

Periimplant biospectrum and tissue reactions comparing conical vs. tube in tube connection.

A randomised, 36 month prospective, in vitro study using Camlog and Conlog Implants in a splitmouth Locator setup - 24 Month Results

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Objectives

Many authors have postulated that a conical implant-abutment connection is superior to other connection geometries in terms of micro leakage and its consequences. The purpose of this prospective, ranomized, in vivo, split mouth study was to compare the physiological and technical differences in the Implant-Abutment interface over a period of xxx 36 month. To exclude the majority of bias factors associated with an in vivo study we designed a clinical setup that delivers the highest possible homogenous microclimate around the implants for reproducible and comparable data.

Materials and Method

Our study setup was chosen to gain detailed information on technical as well as physiological differences and their consequences of the two connection geometries.

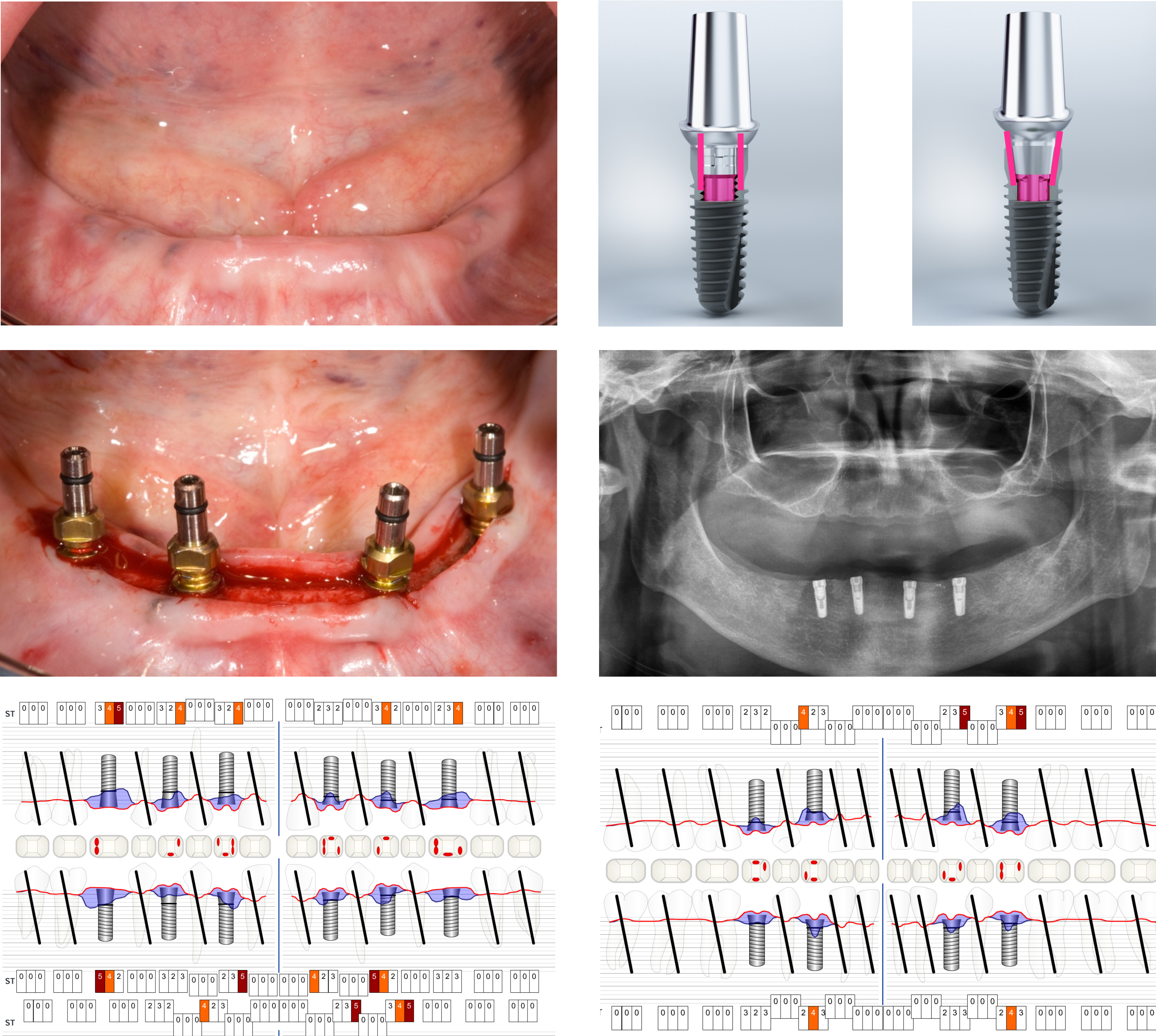
Study Set Up

- **Edentulous** patients matching the inclusion criteria are included in the present study
- **Pre operative** the Quality of Life Index **OHIP-14** is documented.
