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CLINICAL RESEARCH – SURGERY

Background and Aim

Restoring lateral maxillary incisors and lateral and central mandibular incisors is often challenging because of the limited space available for implant placement as well as high patient expectations.^{1,2} Narrow-diameter tapered implants are frequently used in this indication because they fit between adjacent natural tooth roots and are well-suited for an optimized emergence profile of the final restoration.



To evaluate the efficacy and safety of variable-thread tapered 3.0 mm implants placed in immediate function in private clinic and hospital-based settings over a 5-year follow-up period.

Methods and Materials

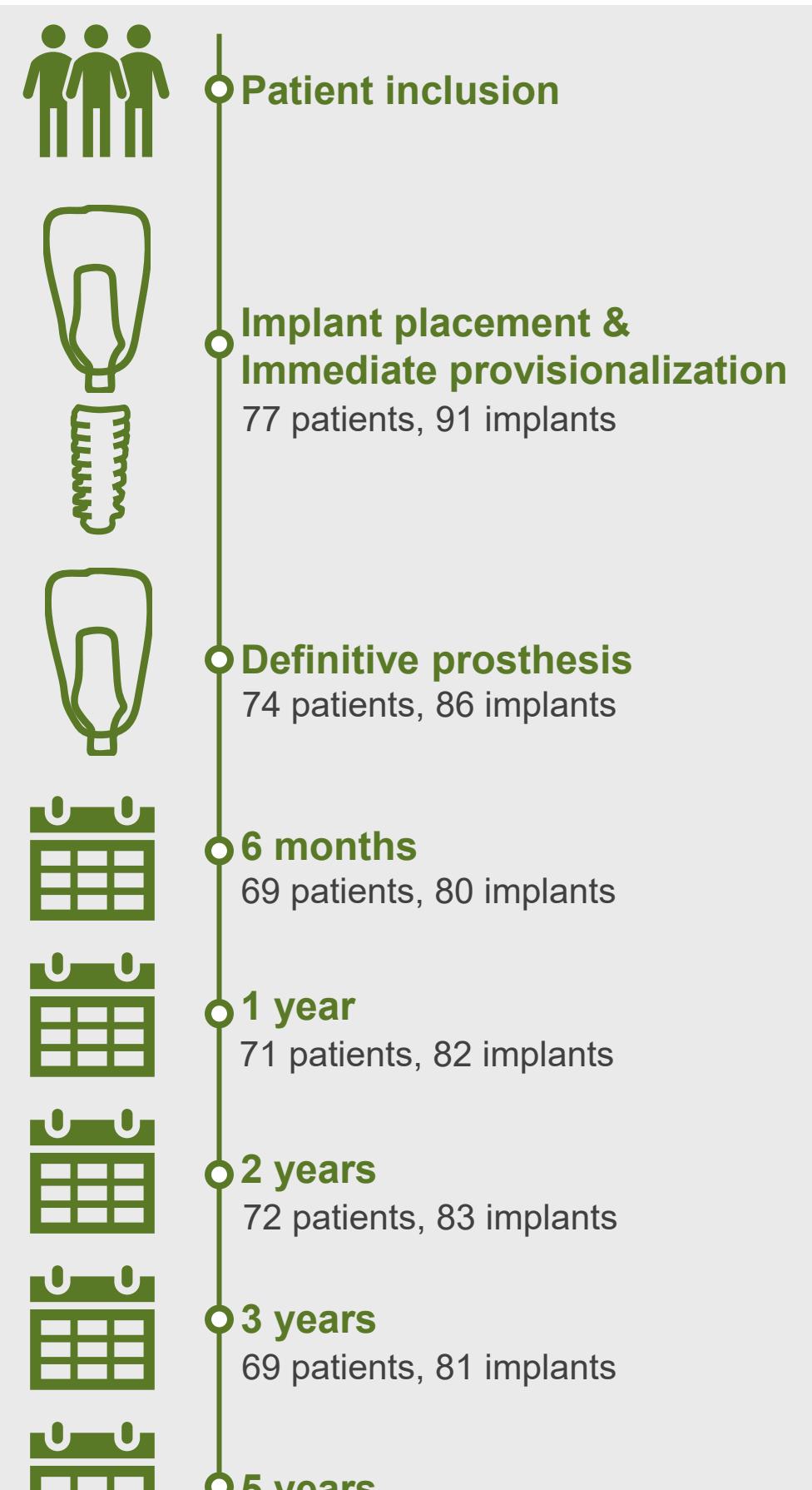


Figure 1. Study flow-chart with the number of patients and implants available at each follow-up visit.

Results

- Mean patient age at surgery was 40.9 ± 18.9 years. Selected baseline characteristics are shown in Fig 2.

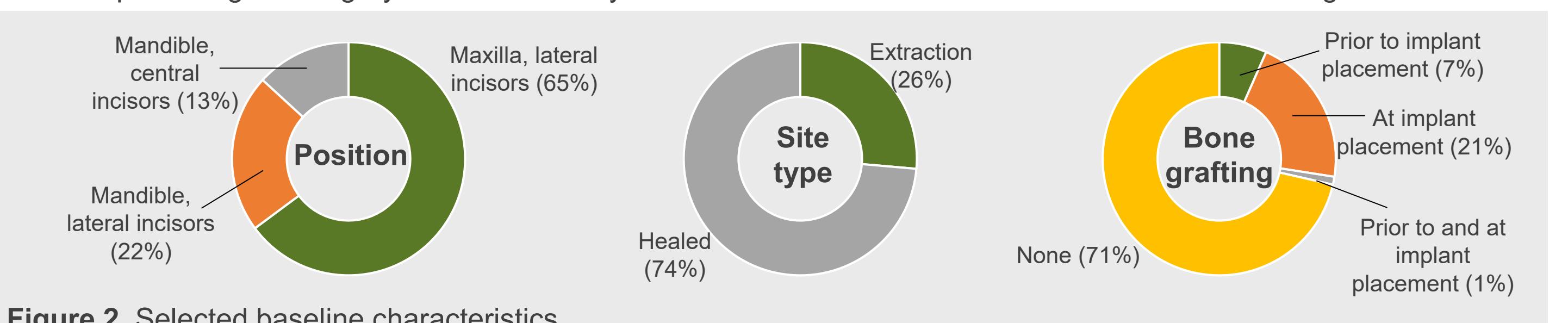
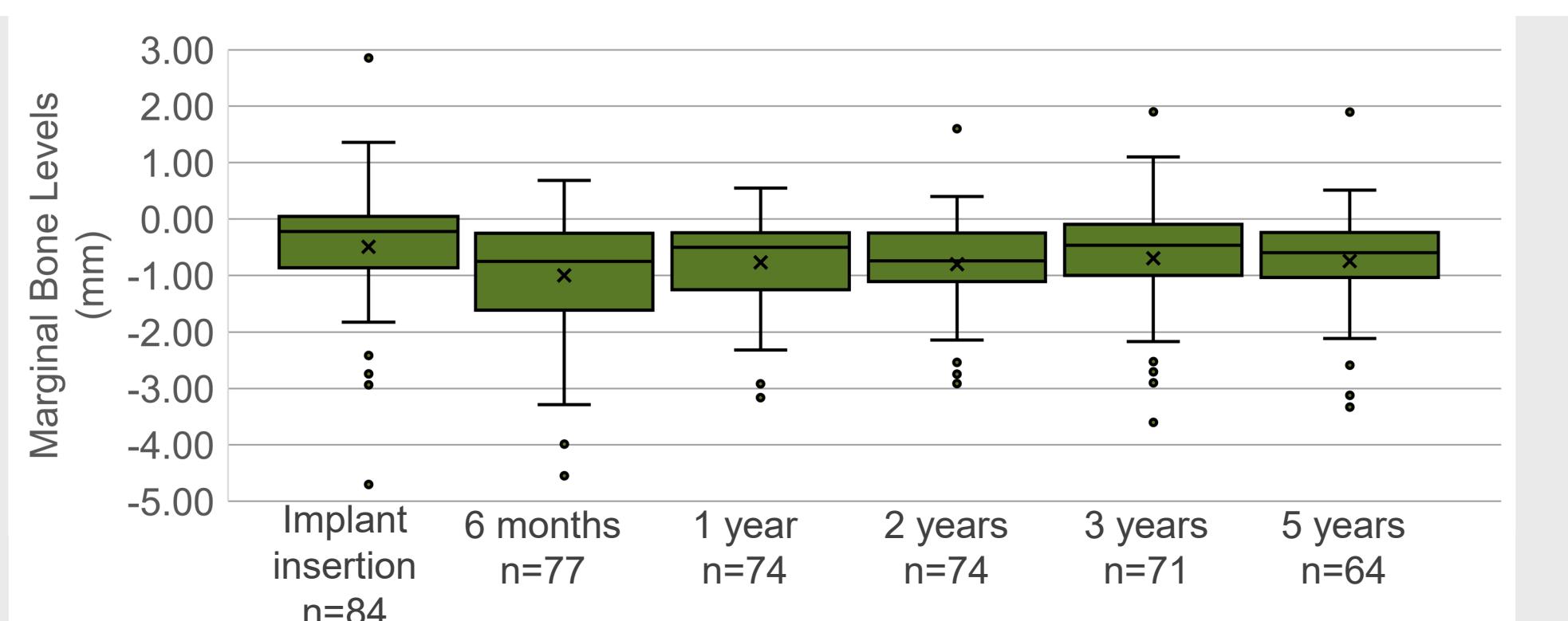


