Dental Health Decline in the Chesapeake Bay, Virginia: The Role of European Contact and Multiple Stressors

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ABSTRACT: This study tests the hypothesis that the arrival of Europeans in Jamestown, Virginia, had a negative impact on the dental health of native populations in the Chesapeake Bay. Data were collected on three variables—dental caries, periapical lesions, and antemortem tooth loss—in a sample of 644 individuals from four prehistoric (n = 500) and two contact era ossuaries (n = 144) from the Potomac Creek site in Virginia (44ST2). Statistical analysis reveals a trend of declining dental health for the post-contact sample (chi-square; P<0.05). The temporally latest ossuary had the highest prevalence of all indicators. There is also a trend toward poor dental health for females relative to males. In particular, females have a higher prevalence of carious lesions and antemortem tooth loss than males. Sex differences in dental health probably correspond to sex-based differences in food production and preparation in this setting, since females likely ate more cariogenic foods. Multiple factors likely explain the general pattern of decline in dental health, including: (1) a change in diet involving greater consumption of carbohydrates, (2) increased exposure to infectious pathogens, (3) warfare and other forms of conflict, (4) strain on resources, and (5) increased population density. *Dental Anthropology* 2005;18:12-21.

The biological impact of European exploration and expansion had varied consequences on the health of native populations in the New World (Baker, 1994; Baker and Kealhofer, 1996; Larsen and Milner, 1994; Larsen *et al*., 2001; Pfeiffer and Fairgrieve, 1994; Ubelaker, 1993; Verano and Ubelaker, 1992). Health effects differed according to several factors, including the motivation of European explorers (*e.g*., religious or economic), duration of contact, and native cultural and physical environments (Baker and Kealhofer, 1996; Larsen and Milner, 1994; Larsen, 2001; Ubelaker and Curtin, 2001; Verano and Ubelaker, 1992). Previous historical and archaeological literature has emphasized the negative consequences of contact for both immigrant and native populations, concentrating on disease and epidemics (*e.g*., Cook and Lovell, 1991; Crosby, 1986; Dobyns, 1983, 1993; Sale, 1990). More recent work has demonstrated that biocultural responses to contact were not uniform, and that native populations adapted differently to post-contact conditions (Baker and Kealhofer, 1996; Larsen, 1994; Larsen and Milner, 1994). Few bioarchaeological analyses have focused

Sally Graver (*left*) receiving Dahlberg Award from DAA President Debbie Guatelli-Steinberg.

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on issues of contact in the Chesapeake Bay region (but see Mecklenburg, 1969; Miller *et al.*, 1999), where long term contact commenced with the founding of Jamestown by British colonists in 1607 (Dent, 1995). In order to completely understand the contact experience in North America, it is important to document this cultural encounter.

The purpose of the present study is to test the hypothesis that contact with English settlers resulted in a decline in the dental health of native populations in the Chesapeake Bay. In order to test this hypothesis, the dental remains of a Patawomeke Indian population originating from four prehistoric and two contact era ossuaries at the Potomac Creek site in Virginia (44ST2) were examined (Fig. 1). The population under study is known historically to have had an intimate relationship with the Jamestown colonists and represents an excellent population sample on which to test this hypothesis. Data were collected for three dental health indicators: dental caries, periapical lesions, and antemortem tooth loss in order to assess whether a decline in dental health occurred in the Chesapeake Bay during the transition from the late prehistoric period to the contact era.

Dental health indicators

Dental caries is a pathological process resulting in destruction of tooth structure by acid-forming bacteria found in dental plaque (Hillson, 2000; National Library of Medicine, 2001; Schachtele, 1990). Populations with diets high in carbohydrates or other dietary sugars (such as maize) are predisposed to dental caries and poor oral health in general (Hillson, 2000; Hutchinson and Larsen, 2001). This positively correlated relationship is well documented in both bioarchaeological and medical literature (Larsen, 1983; Lukacs, 1992; Newbrun, 1982; Schachtele, 1990; Turner, 1979; Walker and Hewlett, 1990). Furthermore, caries rates have been relatively low throughout prehistory until the adoption of agriculture and, thus, the addition of cariogenic foods into the diet (Hillson, 2000; Larsen, 1995; Larsen *et al.*, 1991). Increases or decreases in caries rates can document dietary change in prehistory (Hillson, 2000; Larsen, 1997).