- **52 Implants** (Camlog and Conelog) were randomly placed in edentulous upper and or lower jaws and are treated with a **Locator** fixed full denture.
- A minimum of two Implants are placed and randomly divided alternately in Camlog and Conelog Implants.
- After a healing period of 4 month the Implants are loaded with a Locator Abutment and connected to the full denture.
- **6 month** after the the functional loading the **Mombelli bleeding index**, probing depth and the **OHIP-14** score is documented.
- **12 month** after the functional loading the **bleeding index** is evaluated.
- **24 month** after the functional loading the **probing depth**, **bleeding index** and subgingival **bacterial** colonization was analysed using the micro-Ident(®) test (HAIN-Diagnostik, Nehren, Germany)

Technical complications such as **abutment loosening**, **mechanical wear** of the matrices and **fractures** of any prosthetic parts where evaluated during the recall apointments.

Study Design and Status

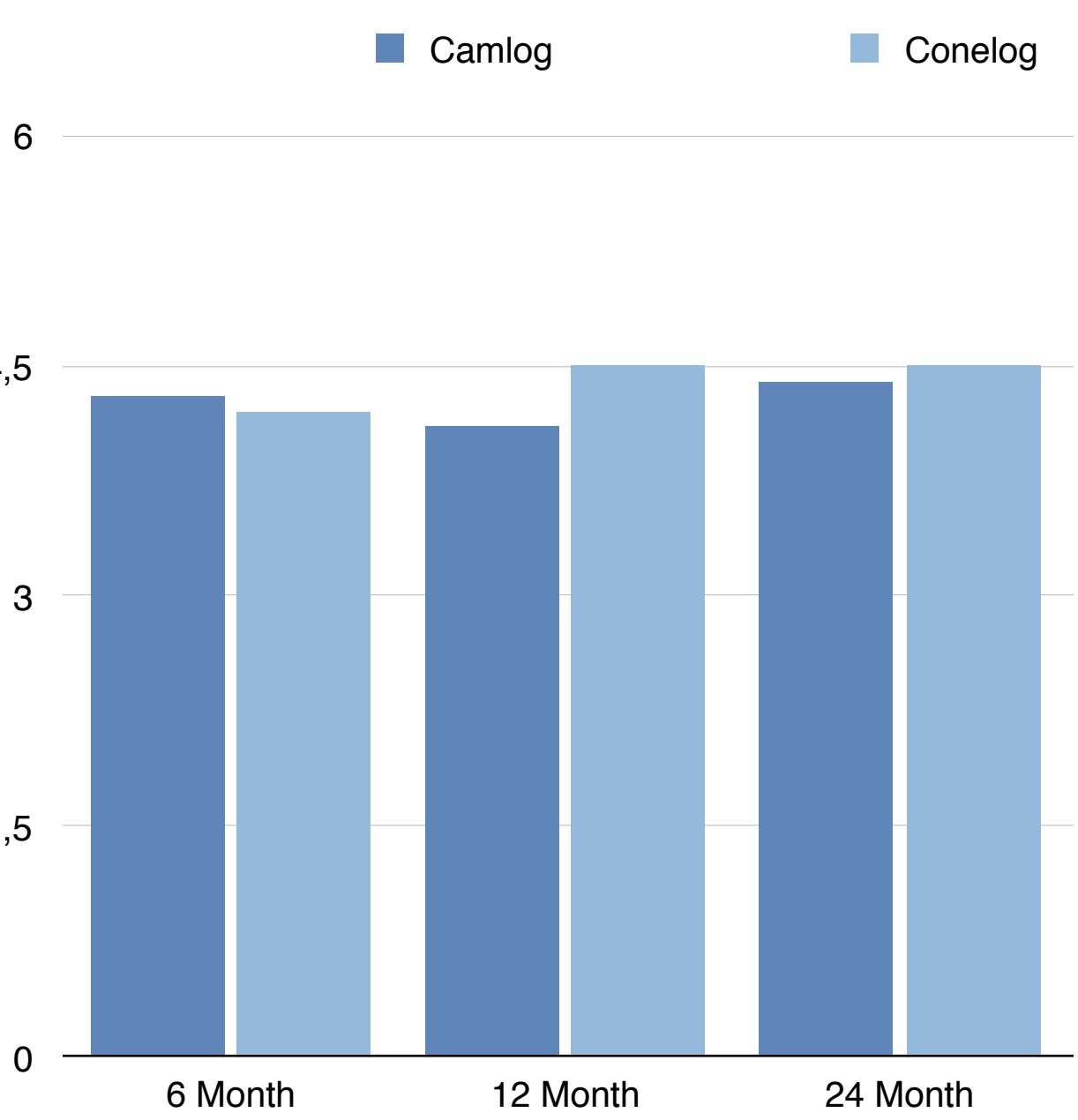
Pre operative	6 mo post loading	12 mo post loading	24 mo post loading
OHIP-14	OHIP-14	bleeding index	tech. complications
	bleeding index	tech. complications	bleeding index
	Probing Depth	Probing Depth	Probing Depth
			Bacterial Load
	n 52 Implants	n 24 Implants	n 18 Implants
	ongoing	ongoing	ongoing



