

Article (1)

Could fungi be detected in the fluid of persistent otitis media with effusion

Abstract:

Background: Otitis media with effusion (OME) often is considered a direct extension of the inflammatory process that occurs during long-lasting or recurrent episodes of acute otitis media. The observations above suggest that OME has an infectious etiology. Most bacterial and viral cultures of middle ear fluid that had been performed were often negative suggesting that other infectious agents may be involved such as fungi.

Materials and methods: Thirty patients (group A) suffering from chronic secretory otitis media (OME) were enrolled in this study. Three samples were collected and investigated using PCR assay with universal fungal primers and Sabouraud agar. The first sample was obtained from the fluid of the middle ear before insertion of the ventilation tube; the second sample was obtained from nasal secretions; and the third sample was obtained from the ipsilateral peritubal area of the nasopharynx. Thirty patients (group B) with comparable age group without history of ear diseases scheduled for tonsillectomy or adenotonsillectomy were added as a control group. Samples from peritubal area of the nasopharynx of patients and nasal secretion were tested using PCR assay with universal fungal primers and Sabouraud agar.

Results: PCR examination of the middle ear aspirate in group (A) cases was positive in 7 cases (23.3%), in nasal secretions samples 2 cases only (13.3%) were positive and no positive cases were detected in nasopharyngeal swab samples. In group (A), Sabouraud agar culture was positive for fungal culture of middle ear aspirates in 5 cases (16.6%) but in no cases for nasal secretion samples. Group A showed also negative (N0) growth in 30 (100%) patients for nasopharyngeal swab on Sabouraud agar. In group B, the findings of nasopharyngeal swab were negative (N0) growth in all examined samples on Sabouraud agar, and nasal secretions were also negative for fungal DNA detection using PCR assay.

Conclusion: In this study, fungal DNA could be detected in the middle ear fluid in seven (23.3%) of 30 patients with persistent OME using PCR assay, and fungi could be detected in five (16.6%) patients on Sabouraud agar. A significant relationship was found between detection of fungi in the middle ear fluid and the duration of the disease, associated adenoid, and history of asthma.

Keywords: middle ear, otitis media, effusion-fungi, PCR