Caries is a slowly progressive, age-related disease. Therefore, age data are important for understanding caries frequencies. Caries rates are also typically higher in molars and premolars (Hillson, 2001). This disease results when the cariogenic component of the diet is increased and constant (Schachtele, 1990).

Anthropological literature commonly uses the term "abscess" to refer to periapical lesions in the alveolar bone; however, abscess formation is only one of several possible inflammatory responses (Alt *et al.*, 1998; Dias and Tayles, 1997; Hillson, 2000). The differential diagnosis of periapical lesions in prehistoric populations is a problematic; therefore, periapical granulomata, cysts, and abscesses collectively are classified here as *lesions*. Periapical inflammation of the alveolus results from soft tissue infection where bacteria spread and cause pulp chamber inflammation (pulpitis) (Hillson, 2000). This inflammation is usually painful and can be due to a number of factors, including excessive dental wear, carious lesions, periodontitis, dental impactions, tooth fracture, or pulp chamber exposure (Buikstra and Ubelaker, 1994; Dias and Tayles, 1997; Hillson, 2000; Larsen, 1997).

The alveolar process has very active bone remodeling at all ages (Hillson, 2000; Verna *et al.*, 1999). When a tooth is lost during life, the alveolus gradually resorbs the socket and remodels bone to create a smooth flat surface where the tooth had been before it was lost. In archaeological populations, periapical inflammation and abscesses generally result in the loss of teeth and eventual resorption of the alveolus (Hillson, 2000; Larsen, 1997). Other factors that may contribute to tooth loss during life include chipping or breakage, extraction, wear, periodontal disease, or trauma (Hillson, 2000).

Biocultural setting

A decline in the dental health of Native Americans has been documented elsewhere in North America after European contact (*e.g.*, Baker, 1994; Hill, 1996; Kelley *et al.*, 1987; Larsen *et al.*, 2001; Stodder and Martin, 1992; Walker and Johnson, 1992, 1994). While the motivations of the Spanish, French, and English in the New World varied, the effects of their colonization on native populations share some common outcomes. Throughout North America, exposure to European diseases reached epidemic proportions and drastically reduced native population size (Baker, 1994; Baker and Kealhofer, 1996; Brose *et al.*, 2001; Fitzhugh, 1985; Larsen, 2001; Larsen and Milner, 1994; Larsen *et al.*, 2001; Pfeiffer and Fairgrieve, 1994; Ubelaker, 1993; Ubelaker and Curtin, 2001; Verano and Ubelaker, 1992). Other studies, however, indicate that late prehistoric levels of dental pathology were already high due to the intensification of agriculture, and that contact with Europeans did not necessarily affect the dental health of natives (Cybulski, 1994; Hutchinson and Larsen, 2001; Miller, 1996; Pfieffer and Fairgrieve, 1994; Reinhard *et al.*, 1994; Stodder, 1996). For instance, Pfieffer and Fairgrieve (1994) found no significant difference in caries prevalence, abscesses, and linear enamel hypoplasias between prehistoric and post-contact Iroquois ossuaries. Although evidence suggested that episodic stress and disease prevalence increased from the late prehistoric to post-contact times, the authors were reluctant to conclude European contact was solely responsible for the trend in declining health over time.

European-introduced diseases may have devastated Chesapeake natives, although sources disagree about the scope of this phenomenon. European accounts from the 17th and 18th centuries offer conflicting accounts about the health of native populations in the Chesapeake, leading some historians to claim that no major epidemics occurred around the time of contact (*e.g.*, Potter, 1993; Rountree, 1990; Turner, 1985). Other scholars suggest it is impossible to ignore the impact of European diseases on native populations (Dent, 1995; Rountree, 1989; Ubelaker, 1993; Ubelaker and Curtin, 2001). Early Jamestown colonists Gabriel Archer and William Strachey claim that native groups were ravaged by disease, most likely smallpox (Archer, 1969; Strachey, 1953; Ubelaker and Curtin, 2001). Chesapeake natives were almost certainly subjected to repeated epidemics of smallpox, measles, whooping cough, typhoid, mumps, syphilis, influenza, plague, and scarlet fever, which greatly decreased population size in the 16th and 17th centuries (Ubelaker, 1993; Ubelaker and Curtin, 2001).

