

Survival of molar teeth in need of complex endodontic treatment

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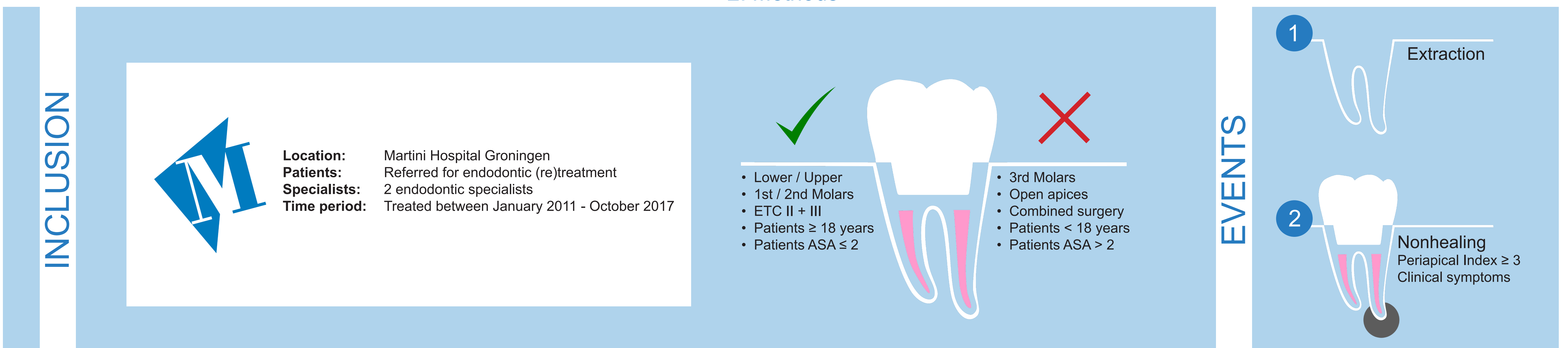
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1. Objective

"Is this tooth really worth saving?"

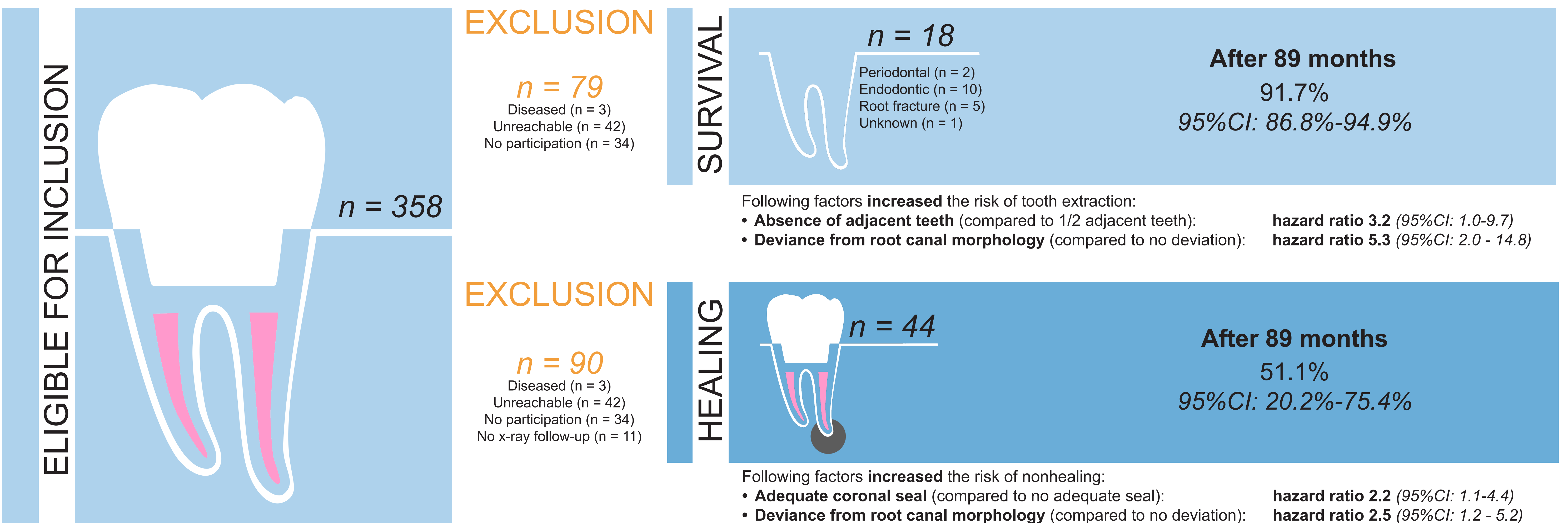
It is a common question in the dental practice asked by our patients. Especially when a tooth is in need of complex endodontic (re)treatment, other treatment options should be considered. To address this question, it is important to know what the tooth survival and endodontic success is of these 'worst case scenarios' for our patients. In this retrospective study the survival of molar teeth and endodontic success after complex endodontic treatment up to 89 months was evaluated.

2. Methods



All endodontic procedures were performed under the microscope using a rotary file system. Canals were irrigated with a 2% sodium hypochlorite and 17% EDTA solution and obturated with warm guttapercha and an epoxy resin based sealer. Patients eligible for inclusion were invited to attend the clinic and informed consent was obtained. When patients were not able to attend, information was obtained via their general practitioner. Clinical (percussion, palpation, probing) and radiographic examinations were done. Primary endpoint was tooth extraction and secondary endpoint endodontic healing. Restorations were scored using the FDI criteria (functional, esthetic and biological). Patient- (caries risk, bruxism), tooth- (adjacent teeth, jaw), endodontic- (Endodontic Treatment Classification (ETC), deviance root canal morphology, radiolucency) and restoration-related (type, coronal seal, cusp coverage) factors were noted. The presence of a periapical radiolucency was independently scored by 2 researchers. Kaplan-Meier survival and success rates were calculated and the prognostic influence of the various factors was tested in a Cox-regression model. Fisher-Freeman-Halton tests were done to compare the FDI scores between direct and indirect restorations. A *p*-value of 0.05 was considered significant.

3. Results



Of the **direct restorations**, 99.2% were made of composite and 0.8 % of amalgam and 75.6% had 3 or 4 surfaces involved in the restoration. For the **indirect restorations**, 14.3% zirconia, 29.9% glass ceramic and 55.8% porcelain-fused-to-metal (PFM) were used and 99.3% had a full contour crown. Indirect restorations had a significant higher biological and esthetic FDI score when compared to direct restorations. Functional FDI scores were not significantly different.

5. Conclusion

After 89 months, cumulative survival of molars in need of complex endodontic treatment was 91.7 % [95 % CI: 86.8 %–94.9 %]. Within daily clinical practice, the dilemma of performing a complex endodontic (re)treatment or to explore other treatment options for molar teeth in need of reintervention is still urgent. Tooth survival of molar teeth with complex endodontic (re)treatment seems satisfactory up to 89 months.

