

A retrospective cohort study looking at the prosthetic appliance provided for patients with a Cleft Lip and/or Palate diagnosis at a single centre.

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Introduction

Cleft lip and/or palate (CLP) malformation is a result of a disruption in the fusion of the maxillary with the frontonasal processes. This results in a cleft of either the lip, alveolus, palate or any combination of each. The distribution of this is outlined in figure 1.

Sub-category of cleft diagnosis	Frequency amongst cleft patients
Cleft Palate (CP)	45%
Cleft lip (CL)	23%
Unilateral Cleft lip and palate	22%
Bilateral cleft lip and palate	10%

Fig1. A table to show the main sub-categories of cleft diagnoses and their frequency in the UK (CRANE, 2019).

Unfortunately patients with congenital cleft defects suffer from an array for dental anomalies. Examples of these include Hypodontia, Microdontia, ectopic teeth, supernumeraries, crowding of the mixed and permanent dentition, enamel defects and a reduced sulcus depth (Haque & Alam, 2015). Some of these are shown in figure 2 and can pose challenges to restorative rehabilitation.

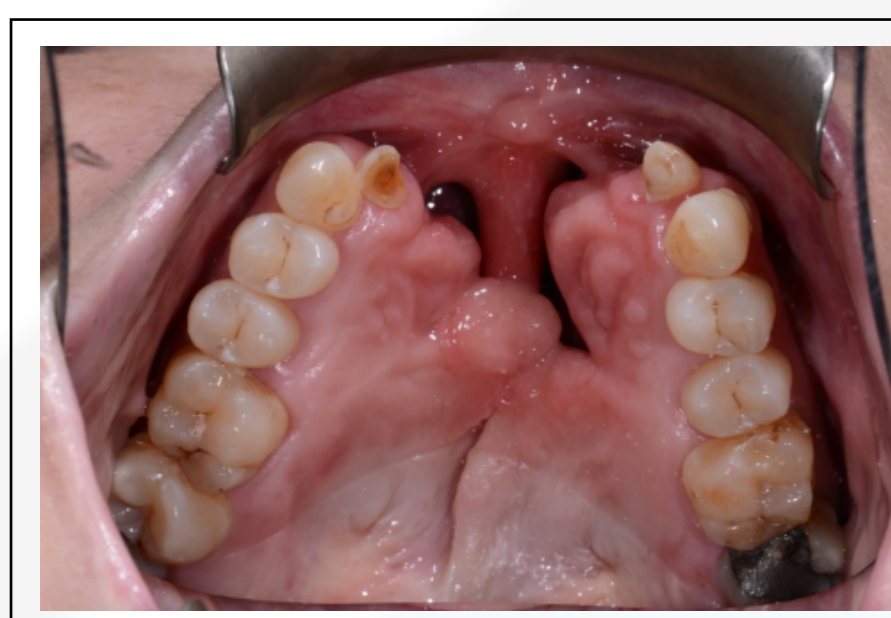


Fig 2. An image of a patient with a bilateral cleft of the palate and alveolus. The patient consequently has hypodontia in the cleft region as well as a fistula between the intra-oral environment and the nasal structures.

Mossey et al (2009) found that services and treatment protocols can vary significantly amongst different countries. This study will aim to analyze the restorative treatment modalities that the West Midlands Cleft Team implemented. Understanding these treatment patterns may help guide the provision of resources towards restorative cleft services. It will also contribute to the development of local guidelines.

Aim

To look at the relationship between a patient's Cleft diagnosis and the prosthesis they were rehabilitated with.

Population & Sampling

This study focuses on all the CLP patients that were referred to the west midlands cleft team. Adopting a total population sampling.

Null hypothesis

There is no relationship between the diagnosis that a CLP patient may have and the type of prosthesis they will receive.

Method

All files of patients referred to a single site between 2015-2017 were retrieved using an electronically tagged marker on the electronic patient records.

A tally of the treatment options provided were made against each specific cleft diagnosis.

Four categories were used as defined by the cleft development group, 2015. Being Cleft lip (CL), Bilateral cleft lip and palate (BCLP), Unilateral cleft lip and palate (UCLP), Cleft palate (CP).

This was tabulated onto an excel spreadsheet held in a secure server. Password encryption was used to protect the document.

A total of 161 patient records were included in the study.

