

Summary of: Incidence of symptoms in previously symptom-free impacted lower third molars assessed in general dental practice

M. J. Fernandes,¹ G. R. Ogden,² N. B. Pitts,³ S. A. Ogston⁴ and D. A. Ruta⁵

FULL PAPER DETAILS

¹General Dental Practitioner, 19 Rubislaw Terrace, Aberdeen, AB10 1XE; ²Unit of Oral Surgery and Medicine, University of Dundee Dental School, Park Place, Dundee, DD1 4HN; ³Dental Health Services Research Unit, ⁴Section of Public Health, Centre for Primary Care & Population Research, University of Dundee, Kirsty Semple Way, Dundee, DD2 4BF; ⁵Institute of Health and Society, Newcastle University, Newcastle upon Tyne, NE1 7RU
*Correspondence to: Dr Marcelo Fernandes
Email: mfernandes10@hotmail.com

Online article number E10
Refereed Paper – accepted 10 July 2009
DOI: 10.1038/sj.bdj.2009.804
©British Dental Journal 2009; 207: E10

Aim To determine the potential of a pathology-free impacted lower third molar to cause symptoms within a year and whether these symptoms can be linked to clinical characteristics, lifestyle or socio-demographic status. **Design** One-year prospective cohort study of patients registered in general dental practice in Scotland with at least one asymptomatic impacted lower third molar. **Methods** All general dental practices with panoramic radiography facilities in Tayside, Fife and Greater Glasgow (Scotland, UK) were invited to participate in the study. Orthopantomographs taken between 1995 and 2002 were reviewed and eligible patients were contacted and invited to participate. Patients were assessed in their own dental surgery by the same research dentist. In this baseline assessment, the presence of impaction was confirmed and all patients with a previous history of symptoms and/or pathology were excluded from further analysis. Clinical characteristics such as the angulation and the degree of impaction were recorded. Patients also completed a socioeconomic questionnaire. Eligible patients were re-assessed by the same research dentist one year later when they were asked about their experience of symptoms within the past year. Information was cross-referenced with patients' dental records. **Results** A total of 613 patients attended the baseline appointment. Of those, 30 (4.89%) had a history of symptoms and were excluded from the study, leaving 583 (95.10%) eligible patients. From those, 421 (69%) patients with a total of 676 lower third molars were examined one year later. 22.67% of all vertically impacted teeth examined had developed symptoms, along with 13.15% of all mesially impacted, 30.69% of all distally impacted and 6.45% of all horizontal third molars. This association was statistically significant ($p \leq 0.001$). 23.05% of all partially erupted teeth and a surprising 10.49% of all unerupted teeth were associated with symptoms during the study period. This association was also significant ($p \leq 0.001$). There was also a statistically significant inverse association between the development of symptoms and age ($p = 0.0028$). **Conclusions** The predictability that an impacted lower third molar will develop symptoms in future remains unclear. However, some clinical characteristics such as the angulation, the degree of impaction and the patient's age could be useful in predicting the likelihood of future symptomatology.

EDITOR'S SUMMARY

The desire to be able to predict the future as accurately as possible is as old as mankind. Not the sole preserve of weather forecasters, nor of mystics, fortune tellers or even stock market analysts, it is a constant challenge for us all in our daily practice. How long will a restoration last? Will that ulcer heal before the weekend? Will my wisdom tooth flair up?

We use a range of observations to try and help us in the uncertain process of prognostication, which we temper with the eye of experience and the intuition that comes with professional judgement. We employ techniques such as radiography and measure outcomes against pre-

vious data to try and get a sense of where a particular case or situation might lead, how it might develop.

Despite all this, the authors of this paper are still left with the conclusion that it is unclear whether an impacted lower third molar will develop symptoms in the future. This leaves us grappling for the best answer and perhaps leaning on external influences to try and help justify our recommendations; what is the patient's wish, are the resources available for the surgery that will be required to extract it? These are questions that tend to deflect us from the real purpose, which is to try and help those in our care by providing as much certainty as possible.

Perhaps, in view of the findings here and irrespective of the best laid guidelines we have, for the meantime at least, we need to hold up our hands and admit that we just don't know, we are just not able to predict what may happen. What we can do is to solve the problem once it appears as swiftly and effectively as possible and in the interim keep researching and refining our knowledge.

