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Perspective

Role of Cervical Enamel Extension in Teeth

Marta Gim*

Forensic Odontology Unit/Alberta Dental School, University of Alberta, Alberta, Canada

DESCRIPTION

The health of a person's teeth is crucial for both physical and mental wellbeing. They play a crucial role in the physical process of chewing food, and the physical differences between the teeth's architecture reflect their unique roles in the process. The way people view themselves psychologically is influenced by how their teeth look. People who have missing or broken teeth frequently feel self conscious about their appearance and may exhibit lack of confidence or other distressing behaviours related to it. Human teeth are tiny, calcified structures that are arranged in specific relation to one another in the mouth. Incisors are found near the front of the mouth and have sharp edges that make them suitable for the role of cutting food when it is taken into the mouth since their position mirrors their function. Molars are located at the roof of the mouth and because of their flattened morphology, they are ideal for breaking food just before swallowing and for use in subsequent digestion. Along with the incisors, there are also canine teeth, which perform some of the same tasks for tearing and cutting food. The premolars, which perform some of the molars crushing duties, are placed next to them. Teeth normally have a long lifespan and can continue to function in a working state for many years. In adults, there are 32 teeth and in children 20 teeth. These children lose their deciduous or developing teeth starting around the age of seven. In contrast, adult teeth are referred to as "permanent."

The toughest material in the human body, enamel, covers the healthy tooth in a thin coating. The calcium phosphate mineral hydroxyapatite is present in separate crystalline phases, and it is highly mineralized. Collagen, a protein with significant impact on the mechanical qualities of enamel, is also present in trace amounts. The protein specifically makes the enamel stronger than it normally would be, making it more resistant to fracture propagation through it. Additionally, it lessens the enamel's permeability, boosting its resistance to acid attack. A structure known as dentine lies beneath the coating of enamel. It is a porous, pale yellow substance that by mass is roughly 70% hydroxyapatite, 20% organic material and 10% water. Anatomically, the dentine is shaped like a tube, with tiny tubules extending from the pulp cavity in the middle. The diameter of these tubules ranges from 0.9 to 2.5 pm, with the diameter being greatest close to the pulp and decreasing as the tubule moves toward the dentino enamel junction.

Odontoblast processes are present within these tubules. The cavity that makes up the inner portion of the tooth is filled with the soft connective tissue known as the dental pulp. It is made up of blood vessels and nerve fibres, which enter the tooth through a tiny aperture at the apex of the tooth root. Odontoblasts, which are cells that produce dentine, are found in the pulp's outer layer, just next to the dentine. These cells create dentine throughout the course of a person's life and are able to partially repair dentine that has been damaged by either bacterial activity or trauma. Additionally, in young patients with odontoblast injury, connective tissue cells from the pulp called fibroblasts can change into odontoblasts and begin the process of healing the dentine. The pulpodentinal complex can be thought of as a single organism because of these morphological and physiological links between the dentine and the pulp. Sensitive cells in the pulp can be harmed by severe mechanical trauma to the tooth or by chemical attacks from chemicals produced from dental restoration materials. Additionally, an infection in the pulp may spread to the rest of the body *via* the circulatory system. This makes dental caries, a bacterially caused illness, potentially dangerous and warranting treatment.

Dental caries, or tooth decay, is one of the most prevalent disorders in people. According to its official definition, it is "a chronic, dietomicrobial, site specific disease produced by a shift from protective factors promoting tooth remineralization to destructive factors resulting to demineralization." The presence of oral bacteria, particularly *Streptococcus mutans*, and the availability of fermentable carbohydrates from the diet are the specific elements that cause the deterioration of the mineral phase of the tooth. As a result of this combination, the bacteria's metabolic activity produces organic acids, the main one of which being lactic acid, while other weak acids like ethanoic and propanoic can also exist. These acids cause the mineral portion of the tooth to disintegrate, which results in structural loss.

Correspondence to: Marta Gim, Forensic Odontology Unit/Alberta Dental School, University of Alberta, Alberta, Canada, E-mail: Martagim@alberta.ca

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