RESUMEN COMUNICACIONES / POSTERS

Título

Alteraciones Neurologicas en implantología oral

Autores

Bernardo Garcia Garcia, Jose Luis de la Hoz Arizpua, Juan Mesa Jimenez, Diana Elisa Gomes Correia

Palabras Claves

Alteraciones neurológicas, dolor, implantes dentales

Introducción

La implantología es un campo de la odontología que cada vez se desarrolla más habitualmente, debido a su implicación cerca de estructuras nerviosas, hemos realizado un trabajo donde se puede ver dicha relación y las posibles implicaciones que estas puedan tener.

Objetivos

Una revisión biblografica de las alteraciones neuroógicas producidas como consecuencia de los implantes dentales. El diagnóstico de las principales patologías, sus factores de riesgo, su prevención y tratamiento.

Material y Método

Revision Biblografica basada en las principales bases de datos científicas.

Resultados

Se valoran los diferentes mecnismos que producen las alteraciones neurosensoriales en la zona del trigémino afectadas por los actos implantologicos, se busca la relación de un posible perfil de riesgo de padecer mayor probabilidad de dolor crónico. Tambien se da la versión de los diferentes autores sobre los diferentes diagnsticos asi como las multiples formas de tratamiento, tanto quirúrgico como farmacológico.

Conclusiones

1.Apesar de que el tratamiento implantológico es muy predecible no está exento de riesgos y las alteraciones neurosensoriales pueden ocurrir.

2. Es muy importante el conocimiento de la anatomía propia de cada paciente, hoy en día disponemos medios para realizar una buena exploración y planificar bien cada caso.

3. Se hace imprescindible un correcto diagnóstico y tratamiento del dolor, a fin de evitar mayores complicaciones.

4. El tratamiento temprano (menos de 24 horas) ha demostrado ser el más eficaz.

Bibliografía

[1] Santos-Franco Jorge, Santos-Ditto Roberto, Revuelta-Gutiérrez Rogelio. Neuralgia del trigémino. Arch. Neurocien. 2005; 10(2): 95-104. [2] Pogrel MA, Thamby S. Permanent nerve involvement resulting from inferior alveolar nerve blocks. J Am Dent Assoc 2000;131(7):901–7. [3] Ziccardi VB, Assael LA. Mechanisms of trigeminal nerve injuries. *Oral Maxillofac Surg Clin North Am* 2001; 9(2): 1–11. [4] Grotz KA, Al-Nawas B, de Aguiar EG, et al. Treatment of injuries to the inferior alveolar nerve after endodontic procedures. Clin Oral Investig 1998;2(2):73–6. [5] Escoda-Francoli J, Canalda-Sahli C, Soler A, Figueiredo R, Gay-Escoda C. Inferior alveolar nerve damage because of overextended endodontic material: a problem of sealer cement biocompatibility? *J Endod* 2007 Dec; 33(12): 1484 1489. [6] Pogrel MA. Damage to the inferior alveolar nerve as the result of root canal therapy. *J Am Dent Assoc* 2007 Jan; 138(1): 65–69. [7] Misch CE, Resnik MR. Mandibular nerve neurosensory impairment after dental implant surgery: management and protocol. Implant Dent 2010;19(5):378–86. [8] Bhat P, Cariappa KM. Inferior alveolar nerve deficits and recovery following surgical removal of impacted mandibular third molars. J Maxillofac Oral Surg 2012; 11(3):304–8. [9] Renton T. Prevention of iatrogenic inferior alveolar nerve injuries in relation to dental procedures. Dent Update. 2010 Jul-Aug;37(6):350-2, 354-6, 358-60. [10] Al-Sabbagh M, Okeson JP, Khalaf MW, Bhavsar I. Persistent pain and neurosensory disturbance after dental implant surgery: pathophysiology, etiology, and diagnosis. Dent Clin North Am. 2015;59:131–42. [11] Hegedus F, Diecidue RJ. Trigeminal nerve injuries after mandibular implant placement – practical knowledge for clinicians. *Int J Oral Maxillofac Implants* 2006 Jan-Feb; 21(1): 111– 116. [12] Hillerup S, Jensen R. Nerve injury caused by mandibular block analgesia. *Int J Oral Maxillofac Surg* 2006; 35(5): 437–443. Epub 2005 Dec 15. [13] Delcanho, RE and Moncada, E. Persistent pain after dental implant placement: a case of implant-related nerve injury. *JADA*. 2014; 145: 1268–1271. [14] Klasser GD, Gremillion HA. Neuropathic orofacial pain patients in need of dental care. J Can Dent Assoc 2012;78:c83. [15] Merskey H, Bogduk N, editors. Classification of chronic pain, 2nd edition, IASP Task Force on Taxonomy. Seattle (WA): IASP Press; 1994. p. 209–14. [16] IASP Taxonomy [recurso electrónico] http://www.iasp- pain.org/Education/Content.aspx?ItemNumber=1698. [17] Vera Carrasco Oscar. Cómo escribir artículos de revisión. Rev. Méd. La Paz. 2009; 15(1): 63-69.

