

Radiographical Comparison Of Marginal Bone Levels Of Two Different Implant Systems After 7 Years In Function

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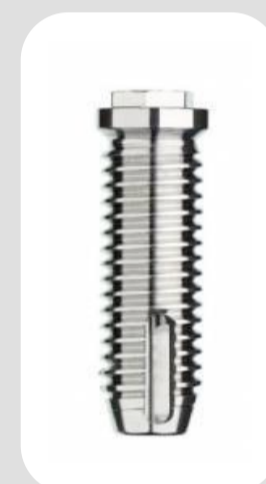
Background: In the last decades in implant development many efforts have been made in order to improve the osseointegration and longevity of dental implants. Different types of implant surface conditionings were promoted which should supply the clinicians with products of predictable clinical outcomes.

Purpose: The aim of this study was to evaluate the change of marginal bone level radiographically around two different implant systems up to seven years in function.

Materials and Methods:

In this study twenty fully edentulous patients were included and randomly assigned to two treatment groups:

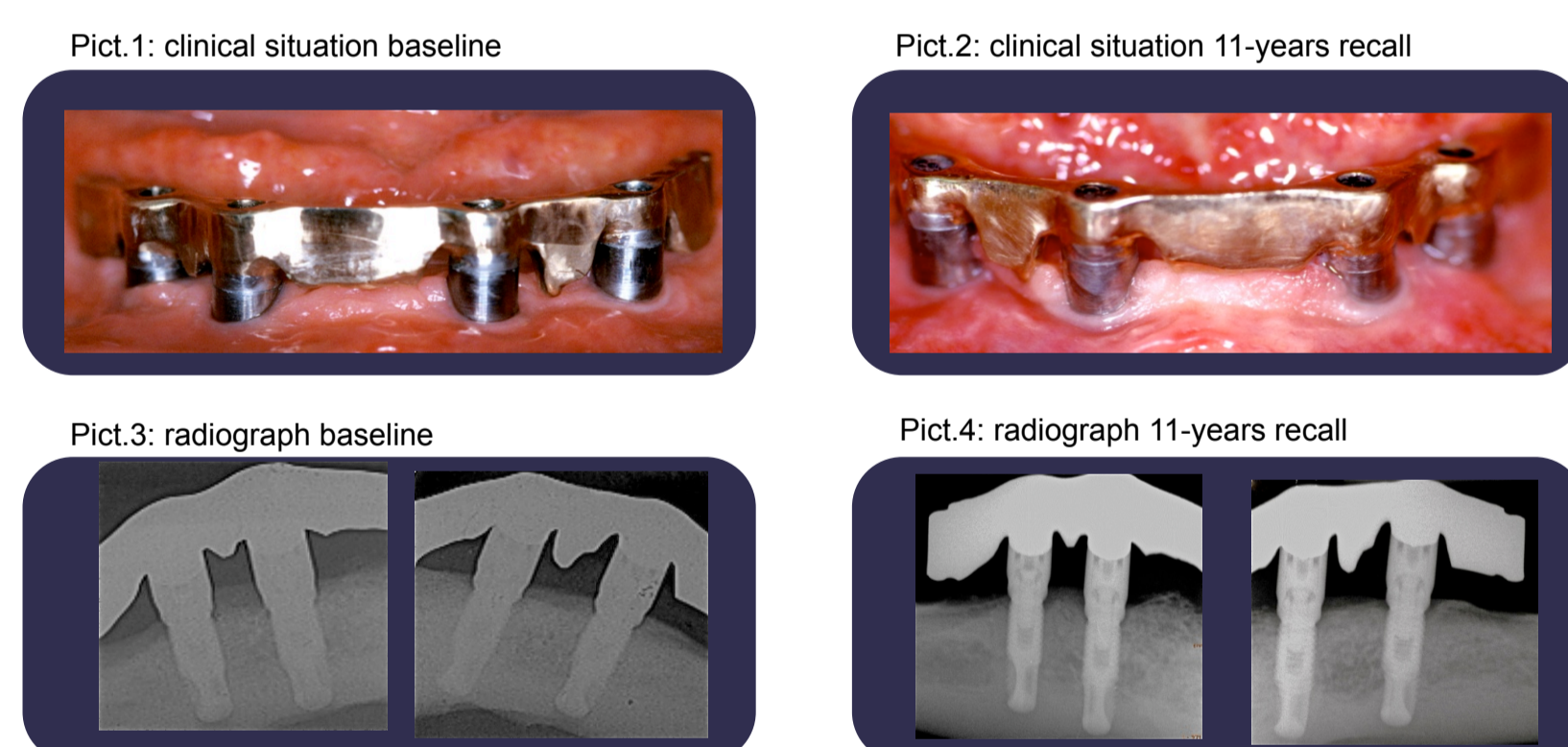
Ten patients were treated with **four** machined-surface implants (**Brånemark**, n=40) **each**.