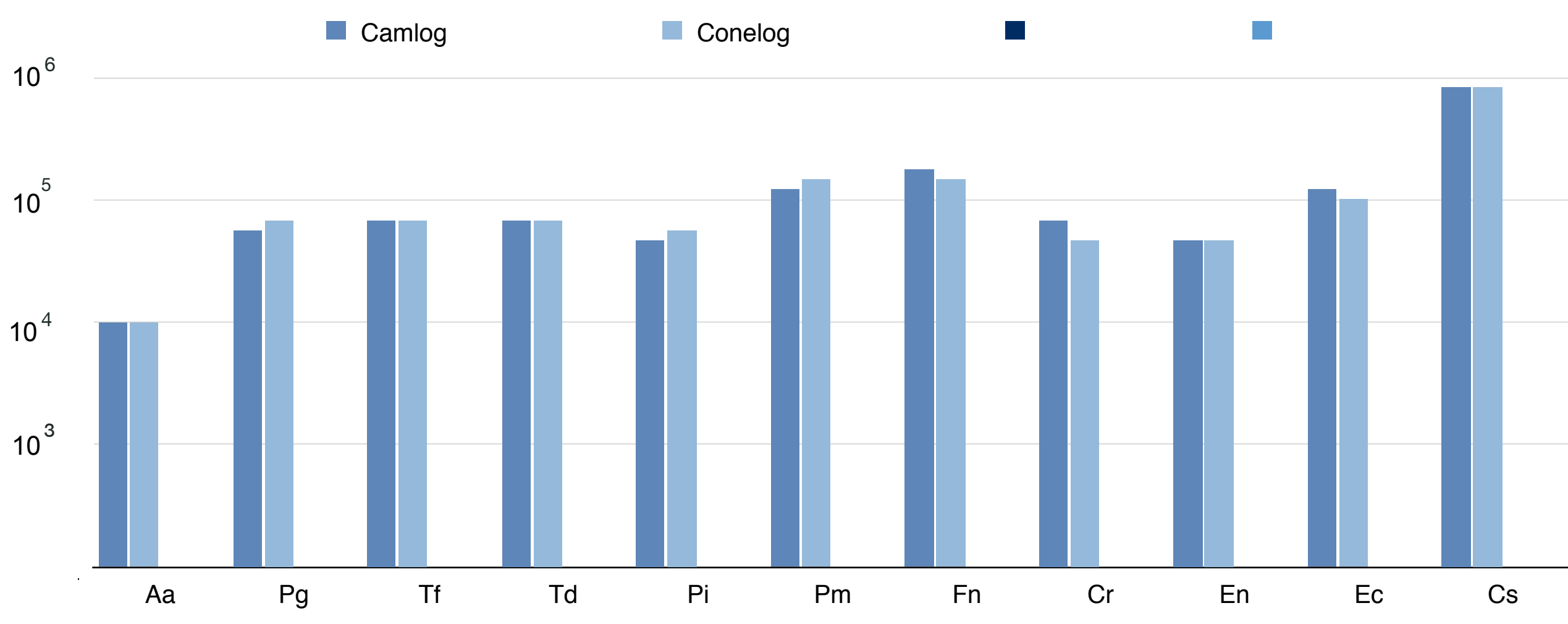
Technical Complications after 24

- Camlog**
- Conelog**
- 0 fractures
 - 1 fractures
 - 0 loosening matrices
 - 0 loosening matrices
 - 3 changing matrices
 - 2 changing matrices
 - 4 abutment loosening
 - 0 abutment loosening

Probing Depth after 6, 12 and 24 Month



