

Dental Screening at 35,000 Feet-Why Not!

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To the Editor,

Aviation dentistry refers to the evaluation, prevention, and management of oral and maxillofacial diseases in air travel passengers and crew members [1]. Cruising at a height of 35,000 feet, flight journeys are long, and often spent on non-productive tasks. This duration of the flight journey can be put to optimal healthcare use, by conducting in-flight dental screening of all the passengers.

In-flight dental screening can prove beneficial for passengers who are ignorant of their oral hygiene status, thereby motivating them to seek dental treatment at the earliest if necessary. The incipient soft tissue lesions, which are often missed by the patient, can be caught at an early stage, proving beneficial for the patient. It can also promote dental tourism, especially in the case of international passengers seeking dental treatment in a foreign land [2].

The society is spending a lot of time travelling at high altitudes. However, there is a lack of literature surrounding the complications associated with uncompensated alterations of pressure at higher altitudes [3]. Barotrauma can occur as a result of the pressure difference between the body fluids and atmospheric pressure [4]. Barodontalgia is the manifestation of dental pain due to barometric pressure changes in the external environment [5]. Tooth fractures caused by a high-altitude environment, due to gas entrapment beneath faulty restorations have been termed odontocrexia [6]. Dental emergencies like head and face barotrauma, barodontalgia, and odontocrexia have been underreported during commercial air travel, due to lack of awareness among the cabin crew and general public [7]. In a study by Phillips et al., 24.4% patients with brain tumour reported of worsened symptoms during an air flight [8]. Such dental emergencies can be addressed by onboarding an in-flight dental surgeon. Additionally, in-cabin dental professionals can also be trained to handle in-flight medical emergencies like syncope, seizures and respiratory distress [9].

However, certain potential problems may be encountered during the practical application of this hypothesis. Firstly, there is a space constraint in the aircraft cabin [10]. A separate dental operatory section will have to be created, which would be at the expense of certain seats. Moreover, the operatory would have to be designed in a way to provide adequate space for the dental chair, and the operator. A separate lab area will also have to be incorporated. Secondly, in-flight turbulences may act as hindrances during operative dental procedures [11]. While turbulence is sometimes unavoidable, its effect can be dampened. One way could be to set up the dental operatory over the wings of the aircraft, which helps the aircraft to

remain balanced. Lastly, in domestic flights with shorter duration, dental procedures may not be carried out due to time constraint. However, dental screening can be performed in such flights.

The dental institutions and regulatory bodies across the globe, in collaboration with their civil aviation authority board should plan and implement in-flight dental screening programs. Aviation dentistry-based guidelines have to be formulated for the smooth functioning of dental screening. Several dental practitioners can be recruited and trained for conducting in-flight dental screening, which would further improve the employment of dentists.

Installation of a dental unit with basic diagnostic instruments should suffice for preliminary screening of the passengers. Emergency medical kits and drugs can be maintained on board. Portable radiographic units can be used, provided they do not interfere with the flight's wireless system. Initially, the presence of barometric pressure changes may hinder the initiation of operative and restorative dental procedures. However, the construction of a dental operatory with an optimal cabin pressure control system may eventually facilitate operative dental procedures in the air. This could prove to be revolutionary in converting the vision of an aviation dental clinic into a reality. Aviators and dental practitioners should embrace all available opportunities for incorporating and promoting oral and dental health and wellness.

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