TABLE 6

Outcomes for Different Scenarios for Teeth Where Crown Lengthening Needs Were Originally Identified by a General Dentist

Treatment	Outcome	Percent of teeth (number)	
General dentist only	Success > one year	24%	(22)
	Restored, other outcome	47%	(43)
	Extracted	3%	(3)
	Other outcome	26%	(24)
General dentist and periodontist, crown lengthening performed	Success > one year	44%	(30) *
	Restored, other outcome	38%	(26)
	Extracted	3%	(2) [ns]
	Other outcome	15%	(10)
General dentist and periodontist, crown lengthening recommended by periodontist, but not performed	Success > one year	0%	(0)
	Restored, other outcome	11%	(6)
	Extracted	4%	(2)
	Other outcome	85%	(48)
General dentist after periodontist did not recommend crown lengthening as treatment	Success > one year	1%	(3)
	Restored, other outcome	6%	(7)
	Extracted	51%	(70)
	Other outcome	42%	(57)

* p = 0.01 chi-square test with Yates correction; statistically significant difference between number of cases successfully restored for at least one year.
[ns] p > 0.05 Fisher's exact test; no significant differences between number of teeth extracted or teeth with periodontal problems after restoration.
Outcomes were analyzed for different scenarios that unfolded after a general dentist initially recognized the need for crown lengthening in a case. As seen here, successful restoration was most likely if a crown lengthening case was co-managed by a general dentist and periodontist.

these teeth were lost because of patient dropout. As expected, if crown lengthening was not recommended by periodontists, the majority of those teeth were extracted and only a few teeth were restored successfully.

Discussion

In this large, general practice dental school clinic, crown lengthening most likely is needed and performed for posterior teeth with deep recurrent caries against a backdrop of mild systemic disease and periodontal disease. It is possible that these findings may be unique to our setting if our patient population is not representative of the typical patient attending a private general practice. However, the characteristics of our patient population closely match demographic characteristics of the surrounding communities in the San Gabriel Valley and Inland Empire region of Southern California. Moreover, prevalence of medical conditions is similar to published data for California and prevalence of periodontal disease and caries is similar to published national and state epidemiologic data.[15] Our results are also comparable to Iranian data on crown lengthening referrals, where the average age of patients receiving crown lengthening was 38 + 14 years, caries was the most common reason for crown lengthening, and molars and premolars were also the most common teeth receiving crown lengthening.[16] Given that our patient population seems to be representative of the surrounding community and findings are comparable to findings from a distant patient population, findings from this study should apply well to many other areas in California with similar demographics. We attempted other approaches to verify this idea, such as obtaining statewide dental insurance data. However, we could not obtain suitable data, and it is likely that this type of data contains significant sample bias and may be biased toward extractions if crown lengthening procedures are not covered by a given plan.

Another major concern raised by this study was the fact that even though a significant number of teeth was determined to have crown lengthening needs, few were referred for crown lengthening procedures. Barriers to referrals from general practitioners to periodontists have been studied before,[17–20] but these studies only evaluated if a referral was made from a private general dental office to a private periodontal office. In these studies, the main factor that prevented referrals was access to a periodontal specialist and awareness of periodontal needs. However, this did not apply to our study's setting, as periodontists were available in the same clinic and restorative dentists received regular training on periodontal referrals. Several British researchers found the quality of periodontal referrals to be poor,[21–23] but criticized mostly the lack of detail provided in referral letters. This was not an issue in this study because specialists and generalists shared the same clinical record system and a standardized referral form is part of the record for each patient. We are not aware of any study that evaluated referrals for the likelihood of specialist treatment after the referral is made, and we propose that the low rate of referrals seen in this study is mostly related to patient factors, as evidenced by the large dropout rate and to a lesser degree on an absence of clear diagnostic guidelines for crown lengthening.

Apart from practitioners referring teeth for crown lengthening where crown lengthening was not indicated,