

# Proximal Contact Loss: An Emerging Frequent Implant Complication

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A “proximal contact” is defined as the area of a tooth that is in close association, connection, or touch with an adjacent tooth in the same arch.<sup>1</sup> During the process of seating or fitting any removable partial or fixed dental prosthesis, including implant-supported restorations, the first area to be adjusted is the “proximal contact” area.<sup>2</sup> Careful restoration of the proximal contacts is critical for long-term implant-prosthesis success.<sup>3</sup> Recently, few retrospective studies with long-term follow-ups have indicated that the proximal contact loss (PCL) between implant prostheses and adjacent natural teeth is a frequently observed, inevitable, and progressive complication.<sup>3–5</sup> The PCL may occur due to several reasons, including discrepancy of tooth and implant movement in the jaw, the proximity of implant and a tooth, timespan of a prosthesis in the mouth, peri-implant tissue health, and continuous crestal bone loss.<sup>3–5</sup> The literature lacks sufficient evidence for determining the prevalence, causes, and management of PCL. In a recently published 10-year retrospective study,<sup>3</sup> total 237 single implant crowns and 83 fixed implant prostheses were evaluated for PCL and observed its overall prevalence of 51%. A total of 65% of the patients were aware of its presence, and 35% reported the food impaction. Liang et al.<sup>4</sup> evaluated the prevalence of PCL up to 18 years with a total of 317 patients and observed that the mesial contact loss rate (27%) was significantly higher than that of the distal contact loss (5%). They further concluded that the occlusal retainer and routine follow-up might help prevent PCL.<sup>4</sup> Ghasemi et al.<sup>6</sup> observed a 29% of the overall frequency of occurrence of PCL, with statistically higher on mesial contacts (21%) than the distal contacts (7%). Interestingly, they observed a significant association between bone loss and PCL. Other potential factors such as the arch, retention type, opposing dentition, implant type, tooth position in the arch, parafunctional habits, and vitality of adjacent teeth were not significantly associated. A systematic review by Abduo and Lau<sup>5</sup> with 19 eligible studies found a PCL prevalence of 11–30% with the short-term studies (<2 years), 13–65% with the medium-term studies (2–5 years), and 29–83.3% with long-term studies (>5 years). Bento et al.<sup>7</sup> reviewed ten studies and indicated that five of them presented PCL rates higher than 50%. In general, the PCL showed a cumulative proportion of 41% with a higher frequency of occurrence with the mesial contacts and in the mandibular arch.<sup>7</sup> Manicone et al.<sup>8</sup> studied a total of 11,699 restorations in 15 studies and indicated that approximately 29% of contact points develop PCL and mainly causing food impaction and damage to the interproximal tissues. Papageorgiou et al.<sup>9</sup> reviewed a total of 27 nonrandomized studies with 1,572 patients followed up to 18.5 years to evaluate the frequency of occurrence of PCL and found the pooled percentage prevalence of PCL of 46.3%.

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With the recent surge in published systematic reviews and retrospective studies, the PCL and its consequences in long-term follow-ups need urgent attention in the planning of prospective clinical studies. Alqahtani et al.<sup>10</sup> prospectively investigated the proximal contact tightness with the use of a digital force analyzer. A total of 40 patients aged between 18 and 50 years were randomly allocated to group I (20 subjects) who have received implant prostheses without insertion of Essix retainer, and group II received an insertion with Essix retainer. The results revealed that the frequency of PCL was decreased with the usage of Essix retainer, especially on the mesial side. These findings were also in accordance with Liang et al.,<sup>4</sup> indicating that the occlusal retainer and routine follow-ups may help prevent PCL.

The PCL can have significant implications such as food impaction, pain, patient discomfort, and dissatisfaction.<sup>5</sup> It is important for implant clinicians to carefully maintain the follow-up appointments to ensure proximal contact tightness. Re-restoring the proximal contact tightness between implant prosthesis and the natural teeth needs to be carried out whenever first observed with adjunct treatment modalities in maintaining arch integrity, peri-implant health, masticatory effectiveness, and patient satisfaction.

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