



Figure 1 Age distribution of orthodontic sample.

of 1.97 incidental findings per scan. The most common number of incidental findings per scan was 2, which occurred in 117 of 427 scans (Table 2). Non-odontogenic findings, defined as those located outside the dentition and associated alveolus, represented 718 of the 842 (85.3%) findings.

The most frequently identified incidental findings were those located in the naso-oropharyngeal airway, representing 42.3% of all findings. The second most common form of incidental findings was those identified in the paranasal air sinuses, representing 30.9% of all findings. Dentoalveolar findings represented 14.7%, while TMJ findings represented 6.4% of all incidental findings. Findings in the surrounding hard/soft tissues and cervical vertebrae represented 4.0% and 1.3%, respectively.

The kappa score measuring the level of inter-examiner agreement in the data collection was 1.0, indicating perfect agreement. The results of the logistic regression analysis suggest that when controlling for age, only one anatomic category demonstrated statistically significant differences between males and females (Table 3), where females were 2.55 times ($P < 0.001$, 95% CI [1.29,5.03]) more likely to have a TMJ finding than men.

Further follow-up was specifically suggested by the interpreting OMFR for the following seven findings:

1. Polypoidal soft tissue mass on the superior surface of soft palate (Figure 3)
2. An irregular thickening of the nasal cavity; nasal polyps cannot be ruled out (Figure 4)
3. Severe adenoid hypertrophy affecting patency of nasopharyngeal airway (Figure 5)
4. Complete obliteration of maxillary, sphenoid, frontal, and ethmoid sinuses with soft tissue/mucosal-like density (Figure 6)
5. Enlarged sella turcica (Figure 7)
6. Odontogenic cyst pericoronal to tooth 48 (Figure 8)
7. Soft tissue asymmetry with enlargement of the left-side pharynx and larynx (Figure 9)

Discussion

CBCT imaging is increasingly being utilized in diagnosis and treatment planning in orthodontics. In this study, 427 consecutive CBCT radiologic reports of orthodontic patients were retrospectively reviewed from a private diagnostic imaging center. Reported findings include developmental findings, normal anatomic variants, age-related findings, and pathological findings. As mentioned in a previous systematic review [13], at least two methods for reporting the incidence of incidental findings are described in the literature: (i) by describing the absolute number of IFs detected or (ii) describing the number of CBCT scans that contain IFs. The former method, using the absolute number of IFs, is favored because it is highly likely for multiple IFs to be detected in a single CBCT scan; our results confirm this.