Bacterial Load after 24 Month (< 10⁴ is under the detection limit)



Results - 24 month

The **Bleeding Index** showed no significant differences in-between the two groups but rose slightly over the ime of 24 month

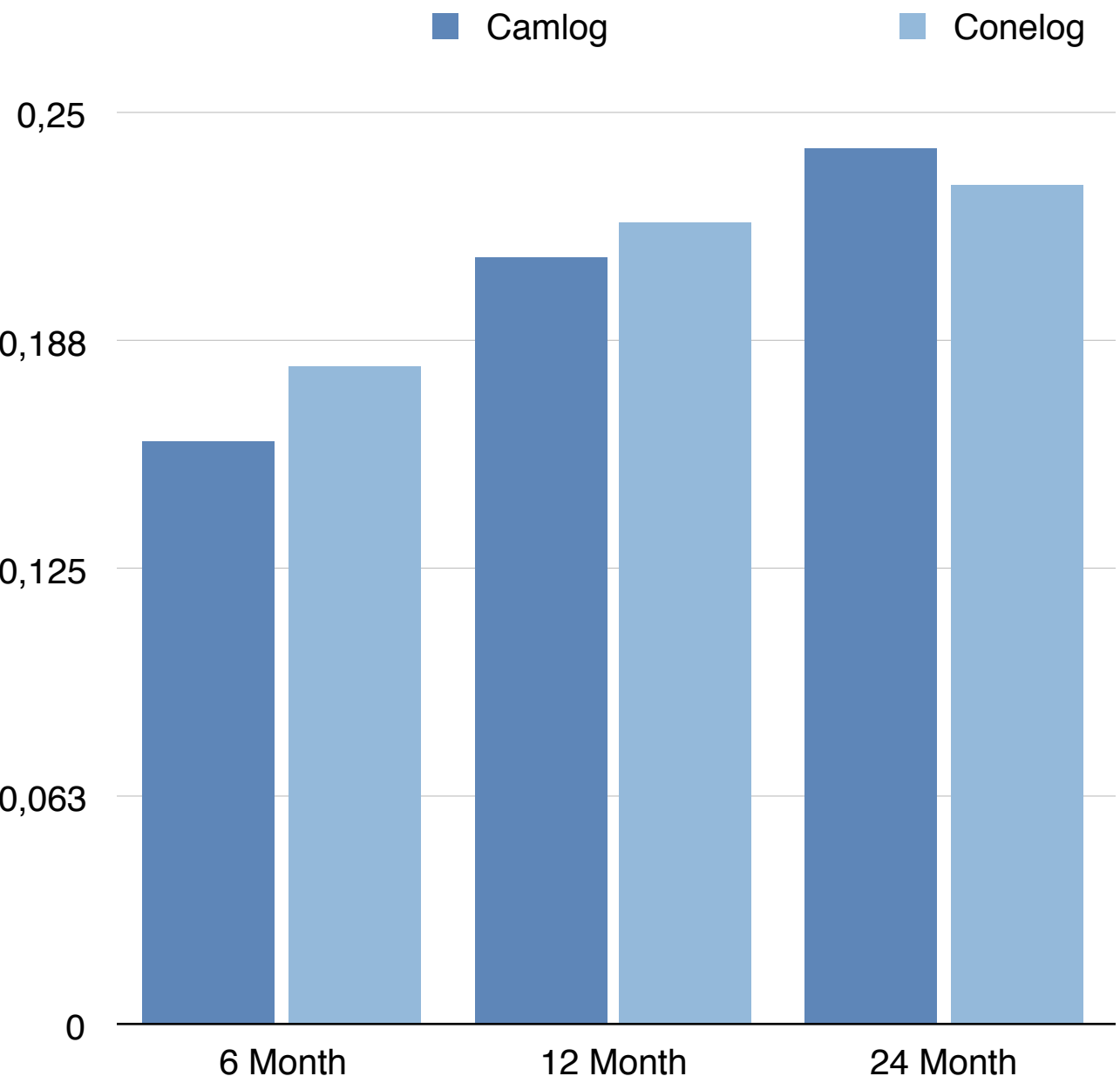
The **Bacterial Load** showed no significant differences in-between the two groups

