

IN BRIEF

- Caries is the main reason for the extraction of first permanent molars in children.
- Children who are attending dental hospitals for extraction of first permanent molars tend to be older than the optimal age for achieving space closure.
- There is a need for guidelines advising primary care dentists when to refer children for the extraction of first permanent molars.
- This study highlights the need for extensive prevention programmes targeted at those children with high caries risk.

Extraction of first permanent molars

Extraction of first permanent molar teeth: results from three dental hospitals

S. Albadri,¹ H. Zaitoun,² S. T. McDonnell³ and L. E. Davidson⁴

ABSTRACT

Objective

To evaluate and compare the reasons for and pattern of extraction of first permanent molars (FPMs) in three UK dental hospitals.

Design

Prospective multicentre study.

Setting

Hospital.

Subjects

Three hundred children attending Manchester Dental Hospital, Liverpool Dental Hospital and Charles Clifford Dental Hospital (Sheffield) who required extraction of at least one FPM.

Result

The mean age in months was 129 (SD 22.7), 139 (SD 29.4), and 133 (SD 26.8) for Manchester, Liverpool and Sheffield respectively. Forty-five percent and 48% of children had four FPMs extracted at Manchester and Sheffield respectively, compared to 25% in Liverpool. The main reason for extraction was caries with poor prognosis (70%); molar incisor hypomineralisation was the reason for extraction in 11% of cases. General anaesthesia was the main anaesthetic method used in 77%, 55%, and 47% of cases in Manchester, Liverpool and Sheffield respectively. Sixty-eight percent of cases had not received previous treatment for the FPMs and 5% had fissure sealants detected. Forty percent of children had had previous extractions.

Conclusion

The children who are attending the hospitals for extraction of FPMs tend to be older than the recommended age for achieving spontaneous space closure. This study highlights the need for extensive prevention programs targeted at those children with high caries risk.

EDITOR'S SUMMARY

This interesting study by Albadri *et al.* provides an important snapshot of the circumstances surrounding extraction of first permanent molars at three dental hospitals in Manchester, Liverpool and Sheffield. It investigated the reasons for and patterns of extractions and also looked at any previous treatment the children may have had.

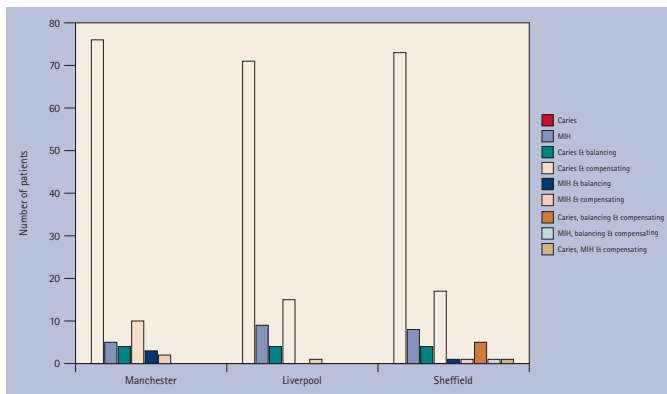
The results showed that the main reason for extraction was caries with poor prognosis, that the mean age of the children was older than the recommended age for extraction of first permanent molars, that 68% of children had had no previous treatment on these teeth and that 40% had had previous extractions. Taken together, these findings paint a worrying picture. As the authors point out, the majority of children requiring extraction of carious first permanent molars have poor oral health and it is likely that many of the children in this study could be considered to be at high risk of caries. However, the results show that very few appear to have been given preventive treatment – only 5% had any evidence of the use of fissure sealants, for example. In addition, the fact that many of the children were older than the recommended age for extraction of 8–10 years old means there is an increased likelihood that these patients will not achieve space closure. The authors suggest that this may be due delayed referral of these patients by GPs because of lack of national guidelines on the treatment of first permanent molars. It would be interesting to investigate whether this is indeed the case.

Overall, this paper highlights once again the importance of preventive dental strategies for children at high risk of caries. By adding to this body of evidence, we are hopefully a step closer to the referral guidelines and extensive prevention programmes that the authors conclude are needed.

The full paper can be accessed from the *BDJ* website (www.bdj.co.uk), under 'Research' in the table of contents for Volume 203 issue 7.

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Journal Editor

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The reasons for extractions of first permanent molars in the three centres

FULL PAPER DETAILS

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AUTHOR QUESTIONS AND ANSWERS

1. Why did you undertake this research?

The extraction of first permanent molars is one of the important problems which face paediatric dentists. The first permanent molar is the most caries-prone tooth in the permanent dentition. In addition, molar incisor hypomineralisation appears to be on the increase. The guidance on the extraction of first permanent molars with poor prognosis is still based on expert opinion. This research was carried out to establish data on the pattern of extraction of first permanent molars in three UK dental hospitals.

2. What would you like to do next in this area to follow on from this work?

For future work, we would like to conduct a prospective study examining patients (16-18 years old) who had their first permanent molars extracted during childhood. This would help in providing more information on the effects of the decision of extracting first permanent molars. This could in turn provide more information for evidence-based guidelines into the management of first permanent molars. A prospective study to look at the outcomes of providing a standard preventive regime and fissure sealant for first permanent molars in children who had extractions of carious primary teeth is also under consideration.

COMMENT

The first permanent molar (FPM) is believed to be the most caries-prone tooth in the permanent dentition.¹ A significant amount of time is spent by paediatric dentists and orthodontists in treatment planning for FPMs with poor prognosis. Although there is guidance about extraction patterns,² most decisions are based on clinical experience and individual opinion.

This study evaluates the practice of FPM extractions in three centres, Liverpool, Manchester and Sheffield, with 100 cases from each centre. The mean age at referral in this study was 11 years. The 'ideal' time for FPM extractions is considered to be when the furcation of the second molars is developing, generally between 8–10 years. This results in the best contact between second premolars and molars.

Most of the extractions were carried out due to caries. There were differences in the extraction pattern between the centres with almost 50% of children having all four FPMs extracted in Manchester and Sheffield and only 25% in Liverpool. This seems likely to be related to the later mean age of referral in Liverpool at almost 12 years, when many of the children will have had second molars erupted or about to erupt.

There were some worrying results in that only a third of the carious and hypoplastic FPMs had been treated, and overall fewer than 50% of the children were regular dental attenders. Over one third of the children had previously had teeth extracted and although obviously being at high risk for caries, had seemingly not attended for dental care or been targeted with prevention such as fissure sealants.

This is a very interesting paper that highlights the issues around prevention for children and families at high risk of caries, and also the lack of guidance for GDPs about the timing of referral to specialist centres for FPMs of poor prognosis.

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