Europeans arrived in the Chesapeake at a time when population pressure, drought, declining health, and conflict were widespread (Potter, 1993; Rountree, 1989). Tree-ring data from Virginia and sediment cores from the Chesapeake indicate that two severe droughts, the first occurring prior to contact (AD 1587-1589) and the second just after the settlement of Jamestown (AD 1606-1612), would have been devastating to native subsistence practices (Cronin *et al*., 2000; Richardson *et al*., 2002; Rountree, 1989; Stahle *et al*., 1998). The second severe drought has been suggested as a possible contribution to the deaths of 70 of the 104 colonists during the first year of settlement at Jamestown and to high mortality during the next decade (Blanton, 2000; Richardson *et al*., 2002, Stahle *et al*., 1998). Natives were accustomed to minor droughts every three years (Rountree and Turner, 2002), but were not prepared to share resources with Europeans during a severe drought. With contact came new problems for native populations that would inevitably change their way of life.

Archaeological data indicate that an increase in native population growth and the development of chiefdoms brought prehistoric native groups into conflict. New alliances and trade with Europeans were also disruptive to native political systems, often pitting native groups against each other (Axtell, 1988; Dent, 1995; Potter, 1993). The arrival of the Jamestown colonists made competition for resources more acute. One strategy for survival was to cooperate with the new immigrants. The Patawomeke employed such a strategy by allying themselves with the British against their old rivals, the more powerful Powhatan (Potter, 1993).

Subsistence

The intensification of domesticated plants, specifically maize, negatively impacted the health of native groups in the Chesapeake Bay (Hoyme and Bass, 1962; Ubelaker, 1993). A maize-based diet is marginally sufficient in protein, vitamins, and minerals, depending on processing techniques and supplemental foods (Messer, 2000). Additionally, maize is low in the essential amino acids lysine and tryptophan as well as calcium and niacin (Ensminger *et al.*, 1995; Messer, 2000). Without adequate supplementation, a maize-based diet is deficient in iron, due to the presence of phytates that inhibit the absorption of iron by body tissues (Baynes and Bothwell, 1990). The negative effects of a diet high in maize can be clearly observed in a comparison of inland and coastal skeletal samples in the Chesapeake region. Chase (1988) found that coastal populations exhibited less evidence of anemia (porotic hyperostosis and cribra orbitalia) than the inland populations. She argued that this difference was due to the higher level of marine resources available to coastal populations, which can offset the problems associated with maize (Chase, 1988; Messer, 2000; Papathanasiou *et al*., 2000). Stable isotope data confirm this hypothesis.

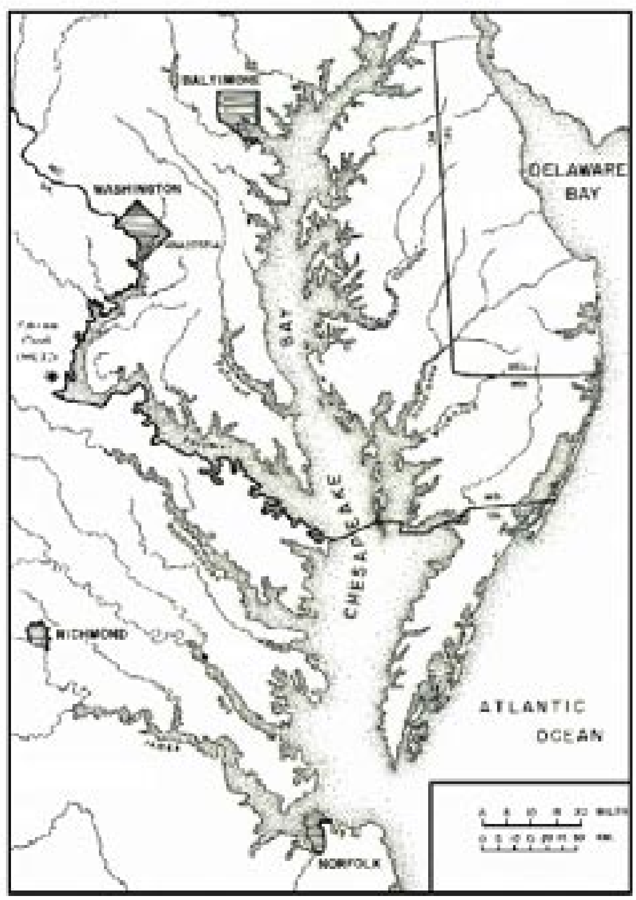

Fig. 1. Map of the Chesapeake Bay, with location of Potomac Creek Site. Modified from Ubelaker, 1974:12.

