

Letter to Editor

To irrigate or not to irrigate: Immediate postextraction socket irrigation and alveolar osteitis

Editor,

Alveolar osteitis (AO), commonly referred to as dry socket, is identified as a severe pain in or around the site of an extracted tooth, intensifying any time between the first and third postoperative days, accompanied by partial or total blood clot loss in the alveolar socket.^[1] AO is a common complication of extraction of impacted mandibular third molar (20-30%) or any other teeth (1-70%).^[2-6]

Alveolar osteitis is a severe and self-limiting pain, requiring several postoperative visits to be healed, leading to increase in patient morbidity and costs. Therefore, the basic and the best treatment is prevention.

Several risk factors that affect the incidence of AO after tooth extraction have been identified.^[1] The most important identified risk factors are smoking,^[7,8] drinking,^[9] poor oral hygiene,^[10,11] age,^[8,11] female gender,^[7,8,12] and traumatic exodontia.^[8,9] However, the role of postextraction irrigation and suction of the fresh socket has not yet been thoroughly investigated.

Traditionally, after extraction of a tooth, the socket is irrigated and suctioned with copious amounts of normal saline (NS). This end-of-surgery technique enables the removal of debris from the socket. Some dentists believe that by exclusion of debris, the healing can progress normally.

On the other hand, the goal of an operator is to maintain the blood clot within the fresh socket to reduce AO incidence. It should be noted that irrigation by large amounts of NS followed by suctioning of

the socket may wash away the fresh blood clot, and bleeding may not repopulate again in the socket.^[13] Therefore, the question of whether a socket must be irrigated after extraction is still under debate.

The aim of this report was to systematically review previous randomized control trials (RCTs) regarding the influence of end-of-surgery irrigation on the incidence of AO.

Electronic databases were searched with “alveolar osteitis” or “dry socket,” and “irrigation” or “lavage” as keywords for titles and abstracts. In addition, the references of the articles were reviewed.

This review included control trials published up to February 24, 2014, in English language databases including PubMed, Scopus, EBSCO, Ovid Medline, and Cochrane central registers for control trial, which returned 25, 23, 38, 80, and 10 results, respectively. The results of all the aforementioned databases were similar to those of PubMed.

Inclusion criterion was limited to journal articles on prospective, split-mouth, and RCTs. The exclusion criteria included nonfulfillment of one or all of the inclusion criteria, not using placebo, and the outcome of interest being other than AO incidence.

Of the 25 articles identified in PubMed, three studies were relevant to the subject of this study. The full texts of the three remaining articles were obtained and evaluated for compliance with inclusion/exclusion criteria. Finally, only one split-mouth RCT satisfied the inclusion criteria.^[13] The other two studies^[14,15] were excluded because they evaluated only the incidence of AO for large (175 ml NS solution) and small amounts (<25 ml) of irrigation and did not include any placebo group (nonirrigated socket). In the single selected study, the traditional end-of-surgery irrigation of socket significantly increased risk of AO incidence.^[13] This study reported that younger patients were more likely to experience socket wall bleeding and blood repopulation even after extensive lavage as opposed to older patients. Sockets of older patients might be more sensitive to end-of-surgery irrigation. However, principle rules of tooth extraction must be taken into account, namely, irrigation must be employed when debris is seen within the socket or under the periosteal flap to prevent subperiosteal abscess.

Although a cool NS irrigation is necessary during bone drilling to prevent an increase of bone temperature, it

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must be employed selectively after the extraction is complete. Irrigation with sterile NS delivered by a hand monoject syringe tends to wash away fresh blood and decrease socket bleeding. The bleeding may or may not repopulate in the socket often leaving the socket empty or full of NS instead of blood.

The varying surgical difficulty (level of impaction) on both sides of a mouth can be considered as a confounding variable, which was not taken into account in the selected study. Other limitations include a right-handed surgeon operating only on the right-hand side and right experimental socket. Having to operate on the contralateral side may add to the difficulty of the surgery and may consequently increase trauma. Further, traumatic tooth extraction may increase the risk of AO incidence.^[1] Another limitation was the small sample size employed in the selected study.

Of the three full-text articles obtained,^[13-15] two were excluded.^[14,15] They were old studies, published in 1976 and 1977. Moreover, because these studies believed in the traditional postextraction technique that involves using copious irrigation for the socket, they only compared different amounts of irrigation with no placebo group (nonirrigated socket). However, Tolstunov^[13] highlighted a new risk factor for AO incidence that must be evaluated more thoroughly in future studies.

As can be seen, there are very few properly designed studies on end-of-surgery irrigation and incidence of AO. Therefore, further studies are needed on double-blind, split-mouth RCTs with more control on included AO risk factors.

In conclusion, the traditional end-of-surgery irrigation of socket procedure may increase the risk of AO incidence, especially in older patients. Natural socket bleeding at an extraction site creates a favorable environment for the formation of a blood clot necessary for good osseous healing of the socket. The conclusions of this study must be considered with caution because the authors believe that more prospective RCTs are needed to validate them.

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