The treatment of multi-rooted teeth with furcation involvement is challenging for clinicians. Usually the clinical response to non-surgical treatment is unpredictable and loss of attachment may continue during periodontal maintenance. Evidence for the impact of the severity of furcation involvement and the associated risk factors, upon long-term tooth loss is limited.

The aim of this study was to assess the influence of (i) the degree of furcation involvement, and (ii) the associated risk factors, upon the loss of multi-rooted teeth in patients treated for periodontitis and included in a maintenance program.

Demirel & Efeodlu (1995), was based upon attendance or failure to attend the scheduled appointments. Smoking status was recorded as smokers, former smokers and non-smokers. The tooth was treated as the unit of analysis. Univariate and multivariate regression analyses were conducted to determine the risk of loss of multi-rooted teeth throughout the duration of the study.

- Class I furcation involvement was not a significant risk factor, compared to no furcation involvement.
- Risk factors for multi-rooted tooth loss in subjects treated for periodontitis and enrolled into a maintenance program were class II and III furcation involvement, smoking and a lack of compliance.
- Non-smokers and former smokers did not differ with respect to multi-rooted tooth loss.
- Tooth loss was less frequent in the mandible than the maxilla.
Conclusions, impact and limitations:

Conclusions:
• Class II and III furcation involvement, current smoking and lack of compliance with maintenance program visits were all risk factors for multi-rooted tooth loss in patients treated for periodontitis.

Impact:
• Compliance with a strict maintenance program may be essential to prevent multi-rooted tooth loss in furcation involved teeth.
• Smokers should be encouraged to adhere to a smoking cessation protocol.

Limitations:
• The principle limitations of the reported study were its retrospective design, the use of multiple subgroup analyses potentially leading to small subgroup sample sizes, and wide confidence intervals; and using the tooth as the statistical unit of analysis prevents the drawing of conclusions at the patient level.