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| **Name:** |
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| 5A-1 |
| **Pathology Question:** |
| What is periimplantitis? |
| **Report:** |
| Peri-implantitis is an inflammatory process following the insertion of a dental implant. This complication affects the soft and hard tissues which surround the dental implant, thus leading to failure/loss of the implant (Smeets, Henningsen, Jung). “Peri-implantitis is a progressive and irreversible disease [..] and is accompanied with bone resorption, decreased osseointegration, increased pocket formation and purulence” (Smeets, Henningsen, Jung). There are certain factors which may predispose an individual to developing peri-implantitis such as; smoking habits, history of periodontitis, oral hygiene, systemic diseases, and loss of surrounding bone. Other factors such as implant position and implant materials also potentially play a role in peri-implantitis (Monje et al.). According to the article *Morphology and severity of peri-implantitis bone defects,* the diagnosis of peri-implantitis requires: “the presence of bleeding and/or suppuration upon gentle probing, probing depths greater than or equal to 6mm, and a bone level greater than or equal to 3mm apical to the most coronal portion of the implant or at the rough-smooth interface in tissue-level implants” (Monje et al.).  On a molecular level, “peri-implant tissues are more susceptible for inflammatory disease than periodontal tissues, [which is due to the] reduced vascularization and parallel orientation of collagen fibers” (Persson, Renvert 2014). “The presence of periodontitis or cigarette smoking [also] increased the risk for peri-implantitis up to 4.7-fold as reported by *Wallowy et al”* (Smeets, Henningsen, Jung). Additionally, peri-implantitis may also have an infectious etiology. This complication is a polymicrobial anaerobic infection, and it is found that certain bacteria are present at higher levels in peri-implantitis than within a healthy periodontium (Smeets, Henningsen, Jung). Bacteria such as *Treponema forsythia, Campylobacter rectus, Treponema denticola, Staphylococcus aureus,* and *Porphyromonas gingivalis* are detected at much higher levels in patients with peri-implantitis than in patients who possess a healthy periodontium (Persson, Renvert 2014). It has also been found that *Staphylococcus aureus* and *T. forsythia* play a predominant role in the development of peri-implantitis, as it shows a high affinity for titanium, a common material from which implants are made (Smeets, Henningsen, Jung). Patients with a history of periodontitis and those who are smokers also exhibit higher bacterial counts independent of implant status.  While peri-implantitis is considered irreversible, if caught early the implant may be restored enough to bring the patient back to a state of health and function. “It may or may not be possible […] to re-establish osseointegration[67](https://0-www-sciencedirect-com.libus.csd.mu.edu/science/article/pii/S0011853214001335?via%3Dihub" \l "bib67); it may only be possible to fill the osseous defect or to simply arrest the disease” (Robertson, Shahbazian, MacLeod). Treatment of peri-implantitis should be tailored to the severity of the lesion, as there is no one treatment which is considered standard. Treatment options include mechanical debridement, regenerative surgical therapy, lasers, or removal of the implant (Robertson, Shahbazian, MacLeod). |
| **References:** |
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