The **OHIP 14** Score showed a significant difference pre-an post OP, the overall Quality of Life index fell from 19,4 to 8,2

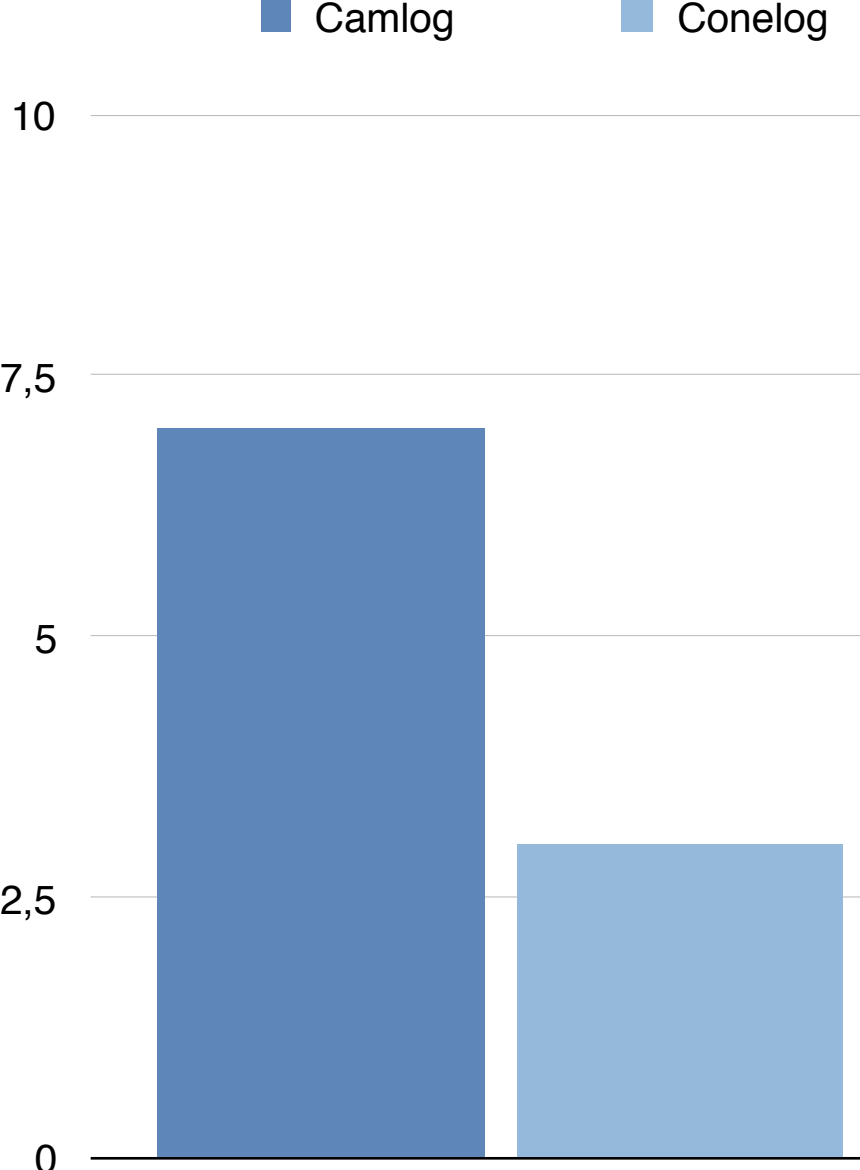
The **probing depth** increased slightly but showed no significant difference in both groups

