Periodical changes of the histological features in nasal polyps over 17 years

Su Jin Kim1; Seung Youp Shin1; Kun Hee Lee1; Sung Wan Kim1; Joong Saeng Cho1

1Department of ORL-HNS and 2Pathology, School of Medicine, Kyung Hee University, Seoul, Korea

ABSTRACT

Objective: Depending on inflammatory cell infiltration, nasal polyp can be categorized as eosinophilic or non-eosinophilic. There is a geographical difference in the prevalence of eosinophilic nasal polyp in different parts of the world. There is a question whether these are geographic or congenital. This article aims to evaluate the periodical changes of the histological features of nasal polyps.

Methods: A total of 230 patients, each confirmed with a polyp biopsy, were enrolled between 1993 and 2010. Specimens were reviewed by two clients, who were blinded to the time of surgery. The slides were stained with H&E, which was confirmed by two authors. In total, 560 cases were reviewed. The eosinophilic count was obtained by taking the average of the manual cell count of the selected 10 fields in the x400 high power field (HPF). It was defined as an eosinophilic polyp when the average eosinophil count was more than 5 eosinophils/HPF.

RESULTS

When the average eosinophil count/HPF of nasal polyp between the two groups were compared, the average eosinophil count of group A was 6.79 ± 15.9 and group B was 19.3 ± 32.1. These findings showed that group B increased significantly in the average eosinophil count (p=0.006).

When the percentage of eosinophilic polyp (showing over 5 eosinophils/HPF) between the two groups were compared, eosinophilic polyps increased significantly from 24.0% in group A to 50.9% in group B (p<0.001).

In cellular markers, other than eosinophils, neutrophils and plasma cells were observed more in group A, but there were no significant differences. However, lymphocytes were observed more in group B and there was a statistically significant difference (p=0.010).

In epithelial markers, hyperplasia of seromucinous glands were observed more in group A and there was a statistically significant difference (p<0.001).

In stromal markers, hyperplasia of seromucinous glands were observed more in group A and there was a statistically significant difference (p<0.001).

CONCLUSIONS

The results of comparing the histopathology of nasal polyp in Koreans, with only the time difference of 17.6 years, confirmed that the percentage of eosinophilic polyp, known to be rare in Asians including Koreans, had actually increased. The eosinophilic count/HPF of nasal polyp had significantly increased from 6.79 ± 15.9 of 17.6 years before. The proportion of eosinophilic polyp also significantly increased from 24.0% to 50.9%, with other histopathologic findings supporting these results.

METHODS AND MATERIALS

For the comparison with the time interval, 110 cases, from 1993 and 1994, were chosen as the older samples, which were made possible to review from the samples stored in our hospital. These were identified as group A, and 120 cases, from 2010 and 2011, were chosen to be group B.

The eosinophil count was obtained by taking the average of the manual cell count of the selected 10 fields in the x400 high power field (HPF). It was defined as an eosinophilic polyp when the average eosinophil count was more than 5 eosinophils/HPF.

Other than the eosinophils, neutrophils, plasma cells, and lymphocytes were examined in the 10 different fields as cellular markers, and were categorized into categorical variables depending on the degree of cell infiltration. Epithelial and stromal markers were also assessed and categorized.

CONCLUSIONS