

VDOS Clinical Rounds/Journal Clubs (Mandibular Reconstruction)

Publications discussed on April 9, 2021 and April 10, 2021

Miscellaneous

- Kinoshita Y, Kobayashi M, Hidaka T, Ikada Y. Reconstruction of mandibular continuity defects in dogs using poly (L-lactide) mesh and autogenic particulate cancellous bone and marrow: preliminary report. *Journal of Oral and Maxillofacial Surgery* 1997; 55: 718-723; discussion 723-724.
- Bracker KE, Trout NJ. Use of a free cortical ulnar autograft following en bloc resection of a mandibular tumor. *Journal of the American Animal Hospital Association* 2000; 36: 76-79.
- Huh JY, Choi BH, Kim BY, Lee SH, Zhu SJ, Jung JH. Critical size defect in the canine mandible. *Oral Surgery Oral Medicine Oral Pathology Oral Radiology and Endodontics* 2005; 100: 296-301.
- Huh JY, Choi BH, Zhu SJ, et al. Bridging mandibular continuity defects with miniplates: an experimental study. *Oral Surgery Oral Medicine Oral Pathology Oral Radiology and Endodontics* 2006; 102: 307-311.
- Huh JY, Choi BH, Zhu SJ, Jung JH, Kim BY, Lee SH. The effect of platelet-enriched fibrin glue on bone regeneration in autogenous bone grafts. *Oral Surgery Oral Medicine Oral Pathology Oral Radiology and Endodontics* 2006; 101: 426-431.
- Yuan J, Cui L, Zhang WJ, Liu W, Cao Y. Repair of canine mandibular bone defects with bone marrow stromal cells and porous beta-tricalcium phosphate. *Biomaterials* 2007; 28: 1005-1013.
- Sverzut CE, Faria PE, Magdalena CM, et al. Reconstruction of mandibular segmental defects using the guided-bone regeneration technique with polylactide membranes and/or autogenous bone graft: a preliminary study on the influence of membrane permeability. *Journal of Oral and Maxillofacial Surgery* 2008; 66: 647-656.
- Yuan J, Zhang WJ, Liu G, Wei M, Qi ZL, Liu W, Cui L, Cao YL. Repair of canine mandibular bone defects with bone marrow stromal cells and coral. *Tissue Engineering Part A* 2010; 16: 1385-1394.
- Silva AM, Souza WM, Koivisto MB, Barnabé Pde A, Souza NT. Miniplate fixation for the repair of segmental mandibular defects filled with autogenous bone in cats. *Acta Cirurgica Brasileira* 2011; 26: 174-180.
- Zhou L, Wang P, Han H, Li B, Wang H, Wang G, Zhao J, Liu Y, Wu W. Prototyped grafting plate for reconstruction of mandibular defects. *Journal of Craniomaxillofacial Surgery* 2014; 42: 1723-1729.
- Liu C, Tan X, Luo J, Liu H, Hu M, Yue W. Reconstruction of beagle hemi-mandibular defects with allogenic mandibular scaffolds and autologous mesenchymal stem cells. *PLoS One* 2014; 9(8):e105733. doi: 10.1371/journal.pone.0105733.
- Wang S, Zhao J, Zhang W, et al. Comprehensive evaluation of cryopreserved bone-derived osteoblasts for the repair of segmental mandibular defects in canines. *Clinical Implant Dentistry and Related Research* 2015; 17: 798-810.
- Snyder CJ, Bleedorn JA, Soukup JW. Successful treatment of mandibular nonunion with cortical allograft, cancellous autograft, and locking titanium miniplates in a dog. *Journal of Veterinary Dentistry* 2016; 33: 160-169.

- Bray JP, Kersley A, Downing W, et al. Clinical outcomes of patient-specific porous titanium endoprostheses in dogs with tumors of the mandible, radius, or tibia: 12 cases (2013-2016). *Journal of the American Veterinary Medical Association* 2017; 251: 566-579.
- Liptak JM, Thatcher GP, Bray JP. Reconstruction of a mandibular segmental defect with a customized 3-dimensional-printed titanium prosthesis in a cat with a mandibular osteosarcoma. *Journal of the American Veterinary Medical Association* 2017; 250: 900-908.
- Arzi B, Verstraete FJM, Garcia TC, Lee M, Kim SE, Stover SM. Kinematic analysis of mandibular motion before and after mandibulectomy and mandibular reconstruction in dogs. *American Journal of Veterinary Research* 2019; 80: 637-645.
- Girard N, Cauvin ERJ, Gauthier O, et al. Biphasic calcium phosphate microparticles mixed with autologous blood: Application for the reconstruction of a large mandibular bone defect in a dog. *Journal of Veterinary Dentistry* 2020; 37: 201-209.
- Matsui K, Kawai T, Ezoe Y, et al. Segmental bone reconstruction by octacalcium phosphate collagen composites with teriparatide. *Tissue Engineering Part A* 2020; Sep 15. doi: 10.1089/ten.TEA.2020.0150.