[18] Delcanho RE. Neuropathic implications of prosthodontic treatment. J Prosthet Dent 1995;73(2):146–52. [19] Gregg JM. Neuropathic complications of mandibular implant surgery: review and case presentations. Ann R Australas Coll Dent Surg 2000;15:176–80. [20] 7. Okeson JP. Bell's oral and facial pain. 7th edition. Chicago: Quintessence Publishers; 2014. [21] Costigan M, Scholz J, Woolf CJ. Neuropathic pain: a maladaptive response of the nervous system to damage. Annu Rev Neurosci 2009;32:1–32. [22] Treede RD, Jensen TS, Campbell JN, et al. Neuropathic pain: redefinition and a grading system for clinical and research purposes. Neurology 2008;70(18):1630–5. [23] Olmedo-Gaya MV, Manzano-Moreno FJ, Cañaveral-Cavero E, de Dios Luna-Del Castillo

J, Vallecillo-Capilla M. Risk factors associated with early implant failure: A 5-year retrospective clinical study. J Prosthet Dent. 2016 Feb;115(2):150-5. [24] Kehlet H, Jensen TS, Woolf CJ. Persistent postsurgical pain: risk factors and prevention. Lancet 2006;367(9522):1618-1625. [25] Schug SA, Pogatzki-Zahn EM. Chronic pain after surgery or injury. IASP Pain Clinical Updates 2011;19(1):1-5. [26] Diatchenko L, Nackley AG, Tchivileva IE, Shabalina SA, Maixner W. Genetic architecture of human pain perception. Trends Genet 2007;23(12): 605-613. [27] Choukroun J, Khoury G, Khoury F, Russe P, Testori T, Komiyama Y, Sammartino G, Palacci P, Tunali M, Choukroun E. Two neglected biologic risk factors in bone grafting and implantology: high low-density lipoprotein cholesterol and low serum vitamin D. J Oral Implantol. 2014 Feb;40(1):110-4. [28] Kuroi R, Minakuchi H, Hara ES, Kawakami A, Maekawa K, Okada H, Kuboki T. A risk factor analysis of accumulated postoperative pain and swelling sensation after dental implant surgery using a cellular phone-based real-time assessment. J Prosthodont Res. 2015 Jul;59(3):194-8. [29] Khorshid HE, Hamed HA, Aziz EA. Complications, risk factors, and failures of immediate functional loading of implants placed in the completely edentulous maxillae: a report of 3 consecutive cases. Implant Dent. 2014 Apr;23(2):125-31. [30] Jacobsen C, Metzler P, Rössle M, Obwegeser J, Zemann W, Grätz KW. Osteopathology induced by bisphosphonates and dental implants: clinical observations. Clin Oral Investig. 2013 Jan;17(1):167-75. [31] Granollers M, Berini L, Gay C. Variaciones de la anatomía del nervio dentario inferior. Revisión bibliográfica. Anales de Odontoestomatología 1997;1:24-9. [32] Olivier E.: Le canal dentaire inférieur et son nerf chez 1'adulte. Annal Anat Pathol, 1927; 4: 975-987.

