

Flyer's Toothache

<By **Dr. Alaa Awadallah***

Once referred to as "flyer's toothache," barodontalgia is defined as tooth pain occurring with changes in ambient pressure. It usually occurs in people who fly or dive. It can develop in conjunction with sinusitis, and in teeth experiencing pulpitis after restorative treatment, new and recurrent caries, intra-treatment endodontic symptoms, dental and periodontal cysts, or abscesses. Although the causal process of barodontalgia is not well understood, it may be related to pulpal hyperemia, or to gases that are trapped in the teeth following incomplete root canal treatment. Patients who are frequently exposed to changes in ambient pressure should be encouraged to follow good oral health practices, attend regularly-scheduled dental recall examinations and accept the timely completion of restorative treatment to minimize the possibility of developing barodontalgia. By employing a classification system to document cases of barodontalgia, dentists will be better prepared to provide appropriate and successful treatment.

Of 11,617 personnel participating in simulated high altitude flights up to 43,000 feet, only 30 (0.26%) complained of toothache (barodontalgia). The cause of the barodontalgia in 28 episodes of pain in 25 of these subjects was investigated. Chronic pulpitis was suspected as the cause in 22 cases and maxillary sinusitis in 2. No pathosis was detected in the other four. In 10 cases in which the pulpitis was treated by root filling or replacing a deep filling, subsequent exposure to low pressure caused no pain.

Objective

Dental pain caused by barometric pressure change in an otherwise asymptomatic tooth, known as barodontalgia,

is nowadays of a minor concern for the aviation surgeon and dentist. During World War II, 9.5% of the American military aircrews had reported at least one episode of barodontalgia. Publications regarding the 1960s to 1990s have reported a prevalence of 0.23% to 0.3% in hypobaric chamber simulations. However, in-flight environmental conditions are different from hypobaric chamber conditions. Moreover, aviation platforms have dramatically changed in recent decades. The purpose of this study is to assess the current in-flight incidence of barodontalgia and to find out the various dental pathologies as etiologic factors.

Results

331 (73.6%) aircrew members. Of them, 27 (8.2%) reported at least one event of barodontalgia: 6.5% of the fighter, 6.6% of the transport and 8.6% of the helicopter aircrews. Dental diseases were the major causative pathology, responsible to 67% of the cases: pulpitis (40.7%), pulp necrosis/apical periodontitis (18.5%), vertical root fracture (3.7%) and impacted tooth (3.7%). 18.5% of the barodontalgia cases were due to barosinusitis. None of the subjects has reported of premature mission cessation because of dental pain.

Conclusions

A considerable number of military aircrews, from all the aviation platforms, have reported barodontalgia events. Pulp diseases are the major causative pathology of barodontalgia. Aviation surgeons and dentists must be aware of this phenomenon, and use preventive measures among aircrew members.

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