

EDITORIAL

Aviation Dentistry – An Unexplored Avenue

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Higher altitudes cause significant reduction in air density and air pressure that may have various negative effects on aviators. There have been tremendous changes in the dental practice and education over the past few years, with more focus being towards the preventive dentistry. In this modern era of industrialization, there has been a rapid expansion in the airlines industry with air transport being the chief mode of transport. Thus the chances to encounter flight related oral conditions in pilots, flight attenders and crew members have also been increased. Hence the need of the hour is to pay special attention towards the oral health of these people.

The aviation dentistry primarily deals with the oral and dental health status of the aviators. It consists of principles of prevention and treatment, disorders or conditions which are related to the oral cavity and maxillofacial area and their impact on those who travel in such an environment where there is change in pressure than that of the normal atmospheric pressure such as paranasal sinuses, lungs, stomach, middle ear cavity etc. There are various organs in the human body that contain air. Gas pockets can also be seen in dental abscesses, periodontitis, deep carious lesions and deep, unlined restorations. Hence under the conditions of reduced air pressure these gas pockets in the body tend to expand resulting in pressure build up which may cause pain, discomfort and impaired organ function. Various manifestations of the change in pressure;

1. Barotrauma - condition caused by a difference in pressure between a gas space inside the body and the surrounding fluid due to the lower atmospheric pressure. Includes conditions like barodontalgia, external otitic barotrauma, barosinusitis, barotitis-media, barotrauma-related headaches, dental barotrauma, and.

Barodontalgia - pain caused by a change in barometric pressure in an otherwise asymptomatic organ. Pain related to periapical disease can appear during ascent as well as descent and disappears on returning to the ground level. Studies have shown that dental pain in barodontalgia is mainly due to increased atmospheric pressure resulting in expansion of trapped air bubbles.

Barometric tooth explosion – also known as barodontocrexia or odontocrexia. It occurs in teeth having pre-existing leaked restorations or recurrent carious lesion resulting in tooth explosion when exposed to sudden changes of atmospheric pressure. It is due to sudden expansion of gas bubbles trapped beneath these restorations.

Barosinusitis – also caused due to increased atmospheric pressure because of negative air pressure developed within the sinuses leading to their inflammation and ultimately dental pain.



2. Prosthetic Considerations – Retention of both maxillary and mandibular dentures are hampered due to changes in barometric pressure. These changes are more pronounced in maxillary than mandibular denture due to the effect of gravity.
3. Restorative Dentistry – Because of low temperature at higher altitudes there is differential thermal contraction in amalgam restoration as compared to tooth hard tissue resulting in the fracture of restoration.
4. Periodontal considerations – Hyposalivation and Xerostomia are the two important risk factors for carious lesions in teeth. Also it may result in increased chances of periodontal disease. Dryness of mouth can be due to breathing of dry compressed gases in the aircraft.
5. Oral Surgery – While extracting maxillary teeth the existence of any oro-antral communication should be ruled out so as to prevent the development of sinusitis at higher altitudes.

