

Fungal colonisation of tracheotomy tubes in patients diagnosed with larynx cancer

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Tracheotomy involves a high percentage of complications in both its early and latter stages. The colonization of tracheotomy tubes by micro-organisms may be a significant risk factor of numerous infections. The objective of the study was to evaluate the degree of fungal colonization of tracheotomy tubes collected from patients diagnosed with laryngeal cancer. The research was carried out in a group of patients diagnosed with laryngeal cancer and treated at the laryngological ward of the ENT Clinic of Jagiellonian University Medical College in Cracow between 2012 and 2014. Although 31 patients were initially qualified for the study, only 17 managed to meet the final research criteria. Portex-type and metal tracheotomy tubes were collected from the patients and were subjected to mycological examination. Portex tubes were collected within a day after tracheotomy (on the day when the tube was exchanged for the first time) whereas the metal tubes were collected during another exchange, on average on the 14th day after the operation. The fungi were classified according to the mycological criteria. In total, 30 tubes were collected (17 Portex tubes and 13 metal ones). Two tubes of both types were collected in the case of 13 patients. The fungi were cultured in 21 cases (67.4%) and they were more commonly isolated from Portex tubes than from metal ones: 10 (76.9%) vs 11 (64.7%). In the group of patients from whom both types of tubes were collected, fungal cultures were isolated from both Portex and metal tubes in 8 of 13 cases (61.5%). The majority of tubes (n=16; 76%) were colonised with fungi belonging to genus *Candida* and the colonisation with yeasts was observed in six cases (28.6%). Fungi belonging to genus *Candida albicans* were isolated from the tubes more frequently than those belonging to genus *Candida non-albicans*; however, the latter were more common on Portex tubes. Yeasts were isolated mainly from Portex tubes and they belonged to the genera *Aspergillus fumigatus* and *Aspergillus flavus*. Only in two cases were both tubes collected from the same patient found to be colonised by the same type of fungus (*Candida albicans*).

Fungi belonging to genus *Candida* tend to colonise tracheotomy tubes more frequently than yeasts. Isolation of the same fungal species from both types of tubes collected from the same patient was insignificant.