or extraction of the affected teeth.

Whilst the vertical growth of both the maxilla and mandible for this patient is not yet complete, any further changes past the age of 17 are likely to be insignificant and certainly would not alter the posterior occlusion in a substantive way. One of the advantages of treating the lateral open bites with either composite onlays or partial dentures is that, should any further vertical growth occur, simple occlusal adjustments can be made to the composite or acrylic to restore a balanced occlusion.

The definitive treatment plan was based on the severity of the infraocclusion and patient preference and comprised the surgical extraction of the LR6, LR7, LL7, LL8 and occlusal onlays for the UL5 and LL6 to establish occlusal contact. In order to monitor the patient's vertical growth, which may give rise to further infraocclusion of the restored teeth, the patient will be reviewed by the restorative department. Should the patient present with an altered posterior occlusion, the composite restorations can be contoured or added to in order to maintain a well-balanced occlusion. Once the patient has reached the age of 18 and at the point of growth maturation, he may consider implants for restoration of the previously extracted teeth, with or without the extraction of the infraoccluded and restored teeth.

Conclusion

When faced with failure of eruption, it is important to be mindful of the true aetiology given the similar clinical presentations of PFE, MFE and impaction. Impacted teeth should erupt once the physical obstruction is removed, however, teeth affected by PFE and MFE will not. It is important to remember that applying orthodontic traction to teeth affected by PFE and MFE will not be successful and, indeed, may cause ankylosis.[3] These two cases highlight the importance of accurate diagnosis and the implications for treatment planning.

References

1. Grover PS, Lorton L. The incidence of unerupted permanent teeth and related clinical cases. *Oral Surg Oral Med Oral Pathol* 1985; **59**: 420–425.
2. Ireland AJ. Familial posterior open bite: a primary failure of eruption. *Br J Orthod* 1991; **18**: 233–237.
3. Proffit WR, Vig KW. Primary failure of eruption: a possible cause of posterior open-bite. *Am J Orthod* 1981; **80**: 173–190.
4. Bosker H, ten Kate LP, Nijenhuis LE. Familial reinclusion of permanent molars. *Clin Genet* 1978; **13**: 314–320.
5. Brady J. Familial primary failure of eruption of permanent teeth. *Br J Orthod* 1990; **17**: 109–113.
6. DiBiase AT, Leggat TG. Primary failure of eruption in the permanent dentition of siblings. *Int J Paediatr Dent* 2000; **10**: 153–157.
7. Frazier-Bowers SA, Koehler KE, Ackerman JL, Proffit WR. Primary failure of eruption: further characterization of a rare eruption disorder. *Am J Orthod Dentofacial Orthop* 2007; **131**: 578.e1–11.
8. Frazier-Bowers SA, Simmons D, Koehler K, Zhou J. Genetic analysis of familial non-syndromic primary failure of eruption. *Orthod Craniofac Res* 2009; **12**: 74–81.
9. Decker E, Stellzig-Eisenhauer A, Fiebig BS, Rau C, Kress W, Saar K *et al.* PTHR1 loss-of-function mutations in familial, non-syndromic primary failure of tooth eruption. *Am J Hum Genet* 2008; **83**: 781–786.
10. Sharma G, Kneafsey L, Ashley P, Noar J. Failure of eruption of permanent molars: a diagnostic dilemma. *Int J Paediatr Dent* 2016; **26**: 91–99.
11. Susami T, Matsuzaki M, Ogihara Y, Sakiyama M, Takato T, Sugawara Y, Matsumoto S. Segmental alveolar distraction for the correction of unilateral open-bite caused by multiple ankylosed teeth: a case report. *J Orthod* 2006; **33**: 153–159.

Book Review

Stability, Retention and Relapse in Orthodontics. Christos Katsaros and Theodore Eliades, eds. Quintessenz Verlags GmbH. (226pp, £86.58). ISBN 978-1-78698-019-9.

Considering that relapse and retention affects every single orthodontic patient, it is a topic that is often overlooked in Orthodontics. I was therefore delighted to see that an up-to-date textbook has been written that is dedicated to this vital subject. This textbook, edited by two respected and experienced professors from Switzerland, brings together 13 chapters with contributions from 29 additional authors with expertise in the field.

The textbook is essentially divided into three sections. The first section, which is particularly enjoyable, focuses on orthodontic retention, covering the historical background to retainers, the biological basis for orthodontic relapses and a review of the clinical evidence supporting the use of different approaches to retention.

The second section focuses on 'Dentofacial treatment stability and relapse', with the emphasis of maintaining changes achieved after treating patients with skeletal discrepancies. While all the chapters in this section are of a high standard, some readers may prefer a more consistent approach. Some authors focused on the relapse and retention, while others, for example Chapter 7 about the 'Stability and relapse of Class III treatment', included significant information on diagnosis and treatment as well.

The final section is devoted to retention protocols and materials, with chapters on acrylic removable retainers and three different chapters on fixed retention. The chapters on fixed retainers provide a strong material and theoretical background, but I wonder whether the sections on biomechanical aspects of fixed retainers in chapter 11, and the section on mechanical and physical properties of wires in chapter 12, could have been combined.

The strength of a textbook like this, involving lots of different authors, is that it taps into expertise from all over the world. However, it does occasionally lead to areas of repetition. For example, chapters 3 and 4, whilst both excellent, duplicate some of the same information on the evidence-base supporting orthodontic retention. This is partly a reflection of the paucity of high-quality evidence on this topic, meaning that authors from different chapters often find themselves writing about the same studies. However, this is a minor criticism, as this book provides useful and relevant information, accompanied by numerous clinical illustrations and backed up with appropriate references.

Overall, this is a well-illustrated book, which provides excellent information on a topic that is relevant to every orthodontic clinician. The editors and authors should be congratulated on producing a high quality and contemporary textbook. I would recommend this to any clinician working in orthodontics who wants to gain a more detailed understanding of stability, retention and relapse.

Simon Littlewood
Consultant Orthodontist
St Luke's Hospital
Bradford and Leeds Dental Institute