Effects of partial tonsillectomy on the immune functions of children with obstructive sleep apnea-hypopnea syndrome at early stage

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ABSTRACT. The purpose of this study was to investigate the changes in the humoral and cellular immunity of children with obstructive sleep apnea-hypopnea syndrome and hypertrophy of tonsils before and after plasma-mediated temperature-controlled radiofrequency ablation treatment. Fifty-seven children suffering from obstructive sleep apnea-hypopnea syndrome and with hypertrophy of tonsils were enrolled in this study. Thirty-seven children were grouped in the partial tonsillectomy group and 20, in the tonsillectomy group. The levels of CD3+, CD4+, CD8+, and CD4+/CD8+ were measured for cellular immunity, and the levels of IgG, IgA, and IgM were measured for humoral immunity. Blood samples were collected before and 1 and 3 months after the operation. The IgG, IgA, and IgM levels in the tonsillectomy group were significantly decreased 1 month after the operation, and recovered to the normal levels within 3 months of the operation (P < 0.05). However, the levels of IgG, IgA, and IgM in the
partial tonsillectomy group decreased slightly, without a significant difference (P > 0.05). The cellular immunity of the 2 groups was not statistically different pre- and post-operation (P > 0.05). The results from the present study indicate that partial tonsillectomy by plasma-mediated temperature-controlled radiofrequency ablation did not impact on the humoral and cellular immunity of children.

**Key words:** Obstructive sleep apnea-hypopnea syndrome; Immune; Plasma-mediated temperature-controlled radiofrequency ablation; Children