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| **Name:** |
| Aliyah Wilson  |
| **Group:** |
| 10B-5 |
| **Pathology Question:** |
| Describe the relation betweenridge resorption and diabetes.  |
| **Report:** |
| Periodontal disease is one of the most widespread oral diseases characterized by an infection of the supporting tissues of the teeth which may include, gingival tissue, periodontal ligaments, and alveolar bone. A primary risk factor of periodontal disease is diabetes mellitus. Diabetes mellitus is considered a group of disorders that are characterized by high blood glucose levels. Type 1 diabetes mellitus is a polygenic autoimmune disease that results from an insulin deficiency due to the destruction of insulin secreting pancreatic beta cells. Type 2 diabetes mellitus is metabolic disease that results in many of the tissues within the body to becoming resistance to insulin and ultimately resulting in hyperglycemia and altered lipolysis (Wu et al. 64). One of the long-term complications of diabetes mellitus is altered bone metabolism which may affect bone quality and quantity. Progressed diabetes increases the likelihood of severe periodontitis and accelerates bone loss due to lack of metabolic control. Bone remodeling is a coupled process of old bone being broken down by osteoclast and new bone being made by osteoblast. Under pathological conditions, particularly diabetes, these processes are uncoupled and have unique effects on both the osteoclasts and osteoblasts in the periodontium. The affects include increasing the expression of inflammatory mediators, ROS (reactive oxygen species), AGE (advanced glycation end products), and osteoprotegerin (Wu et al. 68). These factors promote reduction of bone formation, enhanced osteoclastogenesis in inflamed areas, and enhanced PDL and osteoblast apoptosis, and prolong inflammation, ultimately resulting in alveolar bone loss.  |
| **References:** |
| Wu, Ying-Ying et al. “Diabetes mellitus related bone metabolism and periodontal disease.” *International journal of oral science* vol. 7,2 63-72. 26 Jun. 2015, doi:10.1038/ijos.2015.2 |