

## Clinical outcomes of metachronous gastric cancer after endoscopic resection for early gastric cancer

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**Background:** Patients treated with endoscopic submucosal dissection (ESD) for early gastric cancer (EGC) have a risk of metachronous gastric cancer (MGC). The aim of this study was to evaluate the clinical outcomes of MGC after curative ESD for EGC. **Methods:** A total of 1510 patients who received curative ESD for EGC from January 2005 to May 2014 were retrospectively reviewed. Risk factors, treatment outcomes, and stages of MGC were analyzed between re-ESD and surgery group. **Results:** A total of 75 patients with MGC were analyzed, in whom 56 (74.7%) patients received re-ESD, and 19 (25.3%) received surgery. In logistic regression, low BMI ( $p=0.026$ ), multiplicity of index cancer ( $p=0.027$ ) were significantly associated with subsequent surgery for MGC as well as undifferentiated histology ( $p=0.027$ ), large tumor size ( $p=0.024$ ) of MGC. The T ( $p=0.000$ ) and N stage ( $p=0.014$ ) were significantly higher in MGC with surgery. **Conclusions:** The lower BMI and multiplicity of index cancer were significantly associated with surgical resection of MGC. Close follow-up is mandatory when the patients have the risks to prevent surgery after ESD for EGC.

## Clinical characteristics of pathologically unfound EGC after ESD

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**Background:** Endoscopic submucosal dissection (ESD) is widely used medical technique in early gastric cancers (EGCs). Although each case had been diagnosed by endoscopic forceps biopsy (EFB) as adenocarcinoma before ESD, final pathologic result occasionally reported missing lesions. The aim of this study was to evaluate the clinical, endoscopic, and histological characteristics of patients who were pathologically negative findings after ESD. **Patients and methods:** A total 2,248 EGCs cases were performed ESD in a single center located in Korea, between January 2007 and September 2016. Of those 47 cases (2.1 %) who were pathologically negative after ESD were reviewed, retrospectively. **Results:** The patients were male dominant, and in their sixties at the time of treatment. The location of the tumor was mostly in the lower third of stomach. Morphologically 9 cases (19.1 %) were elevated, 7 cases (14.9 %) were flat, 3 cases (6.4 %) were depressed, and 28 cases (59.6 %) were mixed type. The pathologic reports of pre-ESD endoscopic biopsy revealed 39 differentiated EGCs (83.9 %) and 8 undifferentiated EGCs (17.1 %). The mean size of cancer, endoscopically estimated, was  $10.5 \pm 7.7$  mm. The median numbers of EFB biopsy fragments were 3 (interquartile ranges[IQR]; 3-5). Sampling ratios per size and per area were  $4.3 \pm 2.7$  mm/fragments and  $113.4 \pm 129.0$  mm<sup>2</sup>/fragments, respectively. The median time from EFB to ESD was 26 days (IQR; 12-36). The median follow up interval after ESD were 36.0 months (IQR; 10.8-46.8). During the follow up 6/47(12.8%) cases were reported synchronous lesions and 3/47 (6.4%) were metachronous lesions. All of those lesions were performed 2nd ESD. **Conclusion:** Small size of EGCs with multiple numbers of pre-ESD EFB might cause negative result in the final ESD pathology. Minimizing pre-biopsy especially for small size of lesion may prevent such results which causes confusion. The possible explanation of the negative result may be mistargeting and biopsy removal of EGCs. Synchronous and metachronous lesions were frequent in those patients, Short term follow up of endoscopic examination should be considered.