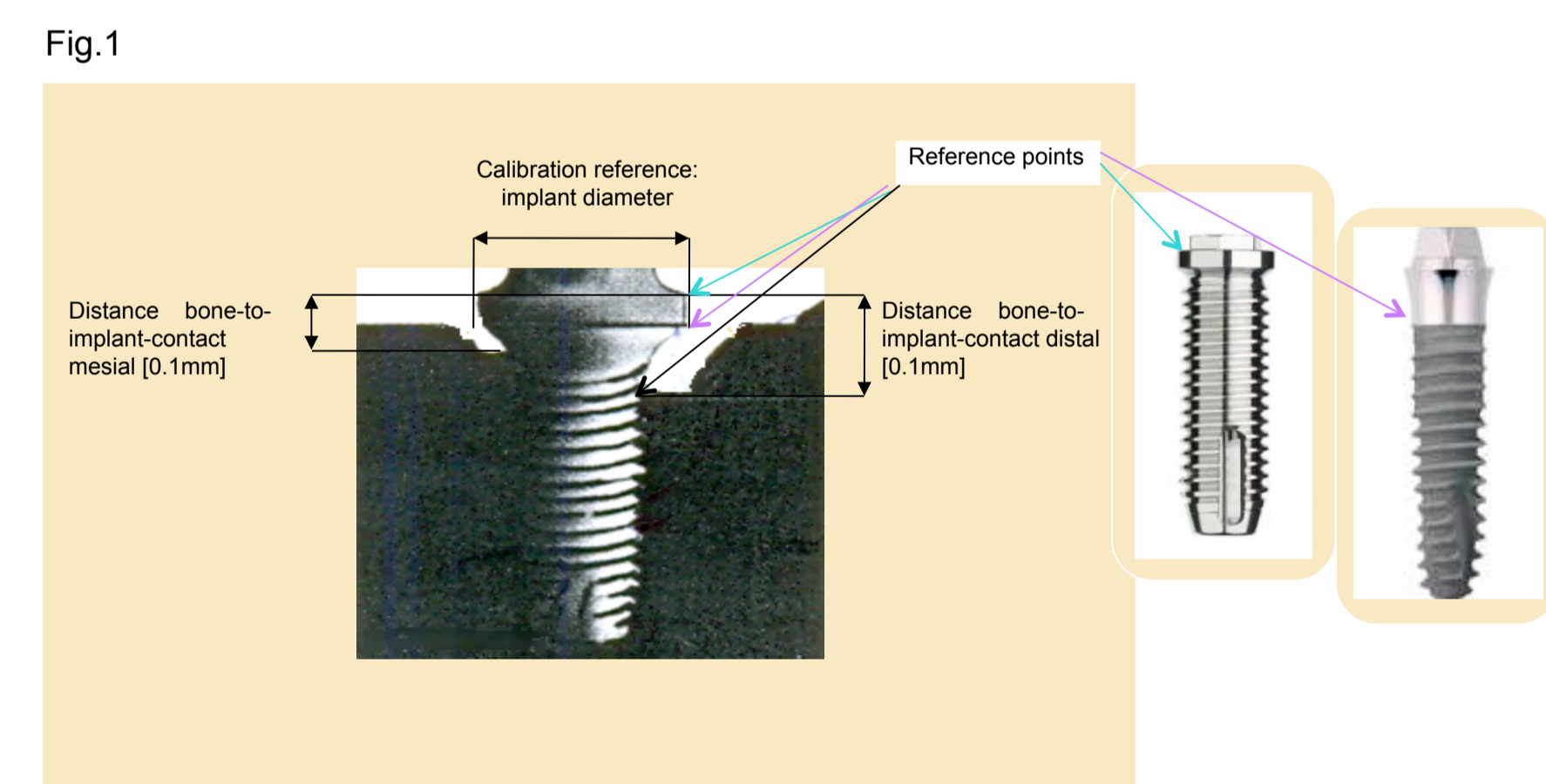
Ten patients were treated with **four** rough-surface implants (**Xive**, n=40) **each**.



The implants were **early loaded** with **individual bar retained overdentures** (Pict.1 and 2). All patients were treated by the same surgeon and prosthodontist. Clinical and radiographic examinations were conducted at the time of implant loading (baseline) and annually up to seven years in function (Pict.3 and 4).



