The Result of Surfer's Ear Medical Check Up in Surfing Competition
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Objective: The objective of this study was to demonstrate the prevalence and severity of external auditory canal exostoses in a population of competitive surfers. We utilized a surfing index, the product of the period (years) as an active surfer and the frequency (the number of surfing days per week) to predict external auditory exostoses formation.

Study Design: Retrospective epidemiological study.

Methods: The ear canals of 373 surfers with an average age of 33.1 (11-80) years were examined with an otoscope in a total of five surfing competitions. The severity of exostosis was classified into 4 groups, from grade 0 to 3, according to otoscopic findings. Subjects also completed a questionnaire detailing their surfing habits. The survey was done by using original iPad application for this study.

Results: There was a 59.8% overall prevalence of exostoses in 373 surfers. The incidences of grade 1 exostoses, grade 2 and 3 exostoses were 118 (31.6%), 71 (19.0%) and 34 (9.1%) respectively. The prevalence of grade 2 and 3 exostoses was higher in surfers with a surfing index of more than 20 (p<0.0001).

Conclusions: We determined that a positive association exists between the surfing index and the severity of exostoses. Our findings suggest that it is possible to assume the likelihood of exostosis formation from the surfing index, and this may be of help to spread awareness of exostosis among surfers.

Introduction

Surfer’s ear occurs in avid surfers who have been surfing for a long time. It refers to the bony prominence of external ear canal that is formally known as exostoses, and it thought to be formed by continuous cold water stimulation. The objective of this study was to demonstrate the prevalence and severity of exostoses in a population of Japanese surfers, and to determine the relation between the surfing habits and the surfing index.

The ear canals of 373 surfers with an average age of 33.1 (11-80) years were examined with an otoscope in a total of five surfing competitions. The severity of exostosis was classified into 4 groups, from grade 0 to 3, according to otoscopic findings. Subjects also completed a questionnaire detailing their surfing habits. The survey was done by using original iPad application for this study.

Results

373 surfers participated in this study, 309 were male, 64 were female. The mean age of male was 33.5 years old, and that of female was 31.4. The mean number of years spent surfing in male was 15.0 years, and that of female was 9.9 years. Exostoses were found in 59.8% out of 373 subjects, with 31.6% being grade 1, 19.0% being grade 2, and 9.1% being grade 3. More than half of the subjects had some degree of exostoses.

The average of surfing index was 94.9 for 81 professional surfers and 33.9 for 292 amateurs. Professional surfer tended to have a greater surfing index than amateurs did. However, there was little difference in exostoses formation between professional surfers and amateurs if the surfing index was equal.

In this study, most of the subjects were male. The incidence of exostosis formation in female was not as great as in males, even for professional surfers. Males tended to exhibit more severe exostoses than females did if the surfing index was equal (p<.0001).

Figure 1 shows the relationship between exostoses and the surfing index. In this figure, the vertical axis indicates the number of surfers, and the horizontal axis indicates the score of the surfing index. The prevalence of exostoses from grade 1 to 3 increased with a higher surfing index compared to grade 0 exostosis. When the index was less than 10, grade 3 exostoses were not observed. Compared to both grade 0 and grade 1 exostoses, the prevalence of grade 2 or more severe exostoses increased when the surfing index exceeded 20. (p<.0001)

Discussion

The prevalence of exostoses correlates with the number of years as an active surfer. However, subjects with grade 2 or more exostoses were found in the groups with only 5 years of surfing experience. Usually, avid surfers continue surfing for a long time, and 5 years of surfing experience is relatively-inexperienced. In this study, 82.0% of subjects had been surfing for more than 5 years. In addition, there were a number of subjects with grade 0 exostoses whose surfing experience exceeded 25 years. Therefore, it was thought to be inappropriate to predict the formation of exostoses only from the number of years spent surfing.

In this study, we utilized a “surfing index” to predict the relative risk of exostosis formation. This surfing index was thought to reflect the cold water exposure of surfers better than the number of years surfing alone. In Japan, surfers with a surfing index exceeding 20 are likely to have grade 2 or more severe exostoses (P<.0001) (Figure 1). This relationship between the surfing index and exostosis formation may vary according to the water temperature or other environmental factors. The reason why most experienced surfers did not always have the severest form of exostoses may be due to the amount of surfing the subject does in winter. A number of “avid surfers”, actually start or do a lot more surfing when the water temperature begins to warm up.

Conclusion

During the worldwide revival of surfing boom that started in the 1990s, a number of people of all ages centered their lives around surfing, and surf throughout the year. Unlike the thermal insulation provided by a high-performance wet suit, the surfer’s external ear canal is frequently exposed to the cold water. Therefore, cases of severe exostoses that need treatment are expected to increase in the future and otolaryngologists should be concerned as these cases become more common.

Reference