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臨床組-醫師

懷疑巴瑞氏食道的病人接受內視鏡的切片數與腸上皮化生的產出率

The Biopsy Number and Yield Rate of Intestinal Metaplasia in Patients with Suspected Barrett's Esophagus

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BACKGROUND

- Detections of goblet cells and dysplasia are crucial for diagnosis and determining the surveillance program of Barrett's esophagus (BE).
- The optimal biopsy numbers and their yield rates of intestinal metaplasia (IM) and dysplasia are still uncertain, especially in Asia.

AIMS

- To assess the biopsy numbers and yield rates of IM and dysplasia in patients with columnar-lined esophagus (CLE).
- To determine the optimal biopsy protocol.

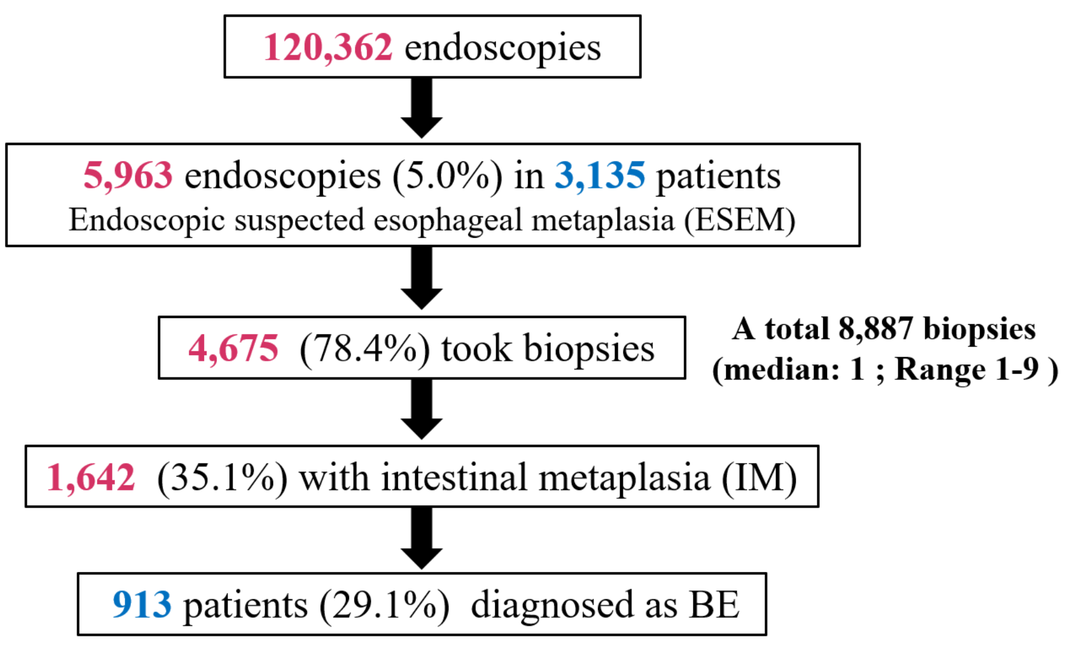
METHODS

- We retrospectively reviewed the upper gastrointestinal endoscopic reports from the database of outpatient setting from January 2008 to December 2020 at E-Da hospital.
- The number of biopsies, length of CLE and the corresponding histology were analyzed to assess the yield rates of IM and dysplasia per-biopsy in patients with CLE and without visible cancerous lesions.

RESULTS

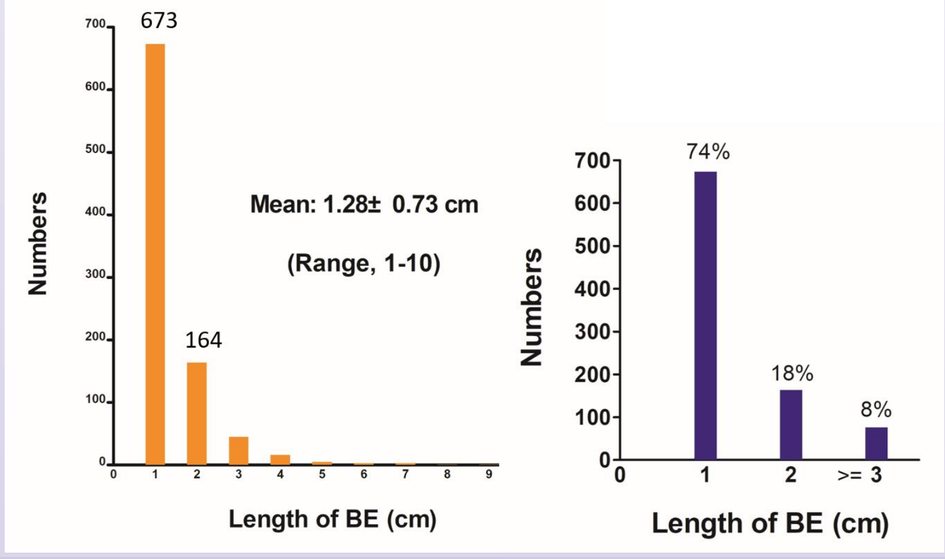
- A total of 120,362 endoscopies were reviewed, and 5,963 (5.0 %) cases in 3,135 patients were diagnosed as endoscopic CLE.
- Among them, 4,675 (78.4%) cases received a total of 8,887 biopsies (number, median: 1; range, 1-9). The histology from biopsies revealed that 1,642 (35.1%) cases per-endoscopy yielded the IM, and 913 (29.1%) patients were diagnosed as BE **(Figure 1)**.

