

Q.... No 1.

Answer.. 1

### Calcium hydroxide

#### Introduction..

- . Calcium hydroxide is dental material
- . It is organic compound with chemical formula  $Ca(OH)_2$ .
- . It is introduced in dental profession by Hermann in 1921.
- Supplied two past systems. One base past another catalyst past.
- Supplied single past.

#### Composition

- . Accelerator past.
- . Alkyl salicylate 36.42 %
- . Inert filler titanium oxide 12.14 %
- . Barium sulphate 32.35 %

#### Base past..

- . Calcium hydroxide 50.60%
- . zinc oxide 10%
- . Zinc stearate 0.5%.

#### Sitting reaction.

Alkyl salicylate chelating agent. On mixing this with phase containing zinc oxide and calcium hydroxide, amorphous calcium disalicylate is formed.

- . The sulphonamide compound used in the past is a carrier.
- . Some cements contain paraffin instead of sulphonamide. These elements are more hydrophobic and release their calcium hydroxide more slowly.
- . The calcium hydroxide present in stoichiometric excess.

### Manipulation..

- . Equal amount of base and catalyst.
  - . Mix to homogeneous color
  - . Apply to dentin as lining
  - . Mixing time 5. 10 sec.
  - . Working time 30 sec.
- Setting time 1 minute.

### Properties..

#### STRUCTURE.

Arrangement =amorphous matrix

Crystalline filler

- . Bonding= covalent, ionic.
- . Defect. Pores. Crack.

### Mechanical property.

- . Compressive strength 24hr

### Biologic property.

- . Biocompatible

### Advantages..

- . Initially bactericidal then bacteriostatic.
- . Promote healing and repair
- . High PH stimulated fibroblast
- . Neutralize low PH acid
- . Stop internal resorption.

. Inexpensive and easy to use

#### Disadvantage..

Does not exclusive stimulate dentinogenesis

- . Does exclusively stimulate reparativedetin.
- . Associate with primary tooth resorption
- . May degrade during acid etching.
- . Degrade upon tooth flexure
- . Does not adhere to dentin or resin restoration.

Q..... No 2

Answer. No 2

. **Mineral trioxide aggregate.**

. Quest for never material are never ending especially in the field dental science. Various material have been promulgated. Tasted and standard obtain maximum benefit good clinical performance.

. One such new material mineral trioxide aggregate MTA, which was introduced by Dr. Mahmoud torabinejzad is Loma Linda University.

#### Properties...

PH

. Initially PH 10. 2 which rise to 12. 5 similar o calcium hydroxide following setting the hidg PH theorized to responsible, for antimicrobial, action and biological activity of material

. **Working time** 5 minute.

. **Setting time** 3.4 hr old one 20 minute.

**Solubility** MTA display low or nearly no solubility, which attributable to addition of bismuth oxide.

. **Compressive strength.**

The compressive strength of set MTA is about 70 mpa.

***Biocompatible***

***Good sealing ability***

. Usually thickness of 3mm to 5mm is sufficient provide good seal.

***Retentive strength.*** MTA is not suitable is luting agent.

**Manipulation and setting reaction of MTA**

The MTA past is obtained by mixing 3 part of powder one part of water obtain putty consistency mixing can be done paper an glass labe using plastic. Are metal spatulap

MTA has PH 10. 2 immediately after mixing and increase 12. 5 after hour setting which almost similar Calcium hydroxide

MTA take longer time to set compared any other material. The exact time taken set varies between different studies.

MTA being hydrophilic require moisture to set making obsolete dryness congratulate presence of moisture during setting improve the flexural strength set cement.

**Advantages**

- . Versatile application
- . Biocompatible
- . Excellent sealing ability
- . Set in presence of moisture
- . Lease Cytosan compared with other material

**Disadvantages**

- . Technique sensitive require operate experience.

Answer.. 3

### Dental amalgam

. Dental amalgam is a liquid mercury and metal alloy mixture used in dentistry to fill cavities caused by tooth decay.

. It's used for the majority of direct posterior restorations

. Dental amalgams were first documented in a tang D

. It is used for majority of direct posterior restoration

In July 2018 the EU prohibited amalgam for dental treatment of children under 15 year and pregnant or breast feeding women.

### Composition.

. Amalgam actually compound that commonly use dental application the chemical that are used make amalgam made up 50%mercury which dangerous however other chemical used make compound are

. 22% to32%, silver

. 14%tin

.8%copper

. 0\_2%zinc

### Advantages...

High compressive strength

. Good adaptability cavity wall

. Can be bonded tooth structure

. Long term durability

. Convenience of manipulation

. Fairly low cost

### Disadvantages..

Objectionable esthetic silver color

. Low edge strength

- . Thermal conductive pulp protection
- . Galvanic current with other mettalic restoration.
- . Do not support weakened tooth structure

### Manipulation of amalgam

Trituration..

- . Trituration process by which mercury as allowed react with alloy powder this procedure allow the rubbing the surface oxide amalgam particle

Two type trituration

- 1 hand trituration
- 2 mechanical trituration

Q... 4

Answer no... 4

### Calcium hydroxide

Calcium hydroxide is dental material

- . Is inorganic compound which chemical formula  $Ca(OH)_2$
- . Introduced dental professional Hermann 1921.
- .supplied single past.

Composition..

### CCELERATE PAST

ALKYL salicylate 36. 42%

.inert filler. Titanium oxide 12. 14%,

Barium sulphate 32. 35 %

.calcium sulphate 14. 15%

### Base past

- . Calcium hydroxide 50. 60%,

. Zinc oxide 10%

Zinc stearate 0.5

#### Advantages..

- . Initially bactericidal and bacteriostatic
- . High PH stimulate fibroblasts
- . Promote healing and repair
- . Stop internal resorption

#### Disadvantages...

- . Does not exclusive stimulate dentinogenesis
- . Associated with primary tooth resorption
- . May degrade during a oide etching
- . Degrade upon tooth flexure
- . Marginal failure with amalgam condensation.

Q.... No 5

Answer no 5...

#### Composite resin

. The, late 1960s composite resin were introduce alternative silicate and unfulfilled resin which were frequently use by clinical at the time.

Composite resin display superior qualities

. Dental composite resin tooth color restorative material use to replace decay portion tooth structure

#### Components.

- . Matrix
- . Filler
- . Coupling agent

. Initiators and accelerators

. Pigments

### **Resin matrix.**

Bis-GMA (bisphenol-A glycerol methacrylate)

. UDMA (urethane DIMETHACRYLATE)

. TEGDMA (triethylene glycol dimethacrylate)

### **Color determination.**

. Should be as close to that of the natural tooth as possible

### **Microfilled composites.**

. Conventional composites

. Traditional composites

. Properties

- Filler used: finely ground amorphous silica and quartz
- Filler loading: 70-80 wt%
- Used as a restoration in stress bearing areas such as class IV and II sites

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