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| **Name:** |
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| **Pathology Question:** |
| What are the clinical indications for grafting with a membrane? |
| **Report:** |
| An important procedure for alveolar ridge augmentation is called guided bone regeneration (GBR). In this procedure, a membrane can be used to create and maintain a space between the bony defect and under the area of the periosteum (Wessing et al. 1). Within the space osteoprogenitor cells should colonize and grow. However, this process is slow. The membranes should help prevent the ingrowth of epithelial and connective tissue cells into the defect.  There are different membranes that can be used to maintain the space and prevent the ingrowth of epithelial and connective tissue cells. Such membranes include resorbable and non resorbable types. Non-resorbable membranes must eventually be removed, thus, requiring surgically reopening the soft tissue. To avoid such a thing, resorbable membranes were developed. One such membrane is a collagen membrane. Unfortunately, the research on limitations or indications for using collagen membranes are not clear (Wessing et al. 93)  Some findings on a systematic review titled ‘Guided Bone Regeneration with Collagen Membranes and Particulate Graft Materials: A Systematic Review and Meta-Analysis’ determined that there was a 99.1% implant survival rate on implants that used any type of membrane. Furthermore, when comparing cross-linked and non-cross linked collagen membranes, there was a slightly better exposure rate for the non-cross linked membrane. Also, it was determined that a fixed membrane provides better results in regenerating vertical bone because it immobilizes the particulate bone graft at the desired position and prevents migration of the graft into surrounding tissues during suturing and volume loss (Wessing et al. 98). Overall, it was determined that a GBR with resorbable collagen membrane is an effective technique for lateral alveolar ridge augmentation. It is recommended that the membrane and dental implant are placed simultaneously to prevent more surgeries and thus decreasing morbidity, treatment time and increasing patient comfort. |
| **References:** |
| Wessing, Bastian et. Al. “Guided Bone Regeneration with Collagen Membranes and Particulate Graft Materials: A Systematic Review and Meta-Analysis” *Official Journal Of The Academy Of Osseointegration*. Vol 33, Issue 1, 87-100 (2018). http://quintpub.com/journals/omi/fulltext.php?article\_id=17762 |