Variations in dental development are not uncommon, however diagnosing such anomaly remains a challenge for the clinician. Tratman [1] stated that dental anomalies are rarer in primary dentition than in permanent dentition. Primary mandibular first molars usually have two roots – mesial and distal.

The following are two case reports where the first molars had three roots and a broader occlusal table resembling a primary maxillary molar, which posed a challenge during the dental treatment and required certain modifications of the routine procedures.

Case Report 1

A 4-year-old male patient reported to the dental clinic with a complaint of multiple decayed teeth. The patient’s medical and family histories were noncontributory. On clinical examination, the patient had deep dentinal caries in the lower molars. The first primary molars were broader in dimension than normally seen. Routine diagnostic radiographs were made which revealed deep dentinal caries approximating the pulp in 74 and 84. Both the first primary molars had three roots – mesial, distal and lingual (Fig. 1, 2).
Tooth 74 was anesthetized and, under rubber dam isolation, the pulp chamber was accessed. A rectangular access was created assuming that the supernumerary root was adjacent to the distal root, but the rectangular access did not include the orifice of the supernumerary root. Hence, the access was modified accordingly to remove the roof of the pulp chamber completely, which resulted in a trapezoidal-shaped access opening (Fig. 3). Formocresol pulpotomy was performed and a stainless steel crown was given in the next appointment.

Similarly, tooth 84 was anesthetized and restored with resin modified glass-ionomer cement (RMGIC).

Case Report 2

A 4.5-year-old male patient came to the department for a regular dental checkup. The patient's medical and family histories were noncontributory. On examination, the patient had multiple decayed teeth in the lower molars. The occlusal surfaces of 74 and 84 were larger than the normal dimensions (Fig. 4). Routine diagnostic radiographs were made which showed 74 and 84 had three roots with dental caries involving dentine (Fig. 5, 6). Tooth 84 had a moderate dentinal cavity which was restored with RMGIC.

Discussion

Mandibular primary first molars usually have two roots – mesial and distal. Some cases present with an additional root which remains unnoticed except when routine radiographs are made. The prevalence of a supernumerary root in mandibular primary first molars is estimated at 5% in Taiwanese [2] and 9% in Chinese [3] populations, whereas the occurrence of bilateral mandibular three-rooted primary teeth is only 1% [2]. According to Song et al. [4], the probability of the
tooth posterior to a mandibular primary first molar with three roots is greater than 94.3%, but in our cases the primary mandibular second molars had two roots.

According to the AAPD, radiographs for children with primary dentition should be planned according to the individual [5]. Radiographs are made when the proximal surfaces cannot be clinically visualized or probed. In our first case, tooth 84 was clinically intact except for proximal discoloration distally which on radiograph showed proximal radiolucency approximating pulp and eventually required pulp therapy.

In all the teeth mentioned, the crown morphology was atypical where the buccolingual width was more than the mesiodistal width with five cusps. In case 1, achieving sufficient anesthesia for pulp therapy failed with local infiltration (buccally) with 2% lidocaine, following which an inferior alveolar nerve block was given, which explains the difficulty in anesthetizing the lingual root. Articaine can be used as an alternate local anesthetic if local infiltration is preferred because of its better bone penetration [6]. Rubber dam was applied for isolation in all of the above cases. Ideally, clamp 2A should be used for primary first molars, but in our case, since the occlusal table was broader, clamp 13A was used. The broader occlusal table also posed difficulty during stainless steel crown adaptation. Hence, a larger sized maxillary first molar crown of the opposite side was used for the mandibular first molar of the opposite side [7]. The recommended modifications for such teeth during the dental procedure are shown in Table 1. Diagnostic radiographs are of great value in disclosing dental anomalies. If dental treatment was commenced without a diagnostic radiograph, the additional root would have remained unnoticed and ignored, which could even lead to periapical infections later. Extraction of such teeth should be done cautiously since the erupting first premolar should not be involved during the procedure. After extraction, the clinician should make sure that all the roots are completely retrieved [8].

The prevalence of multi-rooted primary mandibular first molars have not been studied in an Indian population. However, there are a few case reports on supernumerary roots in primary mandibular molars. Gupta et al. [9] mentioned two cases – bilateral and unilateral primary mandibular first molars with three roots. Ramamurthy [8] has reported a case with bilateral primary first and second molars with three roots in an 8-year-old male patient. Poornima et al. [10] reported a case of a primary mandibular right first molar with three roots and five cusps on the occlusal table.

Table 1. Recommendations for dental treatment

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Conventional technique</th>
<th>Recommended modifications</th>
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</thead>
<tbody>
<tr>
<td>Radiograph</td>
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<td>tube shift technique</td>
</tr>
<tr>
<td>Local anesthesia</td>
<td>buccal Infiltration</td>
<td>1. inferior alveolar nerve block (or)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. buccal infiltration with articaine</td>
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<tr>
<td>Rubber dam</td>
<td>2A clamp</td>
<td>13A clamp</td>
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<td>Access opening</td>
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<tr>
<td>Stainless steel crown</td>
<td>lower first primary molar crown</td>
<td>larger sized upper first molar crown of the opposite side</td>
</tr>
<tr>
<td>Extraction</td>
<td>apical pressure, buccal-lingual traction</td>
<td>minimal buccal-lingual traction</td>
</tr>
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References

Atypical Mandibular Primary First Molars


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