Tworzenie biofilmu Candida na protezach głosowych Provox®2 oraz Provox Acti Valve Candida biofilm formation on Provox®2 and Provox Acti Valve voice prosthesis

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Introduction: Patients who underwent laryngectomy due to larynx cancer have a possibility to regain ability to speak with the use of silicone voice prosthesis. However, the lifetime of the device is limited, and last for approximately 3–6 months, mainly due to bacterial and fungal biofilm formation, that subsequently causes deterioration of the prosthesis and malfunction of the valve mechanisms. Moreover, the biofilm can be reservoir for chronic and systemic infections.

Aim: The aim of the following study was to investigate Candida biofilm formation on silicone voice prosthesis.

Material and methods: Experiments were performed using C. albicans and C. krusei fungal strains with Provox®2 and Provox Acti Valve voice prosthesis. Fungal biofilms were examined under various magnifications using SEM technique.

Results: Scanning electron microscopy revealed that Candida biofilms formed on voice prosthesis had highly heterogeneous structure and were composed of blastospores, pseudohyphae, hyphae and „germ tubes” encased in an extracellular material. Noticeable differences in biofilms structure depended on Candida species and type of voice prosthesis.

Conclusions: Presented data throws light on problems concerned fungal colonization on indwelled medical devices.

Key words: Candida, biofilm, voice prosthesis, SEM

Słowa kluczowe: Candida, biofilm, protezy głosowe, SEM