

THE INFLUENCE OF MICROLARYNGEAL SURGERY ON THE OROPHARINGEAL COLONISATION AND BACTERIEMIA

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BACKGROUND

Microlaryngeal surgery (MLS) is a relatively simple and well-tolerated procedure that can provide both diagnostic and therapeutic benefits. There are no data regarding the risk of acquiring bacteremia after MLS.

The purpose of this prospective study was to assess the frequency of bacteremia and nosocomial colonization following MLS in patient and to identify possible risk factors for the development of these complications.

RESULTS

In this study evaluated totally 55 patients (45 male and 10 female) who underwent MLS. The average age 51,4 years (age ranges; 23-99 years). A total of 108 isolates were recovered from preoperative throat cultures (PTC). One type microorganism was isolated from 10 patients. Two and more type microorganism was observed in 22 and 23 patients, respectively. Alpha-hemolytic Streptococci was the most common isolate overall(40,7), followed by Neisseria spp. (36%). Table 1 shows the distribution of bacteria isolated from throat cultures preoperative.

Colonization of Candida spp. was detected in 9 patients (16,4%) at preoperative throat cultures. Gram (-) bacil colonization (E. coli, Klebsiella spp, Acinetobacter spp, Pseudomans spp, eg) was detected in 16 patients (29,1%). Nosocomial colonization was found in 14 patients (25,5%) at postoperative 24th hours (Table1). Of these 14 patients in 8 patients (57,1%) were have malign pathology.

Nosocomial colonization was not detected in 41 patient (74,5%) and of these patients 9 patients (21,9%) have malign pathology. This difference was statistically significant. Therefore nosocomial colonization was found related to malignancy (p:0,014). There is not statistically difference between age groups for nosocomial colonization (53,7 vs 50,6, p:0,566).

Colonization of Candida compared in terms of average age was statistically significantly higher in the group of advanced ages (64,9 vs 48,8 p:0,009). There is 38 benign (69,1%) and 17 malign (30,9%) pathology found postoperatively. Benign and malignant lesions were compared in terms of mean age significantly higher in patients with malignant lesions (61,6 vs 46,9 p:0,002).

Preoperatively the mean preoperative CRP level was 11.7 in patients with Candida spp colonization in throat culture, while those without colonization was lower than 3.79. This result is statistically significant (p:0,003). In same patients postoperatively CRP levels were higher compared to other patients (10,2 vs 3,89 p:0,005). Preoperative and postoperative CRP levels were significantly higher in patients with colonization of Candidaspp compared to patients that without. CRP levels of patients before and after surgery were not statistically significant (p:0.514).

Postoperative 5. and 24. hours blood cultures of all patients were negative. Postsurgical bacteremia was not observed in any patient.

METHODS

In this study, 55 consecutive patients with benign or malign laryngeal pathologies undergoing DRL were included between January 2010 and January 2011. The patients have benign laryngeal lesions such as vocal cord nodules, polyps, Reinke edema and granuloma and suspicious malignancy.

The patients with immunosuppression, additional malignant or chronic diseases were excluded from the study. Preoperative and postoperative antibiotic therapy was not given the patients. The patients excluded from the study that required endocarditis prophylaxis. In appropriate circumstances of each patient prior to intubation and postoperative 2, 5 and 24 hours of throat swab samples were taken in the transport medium of the patients who DRL planned and underwent surgery.

The samples evaluated in Microbiology Department of Mersin University. All specimens were cultured on culture plaques. Aerobic cultures were performed on 5% sheep blood agar, EMB agar, and Seboraud agar and incubated at 35°C. Biological isolates were identified with the help of VITEK 2 (Biomeriux, French). The number of reproducing bacteria (cfu) and type of bacteria in the samples taken from each patient preoperative and the postoperative 2, 5 and 24 times were compared. Blood cultures were performed using BACTEC 9240 (Becton Dickinson, Franklin Lakes, NJ, USA) automated system at postoperative 5. and 24. hours.

Each patient also received preoperative and postoperative period, CRP levels in blood samples (BN Prospec, Behring, Germany) were measured.

Table1. Distribution of bacteria isolated from throat cultures preoperative and postoperative nosocomial colonization.

Microorganisms	Number
Preoperative throat cultures	
Alpha-hemolytic Streptococci	44
Neisseria spp.	39
C.albicans	9
K.pneumoniae	9
S.aureus	2
Coagulase-negative Staphylococcus spp	2
A.baumannii	2
P.aeruginosa	1
Total	108
Nosocomial colonisation	
S.aureus	3
C.albicans	3
K.pneumoniae	3
E.coli	2
Coagulase-negative Staphylococcus spp.	1
Enterococcus spp.	1
P.aeruginosa	1
Total	14

CONCLUSION

Bacteraemia secondary to orotracheal intubation has been reported to occur in 0-5.3% of patients. We found that the rate of bacteremia 0%. This is a lower incidence than occurs in association with other procedures. This could be a well tolerated and precise microsurgical technique which has zero risk of bacteremia.