

Root teeth contact by fixation screws during jaw surgeries: incidence and consequences

During the surgeries to correct jaw deformities, known as orthognathic surgery, is necessary to stablish the correct dental occlusion. For that, in the past it was used wires and metal arch bars that usually causes damages to the gingiva surrounding the teeth, or most commonly nowadays, it is used the orthodontic brackets but this last one can pop out during the surgery causing lateness to the process. The use of specific screws with holes in their heads has become common in recent years to block the upper and lower teeth during these jaw surgeries. The risk of injury to adjacent roots with their placement in this population has not been studied extensively. The aim of this study was to review the incidence and consequences of root contact/injury in patients undergoing orthognathic surgery.

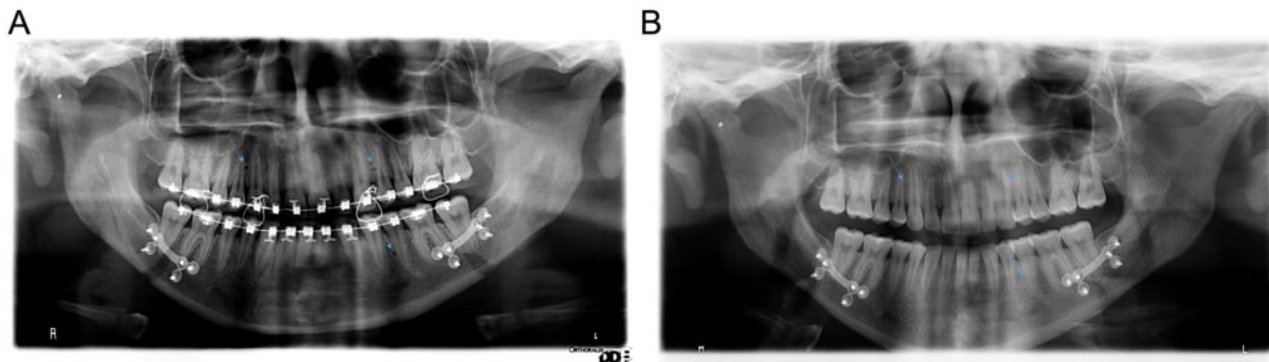


Fig. 1. A. Radiolucency close to the tooth root. B. Radiolucency close to the tooth root.

We reviewed the radiographic records of patients who underwent jaw surgery between January 2013 and September 2014 at a university in Kentucky, USA. The mean number of screws used was correlated to the mean number of roots affected. Of 125 patients who underwent to this specific surgery, only 15 (12%) had evidence of root contact. Subsequent radiographs showed resolution of the bone defects. There was no clinical evidence of pulpal necrosis or pain during follow-up. There was no correlation between the number of screws used and the number of roots injured ($P = 0.279$). Based on these results, screws can safely be used to establish interim upper and lower dental archs fixation during orthognathic surgery. Caution should be taken during placement to avoid direct injury to the roots of teeth.

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Publication

[Root contact with maxillomandibular fixation screws in orthognathic surgery: incidence and consequences.](#)

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Int J Oral Maxillofac Surg. 2016 Mar 15