts were used.

Abstract id:59

FIBRE REINFORCED COMPOSITE- A MODERN CONCEPT IN ENDODONTIC PRACTICE

Prof. Dr. C.V. Subba Rao, Dr. Pranau Vanajasan. P, S.M.Hafiz

Saveetha Dental College & Hospitals, Saveetha University

The biologically accepted material of choice for post – Endodontic treatment is Fibre re-inforced composite post . Fracture teeth with loss of 2/3 rd of the crown need Root canal therapy followed by post endodontic restoration. Subsequent to root canal therapy the affected tooth is restored with full crown.
The fibre reinforce composites are structural materials that have two distinct consituents such as reinforcing component which provides strength and stiffness whereas the surrounding matrix supports the reinforcement and provides workability.
The biologiocally accepted material found to be ideal due to its strength ,desirable esthetic characteristics, ease of application ,adaptability to various shapes and potential for direct bonding to tooth structure . Further it has been claimed by clinical trials that FRC materials showed potentiality for long term clinical success.
This paper highlights the properties and uses of Fibre reinforced composite material in Endodontic practice

Key Words: that FRC materials, Endodontic

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Abstract id:76

GETTING INVISIBLE! THE TREND PRESENTLY IN VOGUE

Dr Neha Singhal, K K Shantha Sundari

Saveetha Dental College & Hospitals, Saveetha University

Technological and material advancements in Orthodontics have lead to a constant improvement in the quality of orthodontic treatment ultimately, benefitting the patient.

A contemplative analysis of the various orthodontic advancements reveal an important truth…. The biologic problem – malocclusion –skeletal-dental etc, have remained singularly unchanged ……..New solutions to the old problems have evolved principally from advancements in orthodontic materials (Biomaterials) and their cascading end effect on appliance design and treatment strategies (Biomechanics). Virtually every facet of Orthodontic and Orthopaedic treatment has been changed for the better - thanks to the advancement in the orthodontic material & biomechanics arena. Orthodontic material science is a rapidly emerging sub discipline of Orthodontics. The earlier we recognize and foster it , the better it would be for Orthodontics .

The prospective orthodontic patient today expects a beautiful smile at the end of treatment, but is equally concerned with appearance while undergoing treatment. Early attempts to coat metal brackets with a tooth colored coating were unsuccessful due to failure of the coating to adhere and its translucence. There was a firm trend towards the development of smaller stainless steel brackets. Although these generally provide the technical performance required by the orthodontist, they offer little aesthetic advantage over conventionally sized appliances.

Even though there is a feeling that non-metallic arena is being neglected in the development process of newer products it actually is not the case. Newer products in the form of aesthetic brackets , are flooding the market. Because wide arrays of metallic, ceramic and polymeric materials are used in the profession, and new materials are continuously being introduced for the manufacture of aesthetic brackets , it is essential that the scientific bases for the selection and proper use of materials for clinical practice be thoroughly understood. Thus, this presentation is focussed on current trends in aesthetic brackets and their clinical applicability.

Key Words: Orthodontics, aesthetic

Abstract id:79

RECENT ADVANCES IN METALS IN DENTISTRY

Dr. Parul Aggarwal

Saveetha Dental College, Saveetha University, Chennai-77

Metals Have A Long Standing History In The Field Of Dentistry. By Virtue Of Their Desirable Physical And Biological Properties They Have Found Use From Simplest Of Applications Such As Instrumentation And Framework For Dentures To Very Zenith Of Contemporary Dentistry Namely Implantology. The Field Of Mettalurgy Has Progressed By Leaps And Bounds In The Last Decade Opening Up New Avenues To The Integration Of Cutting Edge Technology With Modern Day Dentisty.

Key Words: Orthodontics, aesthetic

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Abstract id:80

TOPIC:ADVANCES IN DENTAL CERAMICS

Dr. Prathap Sekhar

Saveetha Dental College And Hospital, Saveetha University,Chennai-77

Ceramics, because of its esthetics is being widely used in prosthodontic management of patients . Dental ceramic technology is one of the fastest growing areas of dental materials, research and development. Among the innovations that have taken place in the recent times, in dentistry, the new metal free dental ceramics such as hot-pressed , injection-molded , slip-cast and glass ceramics have revolutionized Prosthodontics . In the past 2 decades, several all ceramic crown systems have been developed and introduced. The demands for esthetic dentistry is always on the rise and it will be influential in determining the range of products available. This paper presentation will throw light on the recent advances in dental ceramic .

Key Words: Orthodontics, aesthetic, Prosthodontics

Abstract id:96

THE MAXILLO-FACIAL PROSTHETIC MATERIALS OF THE NEW ERA

Dr.Tony Thomas. C

Reader, Amrita school of dentistry, Kochi, Kerala, India

The maxillo-facial prosthetics includes the treatment of congenital defects and acquired defects like trauma and cancer with artificial substitutes.Due to the advancements in medical science, the life expectancy of these patients has been increased,there by increasing the need for correction of these defects.
Even with the advances in plastic and reconstrustive surgeries,many defects still has to be rectified with artificial substitutes.This created the need to improve the avilable materials for maxillo-facial prosthetics.This presentation is an overview of the newer materials available for maxillo-facial prosthetics and their advantages and limitations.

Key Words: Prosthodontics, facial prosthetics

Abstract Id:127

RECENT ADVANCES IN METALS IN DENTISTRY

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Metals have a long standing history in the field of dentistry. By virtue of their desirable physical and biological properties they have found use from simplest of applications such as instrumentation and framework for dentures to very zenith of contemporary dentistry namely implantology. The field of mettalurgy has progressed by leaps and bounds in the last decade opening up new avenues to the integration of cutting edge technology with modern day dentisty.

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Abstrct Id:128

ADVANCES IN DENTAL CERAMICS

Prathap Sekhar

Saveetha Dental College And Hospital, Saveetha University,Chennai-77

Ceramics, because of its esthetics is being widely used in prosthodontic management of patients . Dental ceramic technology is one of the fastest growing areas of dental materials, research and development. Among the innovations that have taken place in the recent times, in dentistry, the new metal free dental ceramics such as hot-pressed , injection-molded , slip-cast and glass ceramics have revolutionized Prosthodontics . In the past 2 decades, several all ceramic crown systems have been developed and introduced. The demands for esthetic dentistry is always on the rise and it will be influential in termining the range of products available. This paper presentation will throw light on the recent advances in dental ceramic .

Abstract Id:129

BIOGLASS AND ITS APPLICATION IN DENTISTRY

Dr. Saptarishi bannerji

Saveetha Dental College and Hospital , Saveetha University,Chennai-77

The use of bioglass has revolutionized the concept of grafting in dentistry. This paper looks into the property development and application of bioglass in the field of dentistry.

Abstract Id:130

IMPLANT BIOMATERIALS

Dr. Siddhartha Sasikumar

Saveetha Dental College, Saveetha University, Chennai - 77.

The Biocompatibility Profiles Of Synthetic Substances Used For The Replacement Or Augmentation Of Biological Tissues Have Always Been A Critical Concern With The Health Care Disciplines.Special Circumstances Are Associated With Dental Implant Prosthetic Reconstruction Of The Oral-Maxillofacial Areas Because The Devices Extend From The Mouth Across The Protective Epithelial Zones, Onto Or Into The Underlying Bone.This Paper Elucidates The Properties Of Biomaterials And Their Biological Significance

Recent Research in Science and Technology
An International Refereed Journal
www.recent-science.com
ISSN: 2076-5061

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ISSN: 2076-5061

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