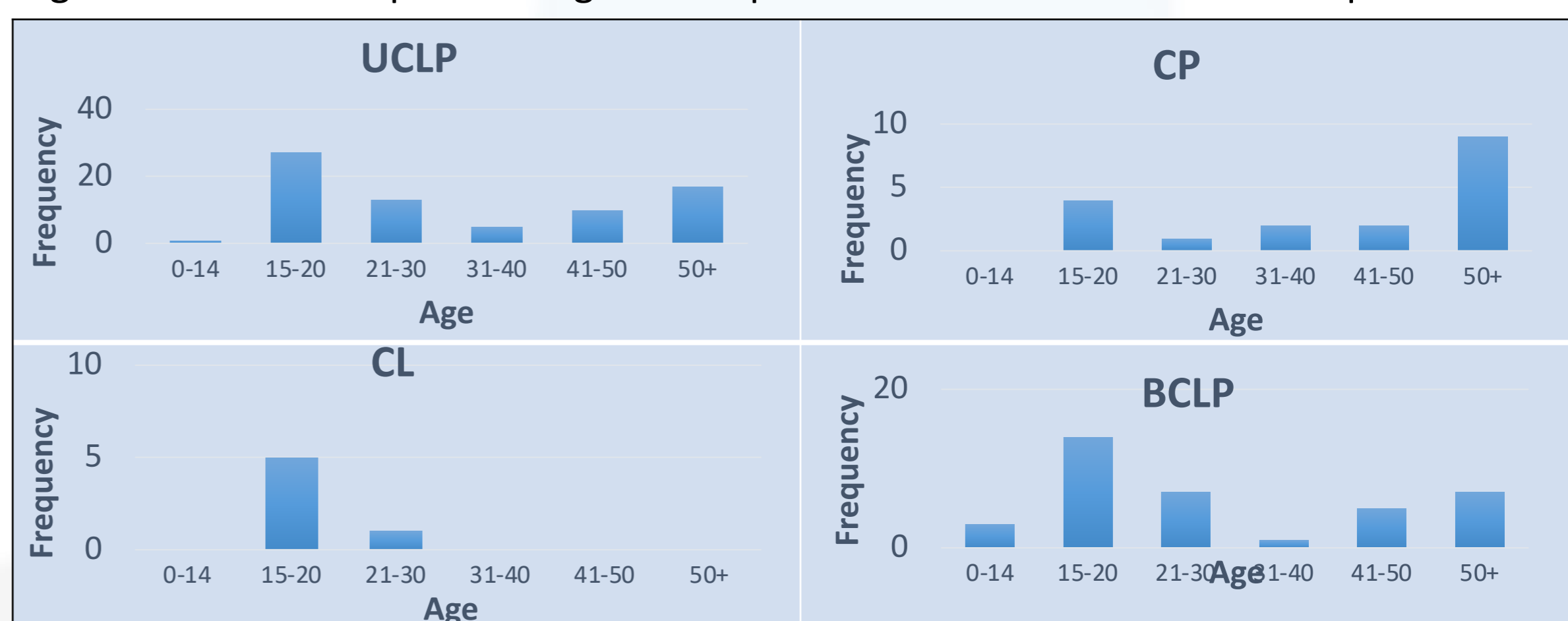
Chi Square statistic with Yates correction was used to determine statistical significance at a 95% Confidence interval.

References

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- Mossey, P.A., Little, J., Munger, R.G., Dixon, M.J. and Shaw, W.C. (2009). Cleft lip and palate. *The Lancet*, [online] 374(9703), pp.1773–1785. Available at: <https://www.sciencedirect.com/science/article/pii/S0140673609606954> [Accessed 21 Oct. 2020].
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Results

Fig3. Distribution of patient's age at first presentation to the restorative department.



BCLP and UCLP patients presented at similar ages to the Restorative department. CP patients commonly presented over the age of 50. All CL patients were under 30 at first presentation.

