

An Evaluation of Implant Complications at the Edinburgh Dental Institute to Aid Service Planning for the Ageing Population in NHS Lothian.

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Introduction

In Scotland, over 30,000 frail older adults live within nursing or care homes and a proportion of older adults are entirely housebound¹. The Restorative Department at the Edinburgh Dental Institute (EDI) currently manages Lothian's NHS implant-related complications. However, it is the Public Dental Service (PDS) who regularly manages a large proportion of the ageing population, particularly those requiring domiciliary visits.

With the increase in dental implants, it is inevitable that dentists working within the PDS will begin to see more frail older patients with implant-related complications. However, due to limited exposure to dental implants, they may lack the confidence and training to manage these complications.

This retrospective study aims to compare the complications, survival² and success rates^{3,4} of dental implants in patients aged over 65 years with those under 65 years old, placed at the Edinburgh Dental Institute to aid future service planning for the ageing population in NHS Lothian.

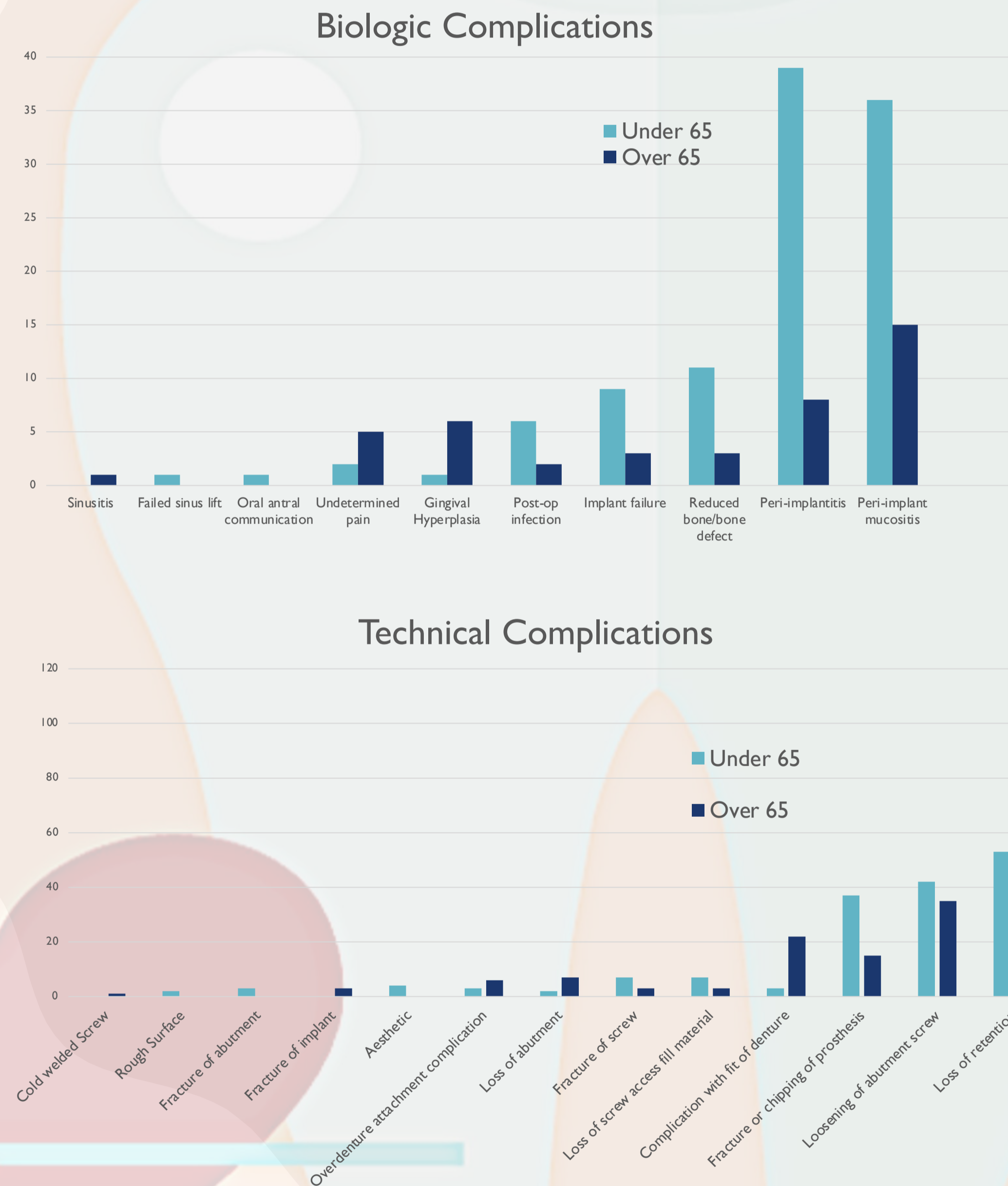
Methods

Data was collected retrospectively from patients notes for all implants placed in the EDI from start of November 2010 until end of October 2014. With a mean follow up time of 7.7 years.

All complications were recorded from the date of implant placement until the end of October 2019, excluding technical complications associated with the temporary prosthesis. Information was recorded on patient demographics, medical history, social history, implant details, prosthesis type, implant complication (biologic, technical, minor, medium, major)⁵, treatment provided, outcome, follow up and if failure (early/late)⁶ occurred.

Results

Preliminary results for the 232 patients recorded showed that there were 540 implants placed over the 4 year period. The data showed that 26.3% (n=61) of these patients were over 65 years old, making up 25.1% (n=136) of the implants placed.



