

Wider look through cosmetic dentistry

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Abstract:

First of all Importance of smile is due to being the international language of kindness and our role as a clinician is to implement of knowledge to improve our patient's appearance and smile;

Its not only the appearance but also the function and fulfilling the patient's needs as a part of team or individual.

Now let's move on to some history about cosmetic dentistry and we will start with the times of GV black in which teeth were for chewing and esthetic concern was minimal comparing with present. 1903 Charles Land created the "porcelain jacket crown," a substitute for amalgam and gold dental fillings. Veneers were invented by California dentist Charles Pincus in 1928 to be used for a film shoot for temporarily changing the appearance of actors' teeth. Later, in 1937 he fabricated acrylic veneers to be retained by denture adhesive, which were only cemented temporarily because there was very little adhesion. In the 1950s, Michael Buonocore invented a white tooth filling material. He also described an acid etch technique that increased adhesion between dental fillings and enamel. But it wasn't until the 1980s that any sort of permanent bonding truly was developed for patients Laser dentistry was invented in the 1960s but was primarily used for gum disease treatment. 1989 was revolution year teeth whitening. Dr. Haywood and Dr. Heymann, used carbamide peroxide as a whitening agent and home bleaching trays were invented.

At the earliest it is important to establish a good treatment plan by knowing the patient's expectations while encountering the problems list. In esthetic dentistry we have two important divisions: macro and micro esthetics. Macro esthetics consists of shapes, contours, embrasures & buccal corridor. Micro esthetics mostly consists of shade, texture, translucency & all other effects of the tooth.

Before proceeding to oral cavity by looking at face important landmarks should be identified as reference point which are Facial midline, Smile line and pupillary line and our smile design should clearly be in harmony with all other dimensions of individual.

Next is the components of a balanced smile which we will focus more on our specialty part we have several important characteristics and base lines to look for and those consist of : 1-lip line 2-smile arc 3-upper lip curvature 4- lateral negative space or buccal corridor 5- smile symmetry 6- occlusal frontal plane 7-dental components 8-gingival components.

Now we know what to look for but can we proceed to smile design? The answer is NOT YET!

In this stage occlusal stability & then presence of pathological problems such as attrition, abfraction, erosion, abrasion, etc.

should be checked accurately.

occlusal stability has 5 important characteristics:

- Temporomandibular joints are healthy and stable
- Teeth are firm
- No excessive wear
- Supporting structures and periodontium are healthy
- Teeth are stayed in their present position

After elimination of pathogenic factors , its a good idea to revise some points about enamel. Our job as cosmetic dentist is most of the times on enamel . Its true that we are well prepared to restore the dentine and treat the infected pulp but our esthetic work is most of the time limited to 2-2,5 mm depth of the tooth which is so called enamel.

Enamel is the hardest tissue in body, Enamel thickness is between 2 mm (incisal edge) to 2,5mm (molar cusps) and thinner close to neck of tooth. Enamel color is grayish yellow to yellowish white, Grayish -> thick opaque, Blueish -> incisal, Yellowish -> thin underlined by dentin, dissolves in acidic media.

Light microscopy:-

Rods appear hexagonal.
In cross section : Fish scale appearance.
Recently – Arcade outline near DEJ and keyhole outline at enamel surface.

SIGNIFICANCE

Because of inter-woven network of rods, teeth can resist masticatory forces up to 20-30 pounds per tooth.

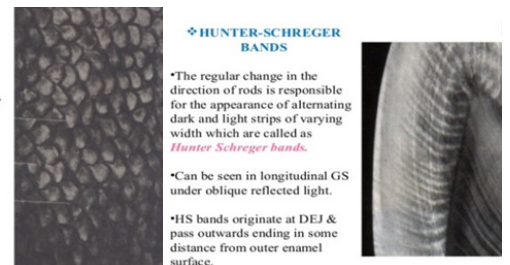


Fig 1: Light Microscopy

So far so good now before establishing our design we have to keep in mind few simple rules that helps a lot during our process .

Rule of 42.2 :

- Maximum of 4mm incisal display at rest and minimum of 2mm
- Maximum of 2mm gingival display at normal smile
- 2mm or less from lower lip during smile

Golden proportions:

The golden proportion is a mathematically constant ratio between the larger and smaller length. The ratio is approximately 1.618:1 • In terms of proportion, the smaller tooth is about 62% the size of the larger one Also transitional Line angles that Might show the tooth Wider or longer.

Now its time to talk about the most prominent aspect which is shade!

It is true that patients judge their dentist by the color of their restoration.

Shorter wave length or blue range are contributed by enamel while long wave length or red colors is reflected from dentine .

Human teeth is polychromatic with color transitions from gingival to incisal and mesial to distal and also labial to lingual/palatal. It's the responsibility of clinician to match three sections of the tooth ; the gingival , the body & the incisal.

Vita shade guide is the most commonly used in dentistry & it was first introduced in 1956.

And in vita shade guide we all know that A -> Orange, B -> Yellow, C -> Yellow, Gray, D -> Orange , Gray or Brown , 1 has least Chroma & highest value and finally 4 has highest Chroma & lowest value.

Its almost impossible to talk about vita shade guide and we don't think about bleaching! Bleaching is by application of Oxidants carbamide peroxide that the oxygen radicals penetrate the enamel and oxidase the dark colorants of dentinal layer which may be intrinsic or extrinsic . As all of us know there is no structural changes in this process thus Value of teeth increases .

Now coming to one of the most important part which is challenges of esthetic dentistry ! we have to look at our work from 4 aspects ; those include : esthetics , biology , function and economics!

Esthetics is about our knowledge and art of smile designs and make overs but it should be in a great biological environment to function well against various types of stresses and pressures . all of the mentioned above is widely effected by economics which includes the patients expectations and budget , your costs and chair time and also the time that your patient spends in your clinic and they mostly have work and the have to go back to their work right after leaving your office and of course reparability and durability as they are investing in their appearance and oral health. Also the other Dental service organizations and colleagues and the market situation and everything should be on mind!

Conclusion

Never the less always we have to try to be a great team member not only work wise but also vision wise by having a wide vision of seeing everything and ability to decide for the best possible treatment