[33] Yosue Y., Brooks S.L.: The appearance of mental foramina on panorarnic radiographs. I. Evaluations of patients. Oral Surg Oral Med Oral Path, 1989; 68: 360- 364. [34] Figueiredo R, Camps-Font O, Valmaseda-Castellón E, Gay-Escoda C. Risk Factors for Postoperative Infections After Dental Implant Placement: A Case-Control Study. J Oral Maxillofac Surg. 2015 Dec;73(12):2312-8.

[35] Tay AB, Zuniga JR. Clinical characteristics of trigeminal nerve injury referrals to a university centre. Int J Oral Maxillofac Surg 2007;36(10):922–7. [36] Ellies LG, Hawker PB. The prevalence of altered sensation associated with implant surgery. Int J Oral Maxillofac Implants 1993;8(6):674–9.

[37] Bartling R, Freeman K, Kraut RA. The incidence of altered sensation of the mental nerve after mandibular implant placement. J Oral Maxillofac Surg 1999;57(12):1408–1. [38] Misch CE, Perel ML, Wang HL, Sammartino G, Galindo-Moreno P, Trisi P, Steigmann M, Rebaudi A, Palti A, Pikos MA, Schwartz-Arad D, Choukroun J, Gutierrez-Perez JL, Marenzi G, Valavanis DK. Implant success, survival, and failure: the International Congress of Oral Implantologists (ICOI) Pisa Consensus Conference. Implant Dent. 2008 Mar;17(1):5-15.

[39] Walk D, Sehgal N, Moeller-Bertram T, et al. Quantitative sensory testing and mapping: a review of nonautomated quantitative methods for examination of the patient with neuropathic pain. Clin J Pain 2009;25(7):632–40. [40] Bennett MI, Smith BH, Torrance N, et al. The S-LANSS score for identifying pain of predominantly neuropathic origin: validation for use in clinical and postal research. J Pain 2005;6(3):149–58.

[41] Smith MH, Lung KE. Nerve injuries after dental injection: a review of the literature. *J Can Dent Assoc* 2006; 72: 559–564. [42] Renton T, Yilmaz Z. Iatrogenic injuries to oral trigeminal nerve branches: 221 cases. Risk

Management from Dental Protection. *Riskwise UK* 2009; 39: 4–9.

[43] Loescher AR, Robinson PP. The effect of surgical medicaments on peripheral nerve function. *Br J Oral Maxillofac Surg* 1998 Oct; 36(5): 327–332. [44] Perez-Castro R, Patel S, Garavito-Aguilar ZV, Rosenberg A, Recio-Pinto E, Zhang J, Blanck TJ, Xu F. Cytotoxicity of local anesthetics in human neuronal cells. *Anesth Analg* 2009 Mar; 108(3): 997–1007.

[45] Riberio PD Jr, Sanches MG, Okamoto T. Comparative analysis of tissue reactions to anaesthetic solutions using histological analysis in subcutaneous tissues of rats. *Anaesth Prog* 2003; 50: 169–180. [46] Feifel H, Reidiger D, Gustorf-Aeckerle R. High resolution computed tomography of the inferior alveolar and lingual nerves. *Neuroradiology* 1994; 36: 236–238.

[47] Harris D, Buser D, Dula K, Gröndahl K, Haris D, Jacobs R, Lekholm U, Nakielny R, van Steenberghe D, vander Stelt P. European Association for Osseointegration. EAO guidelines for the use of diagnostic imaging in implant dentistry. A consensus workshop organized by the European Association for Osseointegration in Trinity College Dublin. *Clin Oral Implants Res* 2002; 13: 566–570. [48] Harris D, Horner K, Gröndahl K, Jacobs R, Helmrot E, Benic GI, Bornstein MM, Dawood A, Quirynen M. E.A.O. guidelines for the use of diagnostic imaging in implant dentistry 2011. A consensus workshop organized by the European Association for Osseointegration at the Medical University of Warsaw. Clin Oral Implants Res. 2012 Nov;23(11):1243-53.

