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Disorders of enamel

In this lecture I will be discussing various defects/disorders affecting the enamel structure, factors contributing to such defects and management of such cases. Enamel is the hardest tissue in the human body, and it is formed from ectoderm, composed of mineralised tissue. Over 95% of its volume occupied by hydroxyapatite crystals.

Formation is highly organized and controlled by ameloblasts through the interaction of a number of organic matrix molecules and it goes through 3 stages of development. Firstly; the formation stage in which the organic matrix is deposited. Secondly; the calcification stage in which the organic matrix is calcified and mineralised, and lastly; the maturation stage in which the newly formed crystals are enlarged and matured.

Disturbance in any of these stages could result in defects in the enamel, which generally can be classified into hypoplasia, in with the organic matrix is not laid down sufficiently, resulting in enamel not fully formed to normal thickness, making the teeth shape abnormal, small or has a rough pitted surface. Or hypomineralisation, in which the matrix is fully formed, but not fully mineralised. Making the teeth normal in size and shape, but its enamel soft and brittle. And once it erupts, could bear discolored spots ranging from white to yellow or brown. Such teeth are more susceptible to carious lesions, and if enamel is easily chipped, it could expose the underlying dentine, which makes it sensitive and painful.

Factors leading to these defects can be genetic, environmental, systemic, medications or local factors such as trauma or infection, or could be entirely idiopathic.

The clinical appearance of those defects can vary, and it can affect all teeth, or few teeth in the dentition. Clinical management depends on the presentation and the signs and/or symptoms these defects manifest. One aspect that cannot be overlooked is the psychological effect of these defects on the patients affected by it.

Biography

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