

COMMENTARY

PREVALENCE OF CARIOUS AND NON-CARIOUS CERVICAL LESIONS IN ARCHAEOLOGICAL POPULATIONS FROM NORTH AMERICA AND EUROPE

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This interesting publication describes the prevalence of carious and non-carious cervical lesions (NCCLs) and tooth wear in archaeological samples from Labrador (> 500 years old); Merida, Mexico (late 19th century); Mimbres Valley, New Mexico (AD 650–950); Madisonville, OH, USA (AD 1275–1640); and Mistihalj, Montenegro (15th and 16th centuries). The secondary aim was to explore the association between subjects' age, gender, diet, tooth wear, and cervical lesions.

Among the populations studied, there was a range of prevalence of both carious (18–65%) and non-carious (0–26%) cervical lesions; however, only two populations showed NCCL. Not surprisingly, four of the five populations showed an association between tooth wear and age.

Although the etiology of carious cervical lesions is well established, recent work by one of the authors (Grippe) has proposed that progression of such lesions may be affected by mechanical stress concentration at the tooth's cervical margin, as a consequence of functional and parafunctional occlusal forces. Grippe has also proposed that such stresses play an important part in the initiation and progression of NCCLs and has termed this process “abfraction.” It might, therefore, be expected that teeth with excessive occlusal wear would also have NCCLs.

However, it is now accepted that NCCLs are multifactorial in origin and progression, with abrasion, “erosion” (correctly termed “corrosion”), and probably abfraction all being implicated. What is unclear is the relative contribution of each, and indeed such contribution may well change over the life of the lesion. The complexity of the process of non-carious cervical tooth loss is exemplified by this article, which notes the absence of association between occlusal wear and NCCL. The authors propose that diet may be important, having found more NCCLs in the population with access to acidic food items. They also suggest that occlusal wear, and thus loss of cusps, may reduce lateral forces, and therefore, also reduce cervical stress. In addition, occlusal wear results in loss of crown height and a larger occlusal table, also leading to a reduction in occlusal stress. These proposals do have some laboratory support, but the authors do not explain why NCCLs do not develop during the occlusal wear process.

Like many clinical and laboratory studies on NCCLs, this article adds to the body of knowledge. However, also in common with many other studies, the authors conclude that “future studies . . . are suggested.”

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