A Retrospective Record-Keeping Audit of Maxillary Canine Eruption of 100 Patients in a General Dental Practice

Georgina Kane*
Dental Core Trainee, Northampton General Hospital NHS Trust. UK

Background/Rationale

It is well known that the maxillary permanent canine is the most likely tooth to become impacted after lower third molars [1]. The prevalence of impacted canines is generally thought to be around 1.7%, [2] with impaction twice as likely in females compared to males [3]. Monitoring the eruption of these teeth is very important. Not detecting an ectopic canine can have serious consequences including cyst formation and resorption of adjacent teeth [4]. Furthermore, attempting to correct the problems incurred by the ectopic canine at a later stage may require more invasive treatment which would inevitably carry more risks for the patient, as well as the threat of litigation [5]. Eruption is considered late if at least one of the canines has not erupted by 12.3 years in girls and 13.1 years in boys. Between the ages of 10 – 11 years a canine which is erupting normally should be palpable in the buccal sulcus [5]. A thorough clinical evaluation during this period is essential, and there a few recommended signs to look out for, including palpation of the buccal sulcus or abnormality in either the eruption of neighbouring teeth or overall eruption pattern [6]. The Royal College of Surgeons has released updated guidance for practitioners, which highlights the importance of clinical evaluation of the permanent maxillary canine [5]. As general dental practitioners, we should be regularly assessing and investigating the presence of maxillary canines within this age group and be suspicious of the chance of impaction.

*Corresponding Author: Georgina Kane, Dental Core Trainee, Northampton General Hospital NHS Trust. UK, Email: georgiekane@gmail.com

Received date: Jan 08, 2019, Accepted date: 25th October 2019, Published date: 31st October 2019.
Aims and Objectives

The aim of this audit is to discover if the assessment of maxillary canine is being routinely recorded. The objective is to ensure clinicians are regularly assessing for canine eruption and making a record in the clinical notes of the status of the erupting tooth, or evidence of canine assessment.

Standards/Guidelines/Evidence Base

The gold standard is that all patients should have a record of maxillary canine assessment at some point during the age range, and an orthodontic referral should be sent when appropriate. The evidence base is taken from the Royal College Surgeons guidance [5] and the British Orthodontic Society ‘Management of the Developing Dentition’ [7].

Sample and Data Source

One hundred patient records were selected to ensure a thorough review of current practice. Inclusion criteria covered patients who were 12 years old at the time their notes were viewed and who were regular dental attenders. A regular attender was defined as a patient who had attended for an examination at the practice within the past 12 months (as of June 2017), and had visited the practice for an examination three times or more. The patients who met the criteria were randomly selected from the clinical database by allocating a number to each patient and using a random number generator.

Audit Type

The audit was a retrospective design and criterion-based.

Methodology

Each examination record randomly selected from the database was evaluated for the previous three years to determine if there was any record of assessing the maxillary canines. Studying the records over three years ensured that the records were viewed since the patients were 9 years old, to cover the age range for expected palpation. The patients were anonymised and only identified using their unique patient ID. The status of the canine eruption was noted based on what was recorded on the patient’s electronic chart.

Findings

There were 100 patients in the sample, with 39 females and 61 males. There were 28 patients with either one or both upper canines unerupted on the charting at their last appointment (20 male, 8 female). Of the 28 patients with an unerupted canine, 5 patients had a record that the presence of their canine had been assessed (Table 1).

<table>
<thead>
<tr>
<th>Canine Status</th>
<th>Number of Patients</th>
<th>Record of assessment at one or more appointments</th>
<th>No record of assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>One or both unerupted</td>
<td>28</td>
<td>5</td>
<td>23</td>
</tr>
<tr>
<td>Both Partially or Fully Erupted</td>
<td>72</td>
<td>72</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>77</td>
<td>23</td>
</tr>
</tbody>
</table>

Table 1: Results table showing the number of patients in the sample with erupted or unerupted canines and record of clinical assessment.

Observations

These results have demonstrated that current record keeping of maxillary canine assessment is insufficient. The results also imply that if a canine assessment is not being recorded then it may not be carried out, which can lead to significant consequences as discussed above. It has been demonstrated that a palpable bulge indicates a high likelihood of eruption, [8] yet this simple clinical assessment may not be being used to its full potential in general practice. The results are significant as there is a clear need to improve record-keeping of canine eruption status during examination of this age group [9].

Although this is not a new technique it provides other general dental practitioners with a clear method for auditing their own record keeping of canine assessment against a defined national gold standard. It may facilitate other clinicians to recognise an area of improvement in their medico-legal documents.

Recommendations

The following recommendations are advised:
Dissemination of the audit findings to all general dental practitioners in the practice.
‘Lunch and learn’ refresher session on ectopic canines and the RCS guidelines.5
Advice to all clinicians to add a template on clinical notes as a reminder to assess for canine eruption during child examinations
An orthodontic crib sheet to be accessible in all surgeries, explaining common orthodontic problems at different ages, using information provided in the BOS guidance [7].

Re-audit date set for 12 months’ time.


Ready to submit your research? Choose RN and benefit from:

- Fast, convenient online submission.
- Thorough peer review by experienced researchers in your field.
- Rapid publication on acceptance.
- Support for research data, including large and complex data types.
- Global attainment for your research.
- At RN, research is always in progress.

Learn more: researchnovelty.com/submission.php