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| <b>Group:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
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| <b>Pathology Question:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| How does smoking affect the periodontium?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Report:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <p>We have chosen this topic, because our patient smokes 2-3 cigarettes a day. This has caused some staining on her teeth. Further, she also had a tongue ring which caused gingival recession and a vertical bone defect on the lingual surface of tooth 25. Smoking is our main pathology concern for this patient, because it has both systemic effects and oral effects. Some systemic effects include a variety of cancers, such as lung cancer. It also has major effects on the cardiovascular system. Oral effects include discoloration of oral structures, heat injury, melanosis, stomatitis, keratosis, hairy tongue, oral cancer, halitosis, increased salivation, altered host response and periodontitis. The altered host response contributes to periodontitis which leads to more downstream effects that are detrimental to the health of the oral cavity.</p> <p>Smoking is a very strong predictor of future periodontitis. Periodontitis and bone loss prevalence is much higher in smokers compared to non-smokers or former smokers. The risk of periodontitis increases with the duration of smoking. However, if smoking is discontinued the risk of periodontitis can decrease to that of a non-smoker. This was concluded by a systematic review and meta-analysis done in 2019. This gives hope for this patient. However, it also illustrates the importance and responsibility of the doctor to try to get the patient to discontinue smoking.</p> <p>The gingival inflammation associated with periodontitis in smokers is different. There are less clinical signs of inflammation, like bleeding with more fibrotic tissue. This is due to lower blood flow and an altered inflammatory response. The lower blood flow is due to vasoconstriction and smaller blood vessels, which cause slower wound healing. The altered inflammatory response is due to a decrease in protective factors, such as immunoglobulins, PMNs and lymphocytes, altered function of neutrophils, and upregulation of interleukins. This leads to more dangerous plaque on the teeth, because the lack of inflammatory function favors virulent bacteria, such as <i>P. gingivalis</i> and <i>T. forsythia</i>. The presence of these virulent bacteria also make it more difficult to clean periodontal pockets. The decrease in PMN function, causes a decrease in phagocytosis capacity leaving the oral cavity vulnerable. There is an upregulation of interleukins, which causes increase in bone resorption. There is also extra oxidative stress caused by the smoking, which the body cannot handle leading to more damage. The gingival inflammation and periodontal disease related to smoking is caused by an altered inflammatory response, decreased blood flow and increased oxidative stress.</p> <p>The results of periodontal therapy can be greatly affected by smoking. The improvements in probing depth reduction and clinical attachment levels are much lower in smokers vs non-smokers. Soft and hard tissue grafting is also more difficult and has more complications. Peri-implantitis risk is also higher. These are reasons why it is important to urge our patients to quit smoking as we are beginning our treatment. In summary, smoking a risk factor that leads to increased risk and faster progression of periodontitis.</p> |
| <b>References:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

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