Predisposition to Carotid Atherosclerosis in ICARAS Dental Substudy

To the Editor:

We read with interest the study by Schillinger et al,1 who concluded that dental status is associated with the degree of carotid stenosis and predicts future progression atherosclerosis. However, a clear link between both conditions is missing in the study. We think that the following points may play a role in that association and help to understand the substudy findings:

The clinical assessment in the ICARAS dental substudy may not rule out, as suggested also by the authors in the discussion, the possibility of antecedental or concurrent subclinical infection. Unfortunately, no retrospective data are available to ascertain the cause of tooth loss influencing DMFT scoring and edentulous prevalence.

The role of chronic infection, in both the initiation and progression of atherosclerosis, has been suggested in recent times. Thereby, many studies focused on both clinical signs and serological markers of infections.2

The assessment of Helicobacter pylori serological markers in the studied population may be valuable because of the reported strong association with dental diseases. It has been suggested how H pylori may be present in dental plaques,3 also there is a raised prevalence of H pylori among edentulous subjects. Furthermore, seropositivity in adult life is directly proportional to the number of tooth loss.3 Other studies reported a significant association between H pylori and atherosclerosis.4

If H pylori may trigger a chronic inflammatory response leading to vascular complications, odontopathogens (ie, Porphyromonas gingivalis, Streptococcus sanguis, etc) are also supposed to play a role in atherogenesis. Exposure to periodontal infection might influence the development of vascular diseases.5 Evidence from recent epidemiological studies suggests a link between periodontal infections and risk of vascular events.6 DNA of typical periodontal pathogens was demonstrated in atheromatous plaques, and a low or moderate association between existing periodontitis and the development of vascular events had been observed.5–7

Another crucial point deals with the socioeconomic status of the enrolled population being known that there is a relation between adverse socioeconomic conditions and both dental diseases and atherosclerosis. Race/ethnicity, education, and socioeconomic environment are important for periodontal health. Poverty and residence in a disadvantaged neighborhood are associated with higher odds of periodontitis.8 At the same time, low socioeconomic status (education and occupational status) is associated with progression of atherosclerosis.8 The association between gingivitis, dental caries and tooth loss with the presence of angina pectoris is often modifiable when corrected with the socioeconomic status.2

Not surprisingly also is the association between adverse socioeconomic circumstances in childhood and both adult dental diseases and atherosclerosis. Children who grew up in low socioeconomic status families have poorer dental health including dental caries, plaque scores, gingival bleeding and periodontal diseases compared with those from high socioeconomic backgrounds. Also, adverse socioeconomic circumstances in childhood confer a greater risk for adult-life vascular diseases.8

Denture wearing and edentulism are common in older patients and can be related to poor quality of life, low incomes and risk for undiagnosed oral disease and may be a marker for other medical comorbidities. Search for a chronic subclinical infection with H pylori or different odontopathogens, and evaluation of the socioeconomic circumstances, not only in adult life, but also in background childhood period, may help to explain the association between dental conditions and atherosclerosis.

Disclosures

None.

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