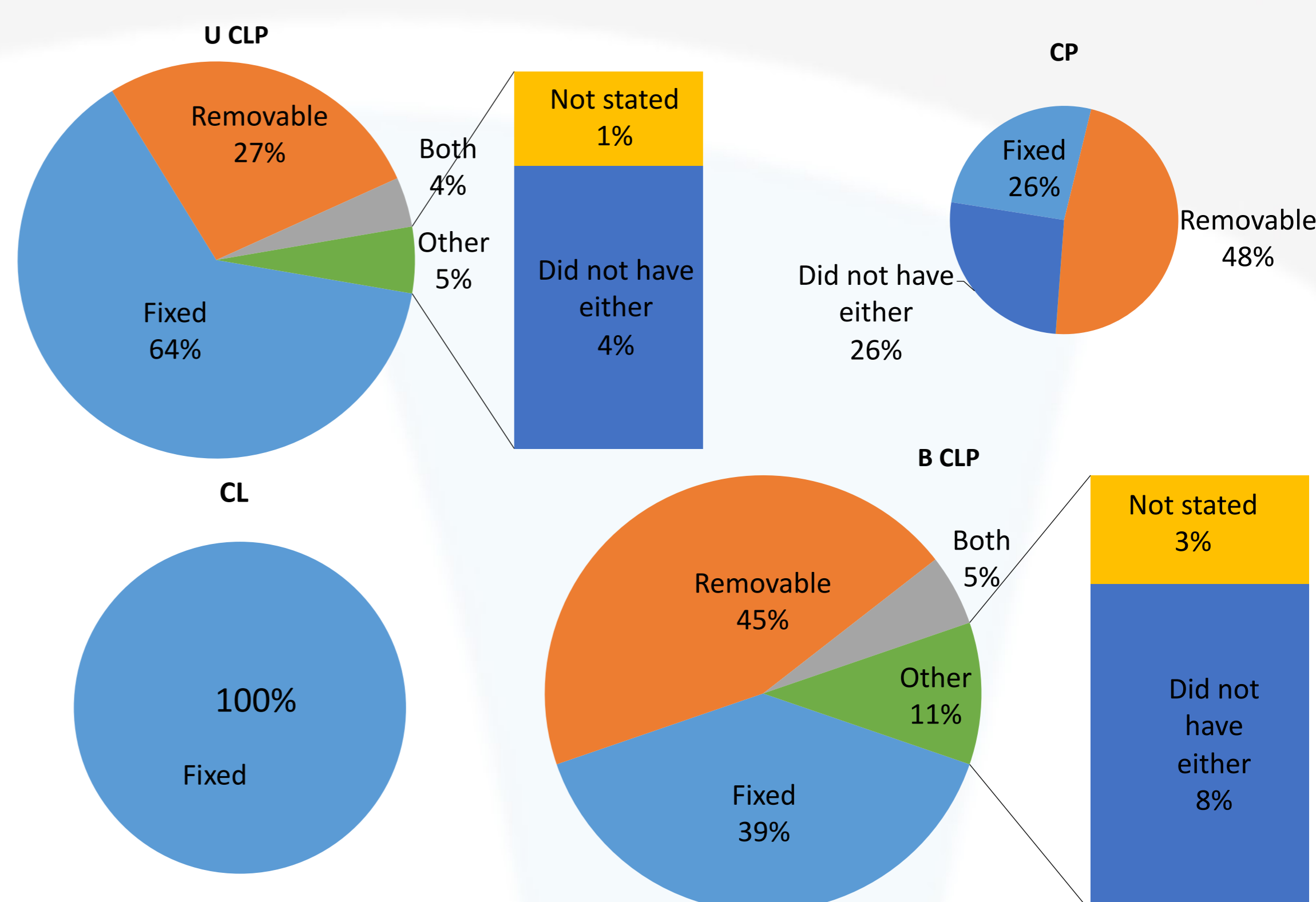


Fig4. type of prosthesis used to rehabilitate patient by diagnosis

- Prosthetic rehabilitation was more likely to be needed in patients with a cleft involving the alveolus compared to patients that had an isolated cleft in the palate or a cleft lip.
- UCLP patients were more likely to be provided with a fixed prosthesis where as BCLP patients were more likely to be removable. Chi Square statistic with Yates correction found this to be statistically significant ($P=0.04$) at a 95% confidence interval.
- Resin-bonded bridges were the most commonly provided fixed prosthesis (34%)
- Implant supported bridges (17.5%) were favoured more than conventional bridges (8.7%).
- 14.3% of patients required composite augmentation. Where as 1.8% were provided with ceramic veneers.
- Only 19% of patients were rehabilitated with the use of dental implants.

Discussion

Conservative treatment options such as Resin bonded bridges and composite augmentation were more commonly prescribed when compared to destructive alternatives such as conventional bridges and ceramic veneers.

BCLP patients frequently present with an Oro-nasal communications and so would more likely be restored with a removable prosthesis to obturate the fistula.

Conclusion

- There appears to be a relationship between the CLP diagnosis and the choice of restorative treatment provided.
- Patients with a cleft involving the alveolus are more likely to require a prosthesis.
- UCLP patients are more likely to be provided with a fixed option, where as BCLP were more likely to require a removable prosthesis.

Acknowledgements West Midlands Cleft team