Background: Microsatellite instability (MSI) is a hallmark of the deficiency in DNA mismatch repair system that is one of the pathways of gastric carcinogenesis. So far, there was no previous study that analyzed the endoscopic characteristics of MSI-high early gastric cancer (EGC). We focused to analyze endoscopic and clinicopathologic characteristics of EGC with high level MSI.

Materials and Methods: From December 2003 to October 2007, 1,786 patients who underwent total or subtotal gastrectomy were examined for MSI status. Of 1,786 cases, 161 cases showed the MSI-high and among them, 61 cases were EGC. For comparison, 100 non-MSI high EGCs in same period were selected as controls. Endoscopic characteristics and clinicopathologic features of two groups were compared and analyzed. Microsatellite analysis was performed using a panel of five National Cancer Institute workshop-recommended markers. Cases showing a shifting of microsatellites at two or more markers were classified as MSI-high.

Result: In endoscopic characteristics, EGCs with MSI-high was characterized by more frequent protruded gross type ($p=0.003$) and antral location ($p=0.002$), but there were no significant difference between two groups according to demarcation of lesion, color of lesion, nodularity, atropy of mucosa, intestinal metaplasia of mucosa, and synchronicity. In clinicopathologic features, the MSI-High EGCs were characterized by female predominance, older age, non signet ring cell carcinoma, mucinous carcinoma type, intestinal type of Lauren classification, and moderate to severe lymphoid stromal reaction.

Conclusion: MSI high EGCs were characterized by more frequent protruded gross type and antral location, compared with non-MSI high EGCs. Also, MSI-high EGCs showed difference in various clinicopathologic features. We suggest that by analyzing this endoscopic finding and clinicopathologic differences can help to understand better prognosis in gastric cancer with MSI high.