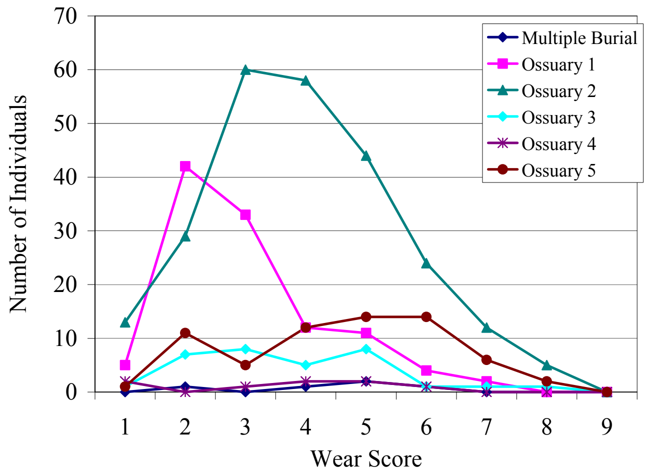

Fig. 2. Average wear score by ossuary. Wear scores are based on the eight-grade system developed by Smith (1984), with grade 1 being no wear.

An analysis of stable carbon and nitrogen isotopes from Late Woodland skeletal samples from Virginia demonstrate that maize comprised a significant proportion of diets from all regions (25-50% in the Coastal Plain), while only the coastal populations had significant marine resources incorporated in the diet (Trimble, 1996). Fourteen individuals sampled from the population under study were compared to other Coastal Plain, Piedmont, and Appalachian populations from the Late Woodland Period. Of the 15 sites sampled, Potomac Creek populations had the lowest mean $\delta^{13}C$ and $\delta^{15}N$ values, indicating that their diet consisted of the highest proportion of marine or freshwater resources (Trimble, 1996). Trimble (1996) argues that maize contributed about 20 to 50% of the Patawomeke diet, and that prehistoric C_4 plant usage at Potomac Creek was lower than the other 14 sites.

Studies have also shown a positive correlation between a maize-based diet and high caries rates in prehistoric populations (Cook, 1984; Larsen, 1995, 1997; Larsen *et al.*, 1991). The traditional method of preparation in the Chesapeake Bay included grinding and boiling maize into a soft gruel (Smith, 1986a). The preparation of maize into a sticky, starchy mush increases the likelihood that food particles will become caught in tooth grooves during mastication, which make teeth more prone to dental caries (Cook, 1984; Reeves, 2001). Moreover, maize-based diets show strong association with poor health, including high frequencies of antemortem tooth loss, iron-deficiency anemia, and periapical lesions (Baynes and Bothwell, 1990; Cook, 1984; Cohen and Armelagos, 1984; Larsen, 1995, 1997; Larsen *et al.*, 1991). A poor diet, such as one that emphasizes maize without sufficient supplementation of iron and protein, results in poor nutrition, which leads to a greater susceptibility to infection and disease (Ensminger *et al.*, 1995; Messer, 2000, Powell, 1988).

MATERIALS AND METHODS

The sample consists of a minimum number of 644 individuals from the Potomac Creek site (44ST2), which is located on the western shore of the Potomac River in Stafford County, Virginia (Fig. 1). The remains are curated at the National Museum of Natural History, Smithsonian Institution, Washington, D.C. Two of the burial contexts contain European trade items that indicate use of the site during post-contact times.

The sample (n = 644) consists of four pre-contact (<AD 1607; n = 500) and two post-contact (>AD 1607; n = 144) ossuaries. An ossuary involves a mortuary practice that is defined as the "collective, secondary deposit of skeletal material representing individuals initially stored elsewhere" (Ubelaker, 1974:8). Ossuaries should not be confused with mass burials, as the latter implies that individuals died around the time of their deposit. Because of their commingled nature, ossuaries present several unique problems to bioarchaeologists.