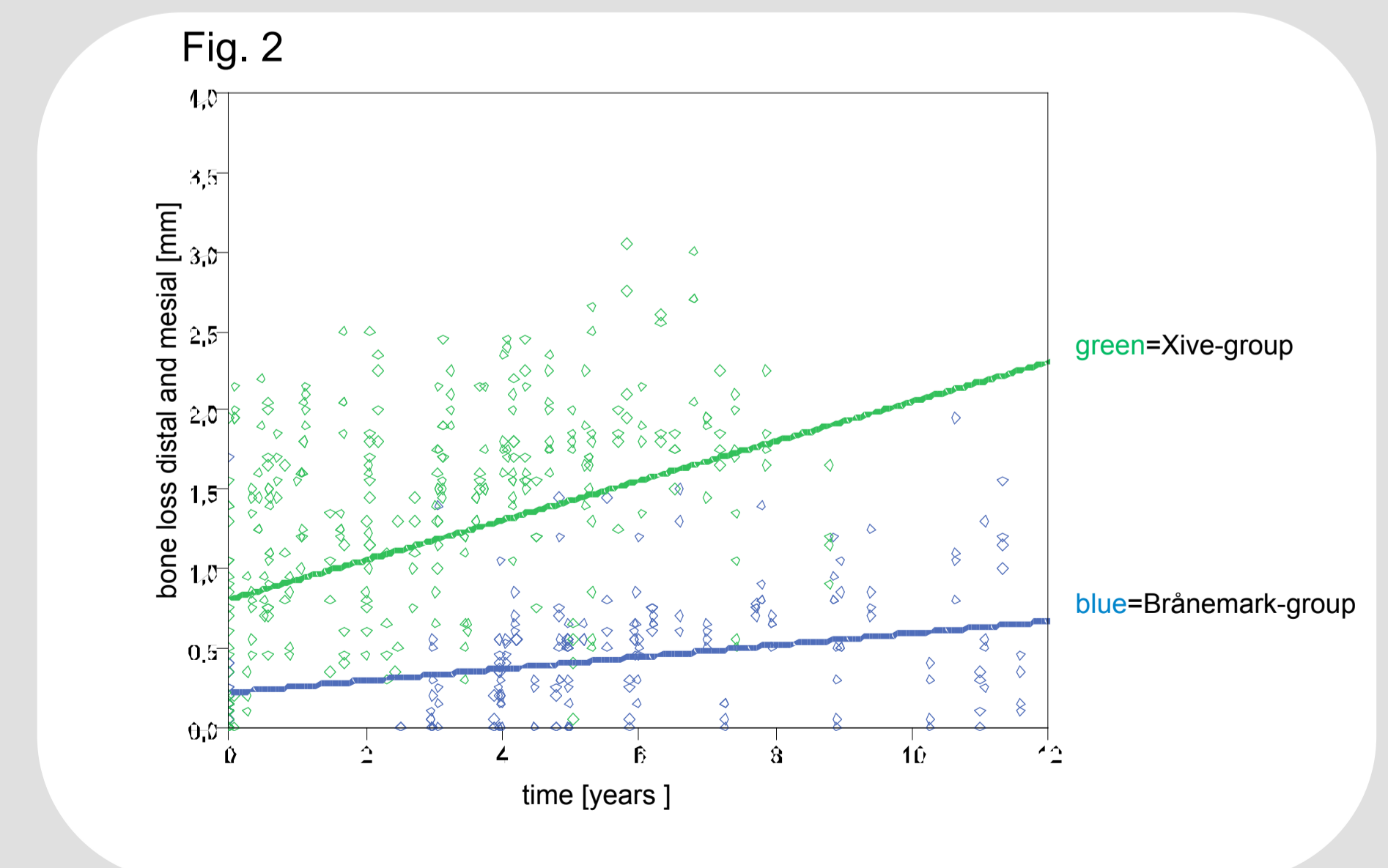
Measurements to the nearest 0.1mm were taken at the mesial and distal site and average values were calculated for each implant (Fig.1)¹. The two implant groups were compared by means of t-tests.



Results:

The study population can be split up into 5 men (25%) and 15 women (75%) with an average age of 61.6 years at date of implant loading. A total 79 of 80 implants integrated successfully, n=1 Brånemark implant failed three weeks after implant insertion.

The average baseline-measurements are 0.21mm in the Brånemark-group and 0.86mm in the Xive-group and show a statistically significant difference of $p < 0.003$. Measurements revealed, that the **annual bone-loss** around the **Brånemark-implants** is **0.04mm in comparison to 0.12mm** around the **Xive-system**, which even means a statistically highly significant difference of $p < 0.001$ (Fig.2).



Conclusion:

Both of the implant systems are clinically satisfying. Thus, the Brånemark-group shows a better radiological performance than the Xive-group.

References:

1. Kim JH, Kim YK, Yi YJ, Yun PY, Lee HJ, Kim MJ, Yeo IS. Results of immediate loading for implant restoration in partially edentulous patients: a 6-month preliminary prospective study using SinusQuick EB implant system. J Adv Prosthodont 2009 Nov;1(3):136-139