The full paper can be accessed from the *BDJ* website (www.bdj.co.uk), under 'Research' in the table of contents for Volume 207 issue 5.

Stephen Hancocks,
Editor-in-Chief

DOI: 10.1038/sj.bdj.2009.785

TO ACCESS THE BDJ WEBSITE TO READ THE FULL PAPER:

- BDA members should go to www.bda.org
- Do not login on the BDA home page, if you are already logged in, please log out.
- Then, in www.bda.org click on the link to the BDJ in the top left of the screen. A new window will open. If a new window fails to open please check the settings of any pop up blocker software that you have installed on your computer.
- You will now be asked to login with your BDA website login details which are on your BDA membership card.
- Once your details have been entered you will be transferred to the BDJ website. If your login does not work please contact the BDA Membership Department on 020 7563 4550.
- If you are not able to access the article on the BDJ website there may be an issue with your system's firewall. If so, return to the BDA homepage and click on the link 'BDJ access problems' and follow the step by step guide.

IN BRIEF

- Sheds more light onto the natural history of impacted lower third molars.
- Correlates the development of symptoms with some clinical characteristics.
- Provides the general dental practitioner with more knowledge that could help when deciding whether or not to extract an impacted third molar.
- Encourages debate in relation to current practice within the United Kingdom.

COMMENT

This prospective study aimed to assess the development of symptoms from previously asymptomatic mandibular third molars in 583 patients attending 14 dental practices in three areas of Scotland over the period 2005-08. Four hundred and twenty-one patients were followed up for one year by the same dentist and reassessed for symptoms relating to their third molars.

The results of the study raise questions about the validity of NICE and SIGN guidelines on removal of mandibular third molars, implying that perhaps we should reconsider the prophylactic removal of partially erupted distally impacted lower 8s. The authors suggest that this should be based on the patient's preference and the health manager's allocation of resources. However, the key element of judgment in surgery is a risk benefit analysis highlighted by a recent editorial (Freidman *et al.*, 2008) demonstrating the likely 11,000 iatrogenic nerve injuries occurring in relation to the prophylactic surgery in the US constitutes significant morbidity that is worth preventing.

In this cohort the assessment of the position of the lower 8s was based on DPT radiographs from 3-10 years old which may have provided an inaccurate assessment. This report did not assess the development of interproximal caries in the adjacent second molar, an increasingly common reason to remove lower 8s in older patients since the introduction of NICE guidelines. An important question is, however, why the 10% of unerupted teeth

caused symptoms within a year. This may be related to the type of patient questioning which related to recent pain experience rather than the emphasis being placed on the confirmation of a diagnosis. As clinicians we do not base treatment planning entirely on symptoms alone but evaluate signs and investigate accordingly. These weaknesses in the study were highlighted by the authors.

T. Renton
Professor of Oral Surgery,
Kings College London Dental Institute

AUTHOR QUESTIONS AND ANSWERS**1. Why did you undertake this research?**

Despite the fact that the SIGN/NICE guidelines on the management of impacted lower third molars were based on the evidence available at the time, there were gaps in the knowledge and many questions that remained unanswered. The SIGN guidelines, for instance, highlight indications and contra-indications for extraction. These recommendations are graded into the categories A, B or C, where A has the highest level of evidence and C the lowest. In the 'quick reference guide' issued by the SIGN, 14 out of the 24 recommendations (58.3%) are graded as C. There are no recommendations graded as A. Hence we asked the question: what happens to impacted wisdom teeth if they are left alone? In undertaking this study we wished to identify the potential of an impacted lower third molar to cause symptoms and to determine if clinical characteristics would make certain teeth more likely to cause symptoms than others.

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

Since our initial study started shortly after the implementation of the NICE/SIGN guidelines, the population studied would have been skewed by the fact that in the past many third molars were removed irrespective of symptomatology. This is not necessarily the case now, particularly for those under the age of 35. This strengthens the rationale for repeating this work at a larger scale. In addition, symptoms and pathology associated with impaction should always be analysed according to the tooth's angulation and degree of impaction.