Demographic profile

Demographic information was difficult to determine in this sample due to the disarticulated, commingled, and highly fragmentary nature of the remains. Age and sex were based on dental development, dental wear, and sexually dimorphic cranial features (Table 1). Except for Ossuary 5, all samples are represented by a small percentage of juveniles and an abundance of

Table 1. Demographic distribution by ossuary

Temporal Period	Ossuary	Males		Females		Indeterminate		Juveniles		Total
		n	%	n	%	n	%	n	%	n
Post-Contact	Multiple Burial Pit	2	29	0	0	2	29	3	42	7
Post-Contact	Ossuary 1	20	15	10	7	102	74	5	4	137
Pre-Contact	Ossuary 2	69	21	56	17	176	54	22	8	323
Pre-Contact	Ossuary 3	7	15	8	17	28	61	3	7	46
Pre-Contact	Ossuary 4	0	0	0	0	18	86	3	14	21
Pre-Contact	Ossuary 5	30	27	29	26	13	12	38	35	110

Table 2. Prevalence of adult carious lesions per tooth class

Ossuary	UM n	UM %	UP n	UP %	UC n	UC %	UI n	UI %	LM n	LM %	LP n	LP %	LC n	LC %	LI n	LI %	Total n	Total %
MBP	4	33	0	0	5	100	2	40	2	33	4	50	0	0	1	7	18	30
1	78	43	26	18	12	16	23	21	111	55	41	26	19	22	7	8	317	31
2	207	43	92	28	30	19	28	16	213	53	77	24	19	12	14	7	680	31
3	16	27	11	18	3	10	1	5	18	38	1	33	2	12	0	0	52	19
4	4	30	1	13	1	50	0	0	3	25	1	14	1	50	0	0	11	23
5	68	33	38	23	14	15	11	9	88	49	34	20	6	6	4	3	263	23

adults of indeterminate sex. Data collected on juvenile permanent dentition were pooled with adults for dental caries only.

Since other bone elements could not be associated directly with crania or isolated teeth, an estimate of adult age is provided by an analysis of dental wear (Fig. 2). Studies have shown a strong correlation between age and dental wear in archaeological populations (Smith, 1984; Walker *et al*., 1991). Dental wear was scored following the eight stages proposed by Smith (1984) for all individuals and loose teeth by ossuary. Due to the high degree of postmortem tooth loss, an average wear score of all present teeth was calculated for complete sets of dentition; loose teeth were scored on an individual basis. These data are provided to identify possible confounding factors in the analysis of age-related dental pathological indicators: dental caries, antemortem tooth loss, and periapical lesions (Hillson, 2000).

Dental health indicators

Carious lesions were recorded for each tooth by number of carious lesions per tooth and location of lesions. Periapical lesions were identified by the presence of a drainage channel leading from the apex of the tooth root through the alveolar bone, resulting in a granuloma, cyst, or abscess (Buikstra and Ubelaker, 1994; Dias and Tayles, 1997). Antemortem tooth loss could only be determined from direct observation of alveolar bone of the maxilla and mandible. Tooth loss was documented when the associated alveolar bone was partially or totally resorbed.

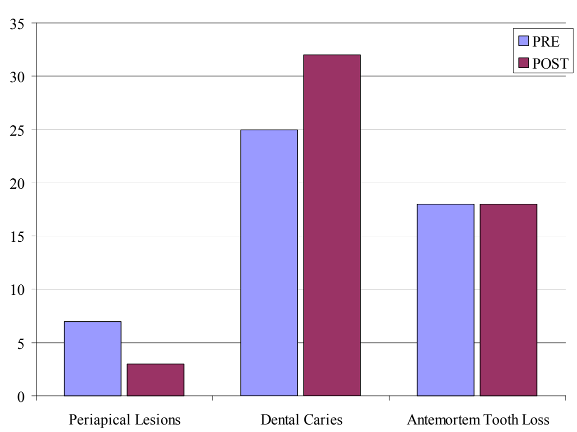

Fig. 3. Prevalence of dental health indicators by temporal period.

