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Review

A review of oral surgery-related papers published in the British Journal of Oral and Maxillofacial Surgery during 2011 and 2012

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Abstract

This paper is a synopsis of all articles relating to oral surgery that were published in the British Journal of Oral and Maxillofacial Surgery (BJOMS) between January 2011 and December 2012. Of the 57 published, 40 (70%) were full-length articles that predominantly focused on implantology, dentoalveolar surgery, and bisphosphonate osteonecrosis of the jaws (BONJs). In addition, a number of short communications, technical notes, and letters to the editor described rare cases, unusual complications, and novel surgical techniques.

Keywords: Oral surgery; Review; Publication

Introduction

A total of 57 articles relating to oral surgery were published in the British Journal of Oral and Maxillofacial Surgery (BJOMS) between January 2011 and December 2012; 9 (16%) of them were published online only. This is lower than the number relating to oncology published during 2010–11 ($n = 127$),[1] but higher than the number relating to trauma, orthognathic surgery, and the salivary glands (45, 42, and 20, respectively).[2–4] Table 1 shows a breakdown of the articles published and Table 2 gives a summary of the types of full-length article. We present a summary of the papers published and classify them by type and area of interest.

Implantology

Implants were covered in 9 full-length articles, which predominantly investigated osseointegration and implant failure. Methods to improve or accelerate osseointegration were discussed in several papers. 2 papers reported early osseointegration.[5,6] Li et al. compared implants that had micro/nano surfaces with control groups of implants that had machined surfaces or micro surfaces.[5] They found significantly greater maximal pull out forces and greater contact between the bone and implant 2 weeks after implantation in the micro/nano group. Liu et al. reported radiographic, histological, and mechanical findings that show that low intensity pulsed ultrasound may have the potential to accelerate osseointegration.[6] A similar trend towards early peri-implant formation of bone was noted by Stadlinger et al. who investigated the effect of chemically conditioning the surface of titanium implants with hydroxide ions in pig mandibles.[7] A further study suggested the benefits of bicortical anchorage of implants compared with monocortical anchorage with regards to stability under immediate loading.[8]

Wang et al. investigated osseointegration of implants in rats, and compared the success of implants between untreated diabetic rats, diabetic rats with local infiltration of insulin at the implant–bone interface, and a control group.[9] The implant–bone contact and the amount of newly formed bone

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Table 1
Breakdown of type of article published.

Type of publication	No. (%) ($n = 57$)
Full-length articles:	
Implantology	9
Bone augmentation	9
Analgesia and anaesthesia	9
Oral or dentoalveolar surgery	10
Bisphosphonate osteonecrosis of the jaw	3
Total	40 (70)
Other articles:	
Technical notes	5
Short communications	10
Letters to the editor	2
Total	17 (30)

Table 2
Type of full-length article published.

Design of study	No. ($n = 40$)
Retrospective	5
Prospective	12
Randomised/randomised controlled trial	7
Review/survey	6
Laboratory	10

in the untreated diabetic group was significantly lower than in the other groups. Although the implant–bone contact in the insulin group did not reach that of the controls, it was greater than in the diabetic group. These findings suggest that local infiltration of insulin at the implant–bone interface may have important clinical implications for improving the success of oral implants in diabetic patients. A further study showed that titanium maxillofacial implants and osteosynthesis materials did not have a negative effect on platelet function.[10]

Barber et al. produced a systematic review of all 41 previously published articles on the use of primary osseointegrated dental implants in head and neck oncology.[11] Their summary of case reports, reviews, and clinical studies outlined the current evidence base for the use of such implants in oral rehabilitation.

Baqain et al. prospectively studied 169 patients to identify risk factors for early failure of dental implants.[12] Of the 399 implants placed, 15 were lost. Those inserted in areas of narrowly attached gingiva had five times the risk of early failure, and the use of polyglactin sutures was associated with nearly four times the risk of early failure. A review by Algraffee et al. recognised the value of healthy peri-implant tissue for the long-term stability of dental implants.[13] They identified poor oral hygiene, remnants of dental cement in the sulcus of the implant, smoking, and a history of periodontitis as important risk factors for peri-implant mucositis and peri-implantitis.

Bone augmentation

Numerous authors have investigated alveolar bone augmentation before the placement of implants. Almasri and Altalibi reported the successful use of a synthetic alloplastic graft within a biodegradable chamber as an alternative to an autogenous or allogenic graft to reconstruct a horizontal bony defect in the rabbit mandible.[14] It provides an alternative to the titanium meshes which have been used previously as stabilising membranes over particulate grafts and have been difficult and time consuming to remove. In their study on sinus augmentation, Li et al. showed that use of a collagen membrane could reduce resorption of grafted bone on the apical surface of implants and stimulate formation of new bone.[15] Gao et al. evaluated the use of distraction implants to increase alveolar height, and specifically investigated the optimum balance between the lengths of the transport and support portions of each implant.[16]

Bone augmentation was studied by Stimmelmayr et al. who carried out dental extractions with immediate bone grafting of the socket using epithelialised and subepithelial connective tissue.[17] In the 5-month postoperative period they reported 17.6% bony resorption, which is comparable with other studies. Hashemi and Beshkar studied bacterial contamination of bone collected for autologous grafting.[18] They compared traditional harvesting techniques (using rongeurs) with bone collected using a bone filter attached to a suction system. Despite using stringent aspiration protocols to minimise salivary contamination, bone obtained using the filter was significantly more contaminated.

In a longitudinal study on the stability of implants in the augmented anterior maxilla, Al-Khaldi et al. found that stability was comparable with that of implants placed in non-augmented bone.[19] However, another prospective case series reported a success rate of 98% when alloplastic bone was used as a vertical inlay graft to provide primary stability for single-stage anterior implants in highly atrophic alveolar crests.[20]

Dobbyn et al. assessed the reliability of the Kindelan scoring system for alveolar bone grafting in a retrospective study using 84 radiographs.[21] They used it to assess postoperative occlusal radiographs with and without comparative preoperative views, and found good reliability in both groups. The study supports the continued use of postoperative films to measure outcomes as they are cheaper, more accessible, and give lower doses of radiation than increasingly used cone beam computed tomography (CT). De Riu et al. reported the use of CT in the virtual planning of dental implants after reconstruction of the mandible with a fibular free flap.[22]

Analgesia and anaesthesia

Several studies focused on nerve function and anaesthesia. Du et al. looked at the systemic delivery of nerve growth factor (NGF) and the recovery of inferior alveolar nerve (IAN) function.[23] They found less myelin debris, more regenerating axons, and a greater density of axons in rabbits given NGF systemically than in controls, which suggests that the systemic delivery of NGF might accelerate recovery after