THE USEFULNESS OF ARGON PLASMA COAGULATION IN THE TREATMENT OF GaSTRIC ADENOMA KNOWN AS A PREMALIGNEANT LEsION OF STOMACH CANCER: COMPARE WITH THE ENDOSCOPIC SUBMUCOSAL DISSECTION GROUP

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Introduction: Argon plasma coagulation (APC) is a method of contact-free electrocoagulation in which energy is transmitted to the tissue through ionized argon gas. APC has been widely used to treat many gastrointestinal diseases. Recently, its application has been broadened into the field of the treatment of gastric adenoma known as a premalignant lesion of stomach cancer. The aim of our study was to assess the usefulness of APC in treating gastric adenoma through comparison with the group Endoscopic submucosal dissection (ESD).

Methods: We studied 231 lesions of 210 patients with gastric adenoma, in which patients were treated with APC (108 lesions of 97 patients) and ESD (123 lesions of 113 patients) at Inje University Ilsan Paik Hospital from January 2006 to June 2013. APC group received APC ablation (VIO 300D with APC 2; Erbe Elektromedizin, Germany; pulsed argon plasma coagulation, 40W) after submucosal saline injection to prevent procedure related complications. In ESD group, injection of submucosal saline, circumferential incision and submucosal dissection was performed by flexible IT knife. All patients were followed up for more than 3 months of period, and biopsy was performed on post treatment scar lesions. We compared clinical and pathologic characteristics, complications, recurrence rates, admission rate, mean duration of hospital stay, and medical expense between two groups.

Results: The mean age of patients was APC 65.8 ± 10.03 vs. ESD 64.6 ± 11.22 (p = 0.146). The mean adenoma size was 0.9 ± 0.45 cm in the APC group and 1.2 ± 0.72 cm in the ESD group (p < 0.001). The mean duration of hospital stay was significantly shorter in the APC group than the ESD group (APC 1.55 days vs. ESD 5.80 days, p < 0.001). Complication did not occur in the APC group. However, one case of perforation (0.9%) and 6 cases of bleeding (5.3%) occurred in the ESD group. Recurrence rates were 15.3% (15/97 patients) in the APC group and 3.5% (4/113 patients) in the ESD group (p = 0.003). One recurrent case of APC group was diagnosed with adenocarcinoma which was completely treated by surgery. The proportion of hospitalization was less in the APC group (43.3 %, 42/97) than the ESD group (100.0 %, 113/113) (p < 0.001). Medical expense was less in the APC group (377,172 won, 351 dollar) than the ESD group (1,430,610 won, 1,333 dollar) (p < 0.001). No complication was observed in APC treatment group by outpatient department (OPD) basis, medical expense was less in APC group by OPD basis (292,842 won, 272 dollar) than in the APC by admission basis (1,079,698 won, 1,006 dollar) (p < 0.001).

Conclusion: In this study, we demonstrated that gastric adenoma can be safely treated by APC without serious complications. APC showed less hospitalization and lower medical expense. Also we showed that APC is an effective and safe treatment modality for gastric adenoma on and OPD basis. However, regular endoscopic follow-up is necessary for detection of residual or recurrent lesions because of the relatively high rate of local recurrence after APC.