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- [4] Nyman S, Lindhe J, Karring T, et al. New attachment following surgical treatment of human periodontal disease. *J Clin Periodontol.* 1982;9(4):290–296.
- [5] Bioteck.com (internet). Arcugnano: Bioteck S.p.A.; 2013. (actualizado 06.11.2013, citado.20/032015). Available from: http://www.bioteck.com/images/PDF/:Datasheets/Inglese/BG_Datasheet_EN.Pdf.

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Vascular risks in external sinus lifts: an anatomical approach

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ABSTRACT

Introduction: In the anterolateral wall of the maxillary sinus, an osseous canal can be observed, corresponding to the anastomosis between arterial branches of the posterior superior alveolar artery and the infraorbital artery [1]. From this anastomosis, mostly known as Antral artery, its several branches allow for the vascularisation of the sinus mucous membrane, periosteum and the anterolateral bone wall of the sinus [2].

Surgical approach of this region, including antrostomy for external sinus lift of the maxillary sinus, can result in intraoperative bleeding due to vascular lesion during the osteotomy [3]. Current radiological 3D modelling of the sinus anatomy, as well as solid knowledge of sinus anatomy are of the utmost importance to prevent vascular complications during these surgical procedures in this area.

The objective of this presentation is to graphically review and demonstrate anatomical concepts on sinus anatomy, through live and interactive *a viva voce* anatomical black board and chalk schematic drawings, based on the general narrative description of sinus anatomy, as well as anatomical findings regarding antral artery position in cadaveric studies [4–7].

Materials and Methods: Medline (Pubmed) search using the following: “vascularization maxillary sinus cadavers”, completed with the revision of the bibliographical references of the selected articles in order to identify further relevant studies. Inclusion criteria: (1) Published between 2008 and 2015. (2) Cadaver Studies. (3) Studies that evaluate the position of the anatomical position of the anastomosis between arterial branches of the posterior superior alveolar artery and the infraorbital artery. Exclusion Criteria: (1) Non cadaveric studies. (2) Foetal and paediatric studies.

Results: Eight articles were selected.

Discussion and conclusions: The vascular anastomosis is frequently found in the lateral wall of the maxillary sinus. Its position and depth are variable, as well as its trajectory and morphology. Pre-surgical determination of its precise anatomical variations is of the utmost importance to avoid vascular damage and complications during external sinus lifts osteotomies.

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References

- [1] Taschieri S, Rosano G. Management of the alveolar antral artery during sinus floor augmentation procedures. *J Oral Maxillofac Surg.* 2010;68(1):230.
- [2] Rosano G, Taschieri S, Gaudy JF, et al. Maxillary sinus vascular anatomy and its relation to sinus lift surgery. *Clin Oral Implants Res.* 2011;22(7):711–715.
- [3] Jung J, Yim JH, Kwon YD, et al. A radiographic study of the position and prevalence of the maxillary arterial endosseous anastomosis using cone beam computed tomography. *Int J Oral Maxillofac Implants.* 2011;26(6):1273–1278.
- [4] Ella B, Sédarat C, Noble Rda C, et al. Vascular connections of the lateral wall of the sinus: surgical effect in sinus augmentation. *Int J Oral Maxillofac Implants.* 2008;23(6):1047–1052.
- [5] Hur MS, Kim JK, Hu KS, et al. Clinical implications of the topography and distribution of the posterior superior alveolar artery. *J Craniofac Surg.* 2009;20(2):551–554.
- [6] Rosano G, Taschieri S, Gaudy JF, Del Fabbro M. Maxillary sinus vascularization: a cadaveric study. *J Craniofac Surg.* 2009; 20(3):940–943.
- [7] Yoshida S, Kawai T, Asaumi R, et al. Evaluation of the blood and nerve supply patterns in the molar region of the maxillary sinus in Japanese cadavers. *Okajimas Folia Anat Jpn.* 2010;87(3):129–133.

DOI: 10.1080/07853890.2021.1897405