

Impacted mandibular second molars - a multi-disciplinary dilemma

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Objectives:

Mandibular second molars (M2M) that have failed to erupt are infrequently reported in the literature (0.06-2.3%). The purpose of this research was to explore the decision-making process for impacted M2M, and the eventual surgical and orthodontic outcomes.

Methods:

Patients attending the joint orthodontic-oral surgery clinic at Bristol Dental Hospital were retrospectively identified over six months; those with impacted M2M (unilateral/bilateral) were included. The notes and relevant imaging were reviewed. Data was collected in a pseudonymised database looking at fixed parameters including: age, gender, angulation and eruption of M2M, status of lower first molar, treatment undertaken (surgical extraction of M2M vs exposure and alignment of M2M).

Results:

25 patients (35 M2M) aged between 12-19 years were identified. 54% (n=19) of M2M were unerupted on clinical examination and the remaining 46% (n=16) partially erupted. In 80% of cases the adjacent erupted first molar was intact, however 20% were affected by root resorption, caries or bone loss, caused by the M2M.

52% of patients underwent surgical extraction of the M2M, with 84% of these M2M horizontally or mesio-angularly impacted. 32% had removal of the obstruction overlying the M2M (i.e. odontome or lower third molar), including 8% who had a gold chain bonded to the M2M. The remaining 16% of patients had no active intervention with planned long-term monitoring.

Of those who underwent surgical extraction of the M2M, 26% (n=9) were deemed to be at higher risk of inferior alveolar nerve injury based on the Cone Beam CT scan, however no patients returned with post-operative neurosensory deficit.

Conclusion:

The impacted M2M poses similar considerations to the impacted lower third molar in orthodontic patients. Our results demonstrate that M2M angulation influenced the treatment decision. Horizontally or mesio-angularly impacted M2M were less favourable for orthodontic alignment due to poor predictability and prolonged treatment time.