Technical Complications occurred more often with the Tube in Tube Connection, mainly loosening of the Abutment which could be handled easily, no majorr differences in other technical compilations

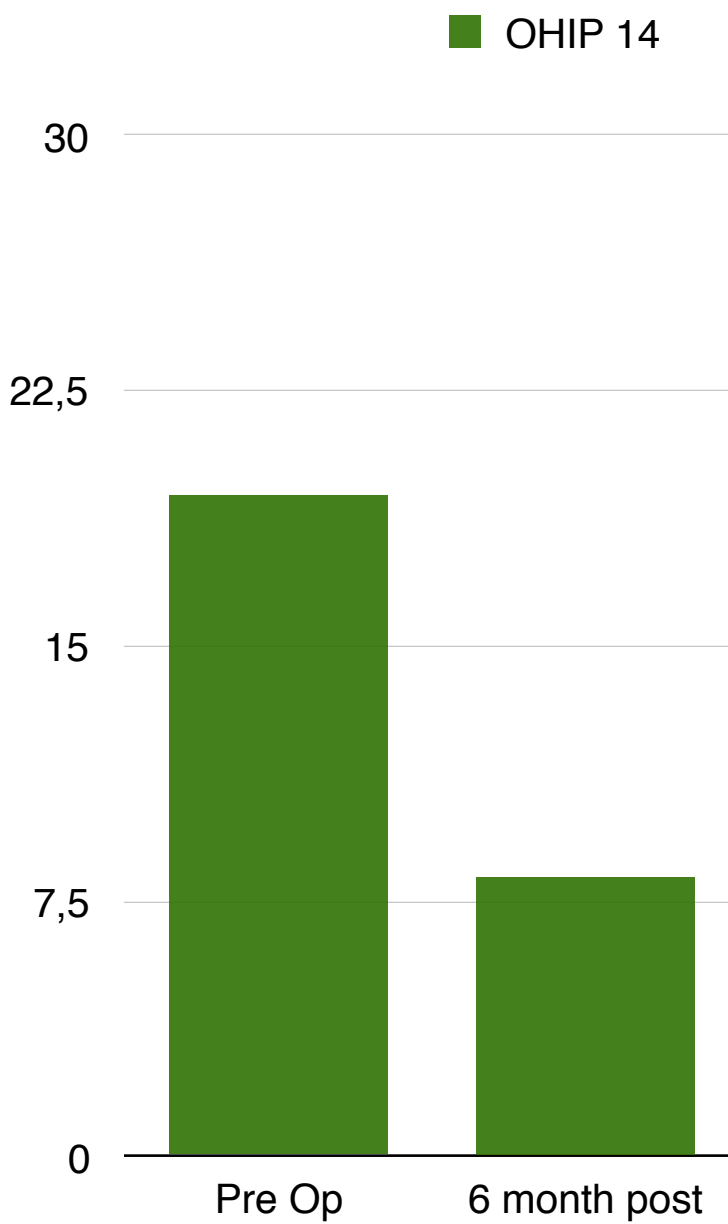
Bleeding Index after 6, 12 and 24 Month



Technical Complications



OHIP 14 Pre- and Post OP



Conclusion

Within the data collected so far in this study there seems to be no correlation between the connection geometry and the bacterial load around the two type of Implants. There was also no significant difference in the physiological parameters screened. The only significant difference was seen in the number of Abutment loosening, probably due to the fact that the holding force of the Locator Abutment in the Tube in Tube connection relies here on the preload of the screw whereas in the conical connection group this holding force is supported by the force offered through the conical fit and „cold welding“ between the implant and the Locator abutment.