[49] Bornstein MM, Al-Nawas B, Kuchler U, Tahmaseb A. Consensus statements and recommended clinical procedures regarding contemporary surgical and radiographic techniques in implant dentistry. Int J Oral Maxillofac Implants. 2014;29 Suppl:78-82. [50] Sahman H, Sekerci AE, Sisman Y, Payveren M. Assessment of the visibility and characteristics of the mandibular incisive canal: cone beam computed tomography versus panoramic radiography. Int J Oral Maxillofac Implants. 2014 Jan-Feb;29(1):71-8

[51] de Souza Tolentino E, Silva PA, Pagin O, Centurion BS, Molin SK, de Souza Tolentino L. Uncommon trajectory variations of the mandibular canal and of the mandibular incisive canal: case report. Surg Radiol Anat. 2013 Nov;35(9):857-61. [52] Neugebauer J, Shirani R, Mischkowski RA, Ritter L, Scheer M, Keeve E, Zöller JE. Comparison of cone-beam volumetric imaging and combined plain radiographs for localization of the mandibular canal before removal of impacted lower third molars. Oral Surg Oral Med Oral Pathol Oral Radiol Endod. 2008 May;105(5):633-42; discussion 643.

[53] Tantanapornkul W, Okouchi K, Fujiwara Y, Yamashiro M, Maruoka Y, Ohbayashi N, Kurabayashi T. A comparative study of cone-beam computed tomography and conventional panoramic radiography in assessing the topographic relationship between the mandibular canal and impacted third molars. Oral Surg Oral Med Oral Pathol Oral Radiol Endod. 2007 Feb;103(2):253-9. Epub 2006 Sep 1.

[54] Neves FS, Nascimento MC, Oliveira ML, Almeida SM, Bóscolo FN. Comparative analysis of mandibular anatomical variations between panoramic radiography and cone beam computed tomography. Oral Maxillofac Surg. 2014 Dec;18(4):419-24. [55] MaqboolA, SultanAA, BottiniGB, etal. Pain caused by a dental implant impinging on an accessory inferior alveolar canal: a case report. Int J Prosthodont 2013; 26(2):125–6.

[56] Greenstein G, Tarnow D. The mental foramen and nerve: clinical and anatomical factors related to dental

implant placement: a literature review. *J Periodontol* 2006; 77(12): 1933– 1943. [57] Al-Sabbagh M, Okeson JP, Bertoli E, Medynski DC, Khalaf MW. Persistent pain and neurosensory disturbance after dental implant surgery: prevention and treatment. Dent Clin North Am. 2015 Jan;59(1):143-56.

[58] Tehemar SH. Factors affecting heat generation during implant site preparation: a review of biologic observations and future considerations. Int J Oral Maxillofac Implants 1999;14(1):127–36.

[59] Khawaja N, Yilmaz Z, Renton T. Case studies illustrating the man- agement of trigeminal neuropathic pain using topical 5% lidocaine plasters (published online before print April 11, 2013). Br J Pain 2013;7(2):107- 113. [60] Wright EF. Persistent dysesthesia following dental implant placement: a treatment report of 2 cases. Implant Dent 2011;20(1):20–6.

[61] Takatori M, Kuroda Y, Hirose M. Local anesthetics suppress nerve growth factor-mediated neurite outgrowth by inhibition of tyrosine kinase activity of TrkA. Anesth Analg 2006;102(2):462–7. [62] Spencer CJ, Gremillion HA. Neuropathic orofacial pain: proposed mechanisms, diagnosis, and treatment considerations. Dent Clin North Am 2007;51(1):209–24, viii.

[63] Tan WC, Ong M, Han J, Mattheos N, Pjetursson BE, Tsai AY, Sanz I, Wong MC, Lang NP; ITI Antibiotic Study Group. Effect of systemic antibiotics on clinical and patient-reported outcomes of implant therapy - a multicenter randomized controlled clinical trial. Clin Oral Implants Res. 2014 Feb;25(2):185-93. [64] Trigeminal Foundation. Nerve injuries: helping to prevent, educate and manage. www.trigeminalnerve.org.uk.

En caso de corresponder el resumen a un póster, generar el pdf con la plantilla cumplimentada y dicho póster.