Figure 1. Study flow diagram



- Among the 913 patients with IM-confirmed BE, the mean length of CLE was 1.4 (1.28 ± 0.73; range, 1-10) cm and short-segment (<3cm) BE (SSBE) were predominated (92%; **Figure 2**).

Figure 2. Length of BE



- The yields of IM (74.8% vs. 32.9%) and dysplasia (18.7% vs. 3.9%) were both higher in the long-segment than those in short-segment CLE **(Table 1)**.

Table 1. The yield rates of IM and dysplasia in long- and short-segment CLE

Yield	IM	Dysplasia
Long-segment CLE	**74.8%**	**18.7%**
Short-segment CLE	**32.9%**	**3.9%**

- Overall, taking one biopsy only revealed a 26.1% yield of IM and 3.5% yield of dysplasia, respectively **(Table 2; Figure 4A)**.
- Totally, the yield rates of IM were positively correlated with the number of biopsies (3-6 biopsies reach a plateau: ~50%; ≥7 biopsies: 100%; **Table 2**; **Figure 3A**)

Table 2. The relationship between the detection of IM with number of biopsies taken at each endoscopy

Number of biopsies per endoscope	Number of endoscopies	Number of IM	% of endoscopies with IM
1	2564	669	**26.1**
2	938	378	40.3
3	310	155	**50**
4	817	411	50.3
5	34	20	58.8
6	8	5	62.5
7	2	2	100
8	1	1	100
9	1	1	100
Total	4675	1642	**35.1**

- One biopsy just reached a 25.4% yield of IM and 3.2% yield of dysplasia in short-segment CLE **(Figure 3B; Figure 4B)**.
- On the contrary, one biopsy could get a 53% yield of IM and 13.6% yield of dysplasia in long-segment CLE **(Figure 3B; Figure 4B)**.

Figure 3. Number of biopsies and yields of IM

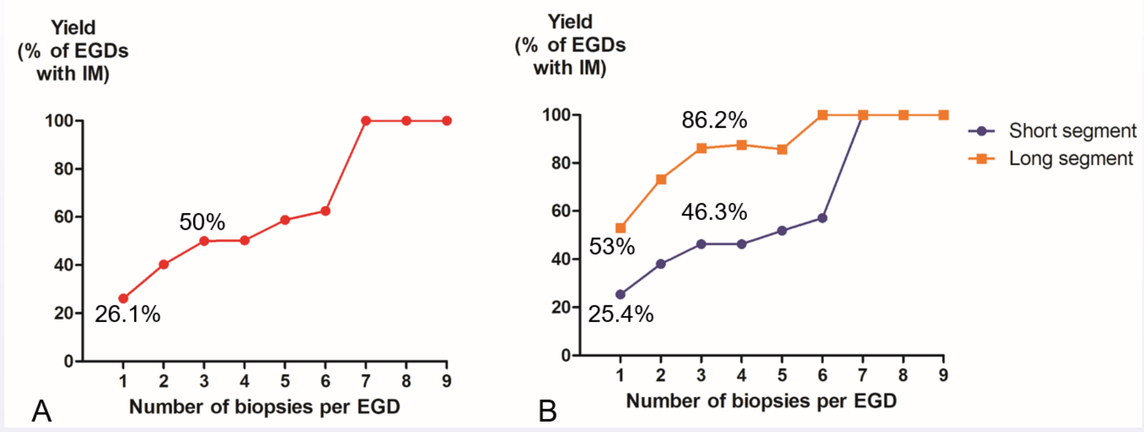
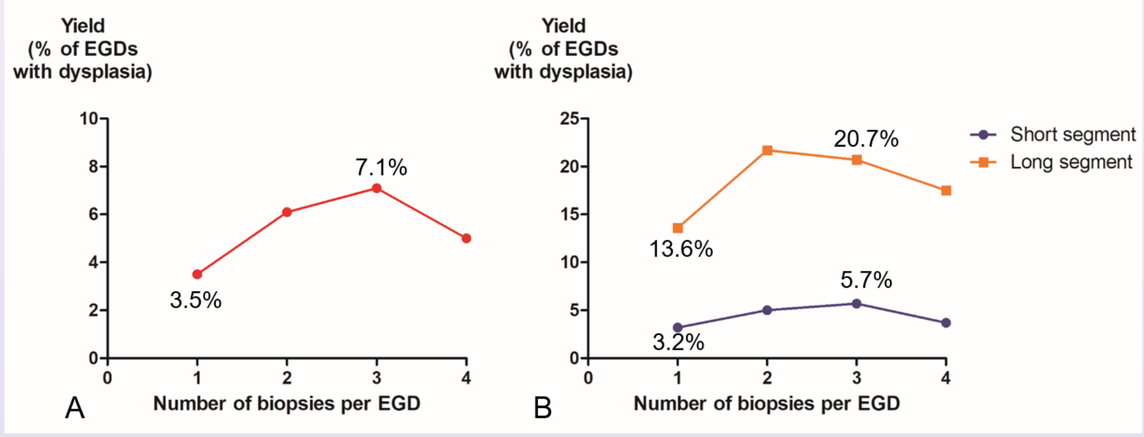


Figure 4. Number of biopsies and yields of dysplasia



CONCLUSIONS

- Sampling bias is a major concern in current clinical practice for diagnosis and management of BE.
- The yield rates of IM and dysplasia were insufficient by taking one biopsy, especially for short-segment CLE.
- A randomized study is required to determinate the optimal biopsy number for SSBE.