Statistical analysis

Chi-square statistics were applied to the data set in order to test for significant differences between samples. For each dental health indicator, statistical tests were conducted among ossuaries, between combined pre- and post-contact samples, and within each ossuary (by sex). Due to the commingled and fragmentary nature of the remains, it was impossible to separate the samples by age categories other than adult and juvenile.

RESULTS

Dental caries

Dental caries rates are high among adults (Table 2) from all burial samples. A comparison of combined burial samples (including adults and juvenile permanent dentition) demonstrates significantly greater caries rates in the post-contact sample than in the pre-contact ossuaries (Fig. 3). Two ossuaries show significant variation between the sexes: Ossuary 2 females have higher caries rates for molars than males and Ossuary 5 females have greater overall caries rates than males.

Periapical lesions

Although periapical lesions were relatively few among all samples, lesion prevalence is significantly greater in the pre-contact sample (Fig. 3, Table 3). Sex differences within samples indicate that males have a higher lesion prevalence than females.

Table 3. Periapical lesion and antemortem tooth loss prevalence for adults by ossuary and combined samples

	Periapical Lesions		Antemortem Tooth Loss	
Ossuary	n	%	n	%
MBP	8	13	21	35
1	34	3	256	19
2	251	7	785	19
3	5	4	49	10
4	103	7	10	8
5	42	3	371	24
Post-contact	42	3	277	19
Pre-contact	409	7	1215	19

Antemortem tooth loss

Antemortem tooth loss is common for adults in all samples (Table 3). Significant differences do not exist between pre-contact and post-contact samples (Fig. 3); however, post-contact males have greater posterior tooth loss than pre-contact males. Comparisons by sex among ossuaries indicate that females consistently have higher levels of antemortem tooth loss than males.

DISCUSSION

The results of this research are summarized as follows. Except for Ossuary 5, all samples are represented by a small percentage of juveniles and an abundance of adults of indeterminate sex. Juvenile data were only collected for dental caries and were pooled with adults for the permanent dentition only. The post-contact multiple burial pit consistently had the highest prevalence of dental pathological indicators for each category. However, this sample is the smallest (n = 7), so less confidence should be placed in these results. Ossuary 1, the other post-contact sample, had lower than expected prevalence data for dental health indicators. The lower lesion prevalence for Ossuary 1 may be due to the younger age composition of the adults in this sample. The combined post-contact samples had significantly greater caries prevalence than the pre-contact sample. The pre-contact sample had more periapical lesions than the post-contact sample, and there were no differences between pre- and post-contact samples for antemortem tooth loss. There was a trend towards higher caries rates and antemortem tooth loss for females, and higher periapical lesions prevalence for males.

An appraisal of the demographic distribution of the ossuaries from the Potomac Creek site reveals considerable variation. The small sample size and lack of available sex data precluded some comparisons with the multiple burial pit and Ossuary 4. Tooth wear estimates for each burial sample reveal that Ossuary 1 and Ossuary 2 have more young adults than older adults, while the converse is true for the sample from Ossuary 5. Therefore, age may be a confounding factor in prevalence data for Ossuaries 1, 2, and 5.

Dental caries

At the Potomac Creek site, caries rates increased after contact with the Jamestown colonists. An increase in caries rates after European contact has been documented elsewhere in the New World after contact. For example, Larsen and colleagues (1991) suggest that the post-contact increase in caries rates for native populations in La Florida was due to increased production and consumption of maize, concomitant with the change to a mission lifestyle. The Patawomeke were probably producing more maize as well, since they supplied maize and other foods to the colonists on several occasions (Potter, 1993).

The trend of higher caries rates for females is not uncommon in populations dependent upon maize. Studies show higher caries rates for females in agricultural populations in the New World, probably due to sex-based differences in food preparation and consumption (Hillson, 2000; Larsen *et al*., 1991).

Periapical lesions

Contrary to the expected results, periapical lesion prevalence decreases after contact. It is often difficult to identify the cause of periapical lesions, but its etiology is commonly linked to dental caries and severe dental wear (Hillson, 2000). A number of possible causes for the higher rates of periapical lesions among the pre-contact population can be proposed: 1) a change in diet associated with contact, 2) poorer oral hygiene, or 3) more abrasive foods in the diet (causing more dental wear).