rhBMP-2 and CRM

- Toriumi DM, Kotler HS, Luxenberg DP, Holtrop ME, Wang EA. Mandibular reconstruction with a recombinant bone-inducing factor. Functional, histologic, and biomechanical evaluation. *Archives of Otolaryngology and Head and Neck Surgery* 1991; 117: 1101-1112.
- Toriumi DM, O'Grady K, Horlbeck DM, Desai D, Turek TJ, Wozney J. Mandibular reconstruction using bone morphogenetic protein 2: long-term follow-up in a canine model. *Laryngoscope* 1999; 109: 1481-1489.
- Seto I, Tachikawa N, Mori M, et al. Restoration of occlusal function using osseointegrated implants in the canine mandible reconstructed by rhBMP-2. *Clinical Oral Implants Research* 2002; 13: 536-541.
- Boudrieau RJ, Mitchell SL, Seeherman H. Mandibular reconstruction of a partial hemimandibulectomy in a dog with severe malocclusion. *Veterinary Surgery* 2004; 33: 119-130.
- Spector DI, Keating JH, Boudrieau RJ. Immediate mandibular reconstruction of a 5 cm defect using rhBMP-2 after partial mandibulectomy in a dog. *Veterinary Surgery* 2007; 36: 752-759.
- Lewis JR, Boudrieau RJ, Reiter AM, et al. Mandibular reconstruction after gunshot trauma in a dog by use of recombinant human bone morphogenetic protein-2. *Journal of the American Veterinary Medical Association* 2008; 233: 1598-1604.
- Hussein KA, Zakhary IE, Elawady AR, et al. Difference in soft tissue response between immediate and delayed delivery suggests a new mechanism for recombinant human bone morphogenetic protein 2 action in large segmental bone defects. *Tissue Engineering Part A* 2012; 18: 665-675.
- Hussein KA, Zakhary IE, Hailat D, Elrefai R, Sharawy M, Elsalanty ME. Delayed versus immediate reconstruction of mandibular segmental defects using recombinant human bone morphogenetic protein 2/absorbable collagen sponge. *Journal of Oral and Maxillofacial Surgery* 2013; 71: 1107-1118.
- Boudrieau RJ. Initial experience with rhBMP-2 delivered in a compressive resistant matrix for mandibular reconstruction in 5 dogs. *Veterinary Surgery* 2015; 44: 443-458.

- Arzi B, Verstraete FJ, Huey DJ, Cissell DD, Athanasiou KA. Regenerating mandibular bone using rhBMP-2: Part 1 - Immediate reconstruction of segmental mandibulectomies. *Veterinary Surgery* 2015; 44: 403-409.
- Verstraete FJ, Arzi B, Huey DJ, Cissell DD, Athanasiou KA. Regenerating mandibular bone using rhBMP-2: Part 2 - Treatment of chronic, defect non-union fractures. *Veterinary Surgery* 2015; 44: 410-416.
- Arzi B, Cissell DD, Pollard RE, Verstraete FJ. Regenerative approach to bilateral rostral mandibular reconstruction in a case series of dogs. *Frontiers in Veterinary Science* 2015; 2:4. doi: 10.3389/fvets.2015.00004.

Microvascular tissue transfer

- Altobelli DE, Lorente CA, Handren JH Jr, Young J, Donoff RB, May JW Jr. Free and microvascular bone grafting in the irradiated dog mandible. *Journal of Oral and Maxillofacial Surgery* 1987; 45: 27-33.
- Yeh LS, Hou SM. Repair of a mandibular defect with a free vascularized coccygeal vertebra transfer in a dog. *Veterinary Surgery* 1994; 23: 281-285.
- Bebachuk TN, Degner DA, Walshaw R, Brouman JD, Arnoczky SP, Stickle RL, Probst CW. Evaluation of a free vascularized medial tibial bone graft in dogs. *Veterinary Surgery* 2000; 29: 128-144.

Transport distraction osteogenesis

- Costantino PD, Shybut G, Friedman CD, et al. Segmental mandibular regeneration by distraction osteogenesis. An experimental study. *Archives of Otolaryngology and Head and Neck Surgery* 1990; 116: 535-545.
- Costantino PD, Friedman CD, Shindo ML, et al. Experimental mandibular regrowth by distraction osteogenesis. Long-term results. *Archives of Otolaryngology and Head and Neck Surgery* 1993; 119: 511-516.
- Annino DJ Jr, Goguen LA, Karmody CS. Distraction osteogenesis for reconstruction of mandibular symphyseal defects. *Archives of Otolaryngology and Head and Neck Surgery* 1994; 120: 911-916.
- Rubio-Bueno P, Sanromán F, García P, et al. Experimental mandibular regeneration by distraction osteogenesis with submerged devices: preliminary results of a canine model. *Journal of Craniofacial Surgery* 2002; 13: 224-230.
- Zhang RZ, Zhang L, Deng Y, Zhang QL, Zhen EM, Yu B. Reconstruction of mandibular symphyseal defects by an internal trifocal distractor: an experiment in dogs. *British Journal of Oral and Maxillofacial Surgery* 2009; 47: 205-209.
- Zapata U, Halvachs EK, Dechow PC, et al. Architecture and microstructure of cortical bone in reconstructed canine mandibles after bone transport distraction osteogenesis. *Calcified Tissue International* 2011; 89: 379-388.
- Kontogiorgos E, Elsalanty ME, Zapata U, et al. Three-dimensional evaluation of mandibular bone regenerated by bone transport distraction osteogenesis. *Calcified Tissue International* 2011; 89: 43-52.
- Kontogiorgos E, Elsalanty ME, Zakhary I, et al. Osseointegration of dental implants placed into canine mandibular bone regenerated by bone transport distraction osteogenesis. *International Journal of Oral and Maxillofacial Implants* 2013; 28: 677-686.

- Isomura ET, Shogen Y, Hamaguchi M, et al. Inferior alveolar nerve regeneration after bifocal distraction osteogenesis in dogs. *Journal of Oral and Maxillofacial Surgery* 2013; 71: 1810.e1-11. doi: 10.1016/j.joms.2013.04.037.
- Elsalanty ME, Malavia V, Zakhary I, et al. Dentate transport discs can be used to reconstruct large segmental mandibular defects. *Journal of Oral and Maxillofacial Surgery* 2015; 73: 745-758.