The Effect of Ambulation on Transit Time of Capsule Endoscopy

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Background/Aims: Capsule endoscopy (CE) is a useful tool for the evaluation of small bowel mucosa lesions, but it may fail to reach the cecum in approximately 20% of cases. To increase completion rate (CR), it is necessary to find a way to increase transit time of CE. The aim of this study was to determine the effect of ambulation on transit time and CR.

Methods: A total of 42 patients were involved in this prospective study and the patients were recorded the degree of ambulation by passometer during CE examination. MiRo CE was used in all the patients. GTT, small bowel transit time (SBTT), and CR were measured and correlated with ambulation, diabetes mellitus, and usage of prokinetics.

Results: In 40 (95.2%) out of 42 cases, the CE was able to examine the entire small bowel, and delayed GTT (GTT > 60 minutes) occurred in 11 cases (26.2%). The average GTT was 31.5±85.98 min (range 1-562 min), SBTT was 334±112.16 min (range 192-614 min) and the average degree of ambulation was 396±1376.39 walk (range 11-4,700 walk). The ambulation demonstrated a moderate correlation with GTT ($\gamma = -0.305$, $p=0.049$). In univariate analysis, ambulation (1,330.9 vs 457 walk, $p=0.014$) was found to be a predictive factor for delayed GTT. Ongoing hospitalization, history of diabetes mellitus, and prokinetic agents were not significantly associated with delayed GTT. However, no correlation between ambulation and SBTT was observed and ambulation did not affect delayed SBTT (SBTT > 360 minutes).

Conclusions: Ambulation accelerates the gastric emptying in patients undergoing CE. Incomplete examination rate was too low that the effect of ambulation on CR could not be evaluated. However, this finding still may help to examine the small bowel completely and also understand the physiology of gastrointestinal motility.

Key Words: Capsule endoscopy (CE), Ambulation, Gastric transit time (GTT)