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A PROSPECTIVE RANDOMIZED CLINICAL STUDY COMPARING THE SURVIVAL RATE OF THE MANDIBULAR LINGUAL RETENTION WIRE USING DIRECT AND INDIRECT BONDING

Dong-Phung Van* (ortho resident), Athéna Papadakis, Nelly Huynh, Jocelyn Talbot, Pierre Rompré
Université de Montréal

Background: The lingual wire has been shown to be an effective way to ensure the retention of the lower anterior segment after orthodontic treatment. As it is increasingly used, it is important to achieve proper bonding of the wire to ensure stability.

Objective: The aim of this prospective randomized clinical study is to assess the short and medium term survival rate of the mandibular lingual retention wire using 2 different bonding techniques.

Material and Methods: The sample of 120 consecutive patients was randomly distributed into 2 groups: direct bonding (n=60) and indirect bonding (n=60). The multi strand twist wires (0.0175") used were all preformed by a technician and prepared for either direct or indirect bonding technique with a transfer matrix. Assure® and Filtek Flow® were used for direct bonding. Filtek Flow®, Assure®, and Sondhi® were used for indirect bonding. The lingual wires were evaluated for bonding failure, infiltration, breakage, and distortion at 2 months (T1) and 6 months (T2).

Results: Data for 69 patients at T1 (direct: 36, indirect: 33) and 30 patients at T2 (direct: 16, indirect: 14) have been collected so far. Preliminary results show that the failure rate for the indirect bonding method is 7.2% at T1 and 6.7% at T2, whereas the direct bonding method, it is 2.9% at T1 and 0% at T2. The data collection is ongoing.

Conclusion: Preliminary results suggest that a direct bonding technique of the lingual retention wire yields a better survival rate in the first 6 months.