Is coronectomy really preferable to extraction?

We have recently seen several articles in this and other journals that propose the use of coronectomy instead of extraction of lower third molars with radiological evidence of proximity to the inferior alveolar nerve. However, I think that coronectomy is being proposed without adequate evaluation of its long-term risks (notably apical periodontitis associated with necrosis of the pulp, which could potentially affect the inferior alveolar nerve).

Firstly, I congratulate Renton et al. on their well-designed clinical trial. However, I query their conclusion that their results support the use of coronectomy in cases of this type. It is certainly true that the inferior alveolar nerve was damaged in 19% of 102 extractions compared with only 3% of 94 coronectomy operations. However, only 2 of the 22 nerve lesions were classifiable as permanent (i.e. still manifest 6 months later). The authors do not specify in which group/s these 2 lesions occurred: but in any case, they constitute an incidence of only 1.5% (of the total of 102 + 36 extractions), and if we take this as the relevant figure, the putative benefit of coronectomy becomes less clear. Does this apparent slight reduction in the risk of a permanent nerve lesion outweigh the possible long-term risks of coronectomy (which, as noted, include neuropathy)?

Independently of the above, an interesting conclusion that can be drawn from the study by Renton et al. is that in cases of this type (radiological evidence of proximity to the inferior alveolar nerve), if the apex of the root breaks during the extraction – as occurs fairly often – then it should probably not be removed, as there is then a considerable risk of damage to the nerve.

In summary, the study by Renton et al. and other recently published similar ones do not justify the routine use of coronectomy in cases of this type. However, these results suggest that if the apex of the root breaks during the extraction, it should probably not be removed.

We congratulate the authors on their comparison of the incidence of injury to the inferior alveolar nerve with two techniques (coronectomy and removal) of treating mandibular third molars in which there was a high risk of injury to the inferior alveolar nerve based on radiographic features in routine preoperative dental orthopantograms. We think that some questions remain, and there are some elements in their paper we would like to comment on.

The authors showed the beneficial effects of coronectomy in terms of damage to the alveolar nerve compared with traditional operations. Sensory disturbances for a few weeks were noted in 19 of 102 patients after traditional removal, none after successful coronectomy (58 patients), and 3 (12%) (not 5 (8%) as mentioned in Table 1) of the 36 patients after failed coronectomy in whom the third molar was removed. The cause of paraesthesia was probably neurapraxia as complete recovery of sensation occurred within 3 weeks in all but two patients. Because of the high standard deviation (Table 1), we assume that these two patients were in the “traditional removal” group. Two of 138 patients in the “traditional removal” and failed coronectomy groups compared with none out of 36 in the “coronectomy” group is not significant.

In Table 1, the authors mention no reoperations in either group, whereas in the discussion they state that the two patients with permanent symptoms of injury to the inferior alveolar nerve for more than 6 months were treated by “traditional operation”. Don’t the authors consider that as a reoperation? What kind of operation was done? The peroperative diagnosis is not stated for either patient with permanent injury. Was it a neuroma (in continuity)? Was it complete transection of the nerve? Also, what do the authors...