Figure 2. Selected baseline characteristics.

- The mean final insertion torque was 39.03 ± 4.65 Ncm and all implants were immediately provisionalized.
- High 5-year cumulative implant survival and success rates** of 96.5% and 95.2%, respectively. Three implants were lost, all within the first 3 months after implant insertion.
- Stable marginal bone levels** (Fig 3) after initial remodeling post implant insertion. The mean MBLC from implant insertion was -0.24 ± 1.30 mm to 1 year ($n=73$) and -0.21 ± 1.29 mm to 5 years ($n=63$).



- Healthy soft tissue** throughout the follow-up period: at 5 years the papilla index score was 2 or 3 at 80.6% of mesial and 76.4% of distal papillae, no plaque was present at 73.6% of sites, the bleeding index was 0 at 73.6% of sites, with no heavy or profuse bleeding reported, while the overall PES was 9.01.

Conclusion

Stable marginal bone, healthy soft tissue, and high success and survival rates with variable-thread tapered 3.0-mm diameter implants indicate that these implants are a safe and predictable treatment option in patients with limited bone volume and/or limited interdental space and eligible for immediate loading protocols.

References

- Slagter KW et al. (2014) J Periodontol 85(7):e241–e250.
- Buser D et al. (2004) Int J Oral Maxillofac Implants 19(Suppl):43–61.

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Clinical Case

An 18-year-old male with a missing lateral incisor in the maxilla (FDI position 22) received a narrow-diameter 15mm-long implant. The implant was provisionalized immediately, and the final prosthesis was delivered 5 months later.



Figure 4. Radiograph (left) at implant insertion and clinical view (right) at final prosthesis delivery.



Figure 5. Radiograph (left) and clinical view (right) at 1 year.



Figure 6. Radiograph (left) and clinical view (right) at 2 years.



Figure 7. Radiograph (left) and clinical view (right) at 3 years.



Figure 8. Radiograph (left) and clinical view (right) at 5 years.