Figures 1 & 2 Biologic and Technical complications for both age groups.

The over 65 age group experienced significantly more technical complications than the younger age group, with loss of retention being the most common complication. Most technical complications were in the minor category for both age groups, with 80.3% in the under 65s and 69.2% in the older group. Only 2.6% of technical complications were classed as major in the over 65s. There was an overall survival rate of 93.3%, with a failure rate of 5.9% in over 65s and 6.4% in under 65's. Almost equal numbers of early and late failures occurred in under 65's, however in over 65's, 66% of failures occurred late, following prosthesis loading.

Survival and Success of Implants

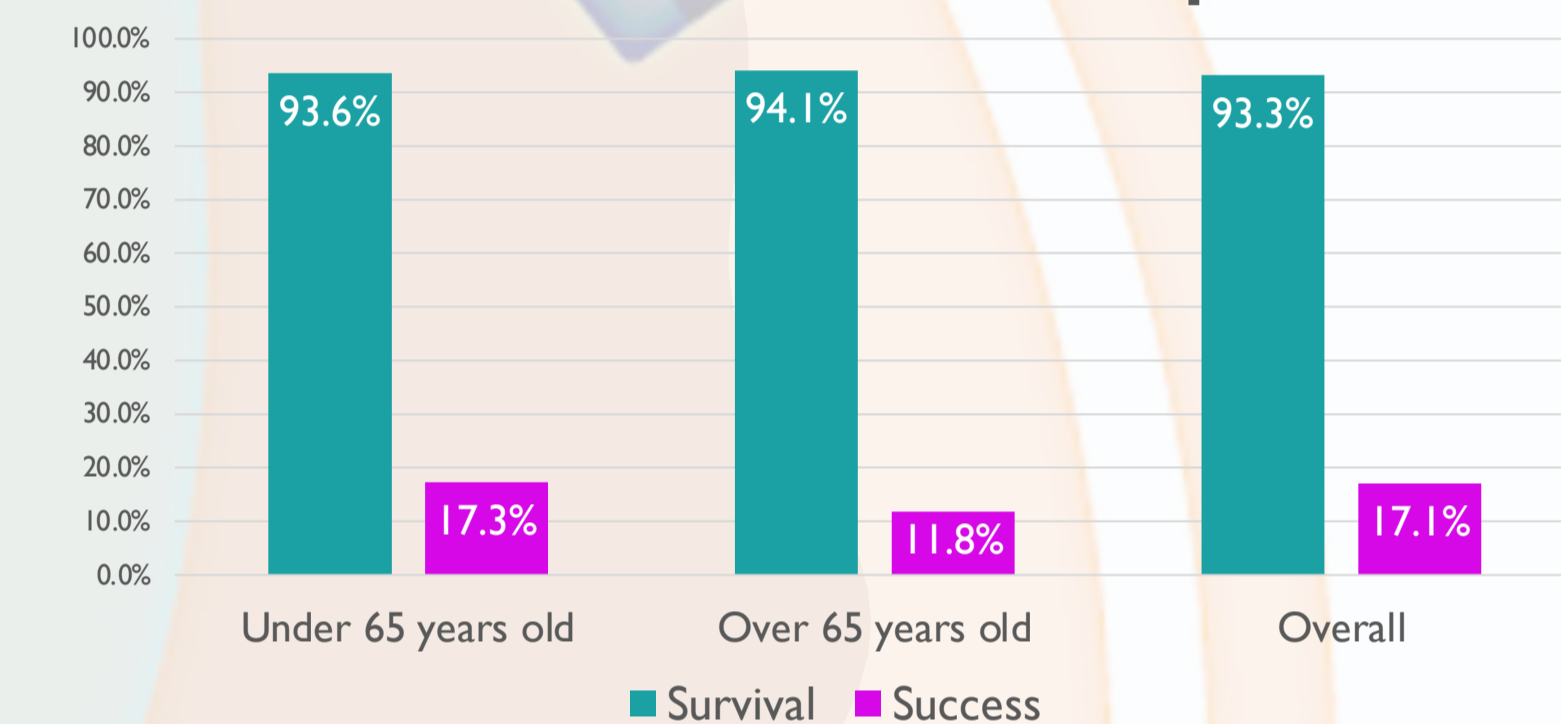


Figure 3 shows survival and success rates, where success is an implant free of complications over the observed period and survival is the implant and fixed prosthesis present in the mouth independent of biological and/or technical complications.

Discussion

There were significantly higher technical complications in the over 65 year age group ($p < 0.05\%$), with the majority of complications presenting at a minor level (61.8%) and mainly appeared to be due to the loss of retention of removable implant supported prostheses. This highlights the most frequent types of implant related complications which could help focus training in these areas.

Overall, survival rates were good, however the results suggest that success rates are much lower. Patients may therefore experience multiple complications over the lifespan of the implant which require intervention. With additional training, many of the minor complications could be managed by dentists in the Public Dental Service. This would potentially reduce the need for travel to clinics, increasing accessibility of care for this potentially vulnerable patient group.

It is worth bearing in mind that as patients become older and potentially less dextrous, oral hygiene may become more difficult and subsequently, biologic complications such as peri-implant mucositis and gingival hyperplasia could become more of an issue.⁷ Education and training of care givers may help prevent certain complications from arising or indeed flag these at an earlier stage.

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