Males display more periapical lesions in half of the samples from the Potomac Creek site. These results are unexpected due to the higher caries rates in females and ethnohistoric evidence for females consuming more cariogenic foods. A possible explanation for this difference is a higher rate of antemortem tooth loss among females; if females are losing more teeth, or losing them earlier than males, it is likely that the prevalence of periapical lesions would be lower among females.

Antemortem tooth loss

Antemortem tooth loss appears not to have changed over time. However, a comparison of male posterior teeth demonstrates that antemortem tooth loss did increase after contact. These results approximate the expected outcome for this analysis. Furthermore, in three of the samples (Ossuaries 2, 3, and 5), females had significantly higher rates of tooth loss than males, possibly elucidating the unexpectedly higher periapical lesion prevalence among males. A greater rate of antemortem tooth loss among females is consistent with the sex-based differences in diet.

CONCLUSIONS

The dental pathological indicators used in this study provide information about diet, nutrition, and physiological stress among the Patawomeke and insight into the dental health of this population. This research suggests that the arrival of Europeans in the Chesapeake Bay had a profound impact on the dental health of native populations. It was expected that the Patawomeke populations would have been acutely affected since they dealt first-hand with Europeans, as both allies and, at times, enemies. The Patawomeke often provided the major source of subsistence to the Europeans, trading bushels of corn for copper, beads, and other non-food items (Potter, 1993; Smith, 1986b). The trading of valuable food resources would have put a strain on native populations. English colonists also resided in close proximity to the Patawomeke on several occasions (Potter, 1989), especially in times of war with the Powhatan. The close quarters may have facilitated the spread of diseases to which natives were not immune, and would have put a strain on their subsistence resources and daily activities.

This study reveals significant differences in all three dental pathological indicators between sexes, a phenomenon that has been observed in other agricultural populations (*e.g*. Cohen and Armelagos, 1984). A post-contact decline in dental health and dietary quality has also been documented in many regions of North America, including the Northeast (Baker, 1994), the South (Hill, 1996), the Southwest (Stodder and Martin, 1992), and the West (Walker and Johnson, 1992). Other studies, however, indicate that late prehistoric levels of dental pathology were already high due to the intensification of agriculture, and that contact with Europeans did not affect the dental health of natives (Miller, 1996; Pfieffer and Fairgrieve, 1994; Reinhard *et al*., 1994). The results of this study support the hypothesis that Native American dental health declined after contact with Europeans in the Chesapeake Bay. This research suggests that the dental health of the Patawomeke of the Potomac Creek site declined following founding of Jamestown due to multiple factors, including: (1) a change in diet, (2) exposure to new diseases, (3) warfare or conflict, (4) strain of resources, and (5) increased population density.

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DAA Web Site Updated and Expanded

Thanks to the efforts of Sally Graver (Ph.D. student, Ohio State University), the Dental Anthropology Association Web site has a new home. The new Web site address is:

http://monkey.sbs.ohio-state.edu/DAA/index.htm

This is located on the Ohio State University Department of Anthropology's server. Notice that this address is different from that published in the last issue—and should be more robust.

Alma Adler designed the Web site, which currently has links to the membership form, Dahlberg Prize announcement, and to Phil Walker and Ed Haagen's quick-time movies of the dentition.

In addition, we have begun providing back issues of *Dental Anthropology* on our Web site as PDF files. The Dental Anthropology Association is making these available as a professional courtesy to all interested parties—the site is *not* password-protected. After downloading onto your computer, these files will open using version 6.0 or later of Adobe Acrobat. Each file is one issue of the journal. We developed these in one of two ways. For the older issues that had not been saved in electronic format, hard copies were scanned (at 300 dpi). The newer issues were generated using Adobe InDesign and then converted to PDF files. The newer issues (from vol. 15 no. 2) contain color figures.

To facilitate downloading, file sizes were, however, aggressively down-sampled. If you have problems with the resolution or encounter other problems with the files, please contact the Editor (eharris@utmem.edu). As of this writing, volumes 13 through 17 are available at our Web site. The older issues will be added over the next few months.

Please visit the site and let us know what you think!