**osteointegration:**

**clinical term with a histological definition, connection between the implant and the bone "implant inside the bone".**

Histologically around implants ,we have **junctional epithelium and connective tissue but no PDL or cementum.**

**1)implants have a long junctional epithelium "longer than what we have in natural dentition". With the fibers running parallel to the long axis of the implant "fibers don't insert inside the implants" which means that there is no attachment just a seal with much less vascularity.**

**2)biological width in implants : reach up to 4 mm " 2mm Junctional epithelium, 1-2mm CT ".**

**3)probing depth : more in implants because we have no resistance. If you get a probing depth of 4-5mm,don't mind, as in some cases it starts from 5 mm ,so you have to know your base line**

**implants are more prone to infections due to :**

**1- No PDL**

**2- Less vascularity "elimination of gingival vessels, periodontal vessels, bone ..... losing the vascular network"**

**3- Less cellularity 4- Less resistance to irritations**

**complications :**

**1- Peri - implant mucositis = gingivitis 2- Peri-implantitis = periodontitis**

**Their etiological factor is bacteria (poor oral hygiene, calculus) with some extra other factors :**

**1)Cement 2)the rough surface made for better integration 3)screw-retained abutments(Any junction between two metallic components will have micro-gaps, then it will become loose, then it will move over the tissues causing irritation.)**

**\* Signs of peri-implant mucositis "as in gingivitis" :**

**1)redness 2)swelling 3)bleeding on probing.**

 **But those signs may be exaggerated "pus, more bleeding”**

**\*probing depth only, is not an essential criteria for confirming mucositis,you have to see other signs.PD must be taken after one year of inserting the prosthesis & bone remodeling happen down to the first thread.**

**-Implant with inflammation without bone loss : (peri-implant mucositis)**

**-peri-implantitis has features similar to gingivitis but big lesion with more inflammatory infiltrate.**

**- Peri-implantitis there is crestal bone loss with puss sometimes**

**-since there is no PDL ,any mobility indicates failure.**

**-we have symmetrical bone loss around implants :a theory claiming that bacteria moves along the threads of an implants.**

**-MARGINAL bleeding is the patients problem while POCKET bleeding is yours.**

**- the first thing you may see in peri-implantitis is bone loss**

**- peri-implantitis MICROBIOLOGY :**

**1)gram +ve & -ve bacteria like what we have in periodontitis. 2)staphylococcus aureus .**

**3) escherichia coli 4)candida**

**- the one with more bone loss is the impant with the roughest surface ,so we need moderately –rough implant.**

**-prevalence of mucositis 50% -prevalence of peri-implantitis 10%**

**Monitoring Implants :**

**-examination and radiographs should be taken at baseline(the date you insert the prosthesis).**

**- you take a radiograph every year**

**- you assess the risk every 2 years, then every 5 years, then every 10 years and so on.**

**-if a patient attended your clinic with an implant done by someone else you estimate bone level at baseline either :**

**1)to the first thread 2)at least 2mm where you expect the implant to be**

**the probe that we use to measure around implant is flexible and brittle not to scratch the implant.**

**TREATMENT OF MUCOSITITS :**

**1)Mechanical debridement USING :**

**- Manual plastic/titanium scalers. - Ultrasonic scalers with carbon fiber tip/gold tip.**

**2) Antiseptics, mouthwashes, water jets.**

**3) Air abrasive polishing device**

**4)laser(not proven & has no effect on peri-implantitis**

**TREATMENT OF PERI-IMPALNTITIS**

**1)stoping the inflammation by Antibiotics with non-surgical Tx,which it usually does not respond to non-surgical treatment .**

**\*surgical therapy objectives:**

**1- To gain access. 2- To decontaminate the threads by : saline, chlorhexidine, laser, thread removal with bur, studies showed that there is no difference between them.**

**\*\*When we do implantoplasty and suturing, part of the implant will appear, this is fine for posterior teeth, but for anterior teeth this will compromise esthetics because surgery will cause recession. So usually if the damage in the anterior implants is severe we remove the implant.**

**In GTR membrane I'd more important then bone, bone is just a filler to hold the membrane.**

**Perfectly designed prosthesis:**

**1- Cleanable. 2- Not bulbous.**

**3- You can probe around it. 4- You can clean around it.**

**Surgical Debriment :1)open a flap 2)bone resection 3)debridement of the surface**

**Maintaining implants:**

**- Similar as teeth: floss, brush, interproximal brush, and titanium brush.**