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Detection of Cecal Diminutive Adenomas with Chromoendoscopy (CE) versus Narrow-band Imaging (NBI): A Comparative Study

Takahiro Fujii, MD, PhD, TF Clinic, Tokyo, Japan

Background

In recent years, various endoscopic devices and diagnostic approaches have been developed to improve lesion detection during colonoscopy. We previously reported the superiority of narrow-band imaging (NBI) over white-light imaging (WLI) for detection of superficial neoplastic lesions[1]. We have also reported the superiority of chromoendoscopy with indigo carmine dye (CE) over WLI for detection of cecal lesions[2]. However, CE and NBI remain yet to be compared for their performance in lesion detection.

Aim

To compare CE and NBI for their respective ability to detect diminutive adenomas of the cecum.

Methods

A total of 1,376 patients (mean age, 59.8 years old; males / females, 686 / 690) who underwent colonoscopy between June 2013 and February 2017 were prospectively examined for lesions in the cecal mucosa first with WLI, followed by NBI and then CE to compare their respective ability to detect cecal diminutive adenomas measuring 5 mm or less in size. Polyps were macroscopically classified according to the Paris Classification.

Results

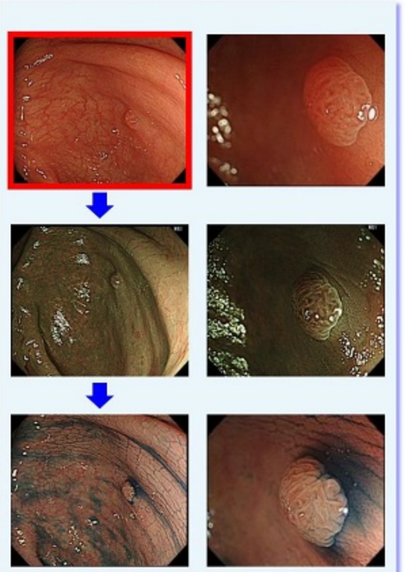
(Table) : One hundred and thirty-four diminutive cecal adenomatous polyps were found in 110 (8.0%) of the 1,376 patients examined. Of the 134 lesions detected, 16 (type Is, 6; type IIa, 10) were found with WLC in 15 patients (mean age, 66.2 years old; males / females, 14 / 1) and were consistent with low-grade dysplasia (LGD) with a mean size of 3.1 mm; 47 (type Is, 4; type IIa, 43) were found with NBI in 43 patients (mean age, 59.4 years old; males / females, 33 / 10) and were all LDG, except 1 high-grade dysplasia (HGD), with a mean size of 3.1mm; and 71 (type IIa + IIc, 2; type IIa, 69) were found in 63 patients (mean age, 65.1 years old; males / females, 31 / 32) and were all LGD with a mean size of 2.6 mm. Lesions detected at final CE observation accounted for 53% of all lesions detected (71 / 134), with the mean lesion size being smallest at 2.6 mm.

Table Endoscopic diagnostic imaging for diminutive adenomatous polyp in Cecum (Diagnostic process; WLI→NBI→CE)

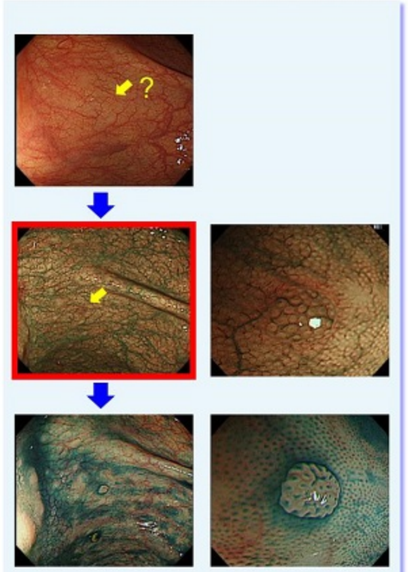
Diagnostic Imaging	No. of diminutuve adenomatous polyps (No. of Patients ; Male / Female)	Mean Age	Macroscopic Type	Mean size	Histology
WLI	16 (15; 14 / 1)	66.2 years	Is: 6 IIa: 10	3.8 mm	LGD : 16
NBI	47 (43; 33 / 10)	59.4 years	Is: 4 IIa: 43	3.1 mm	LGD : 46 HGD : 1
CE	71 (63; 31 / 32)	65.1 years	IIa+IIc: 2 IIa: 69	2.6 mm	LGD : 71

LGD, low-grade dysplasia; HGD, high-grade dysplasia

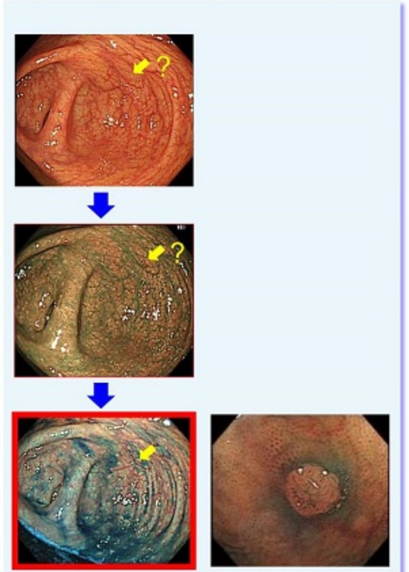
Detection with WLI: Is, 5mm, LGD



Detection with NBI: IIa, 2mm, LGD



Detection with CE: IIa, 2mm, LGD



Conclusions

CE has shown a superior ability to detect cecal diminutive adenomas followed by NBI and WLI. More diminutive superficial adenomas were detected with CE than with NBI or WLI. Although study results demonstrate the superiority of CE over NBI in the detection of diminutive adenomas, further investigation is required to evaluate whether CE might be an alternative to NBI for diminutive adenoma detection during complete colonoscopy.

References: 1. Fujii T. Gastrointest endosc 2010; W1480. 2. Fujii T. UEGW 2013; p185

There are no potential conflicts of interests related to this presentation.

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Detection with NBI: IIa, 2mm, LGD

Detection with CE: IIa, 2mm, LGD

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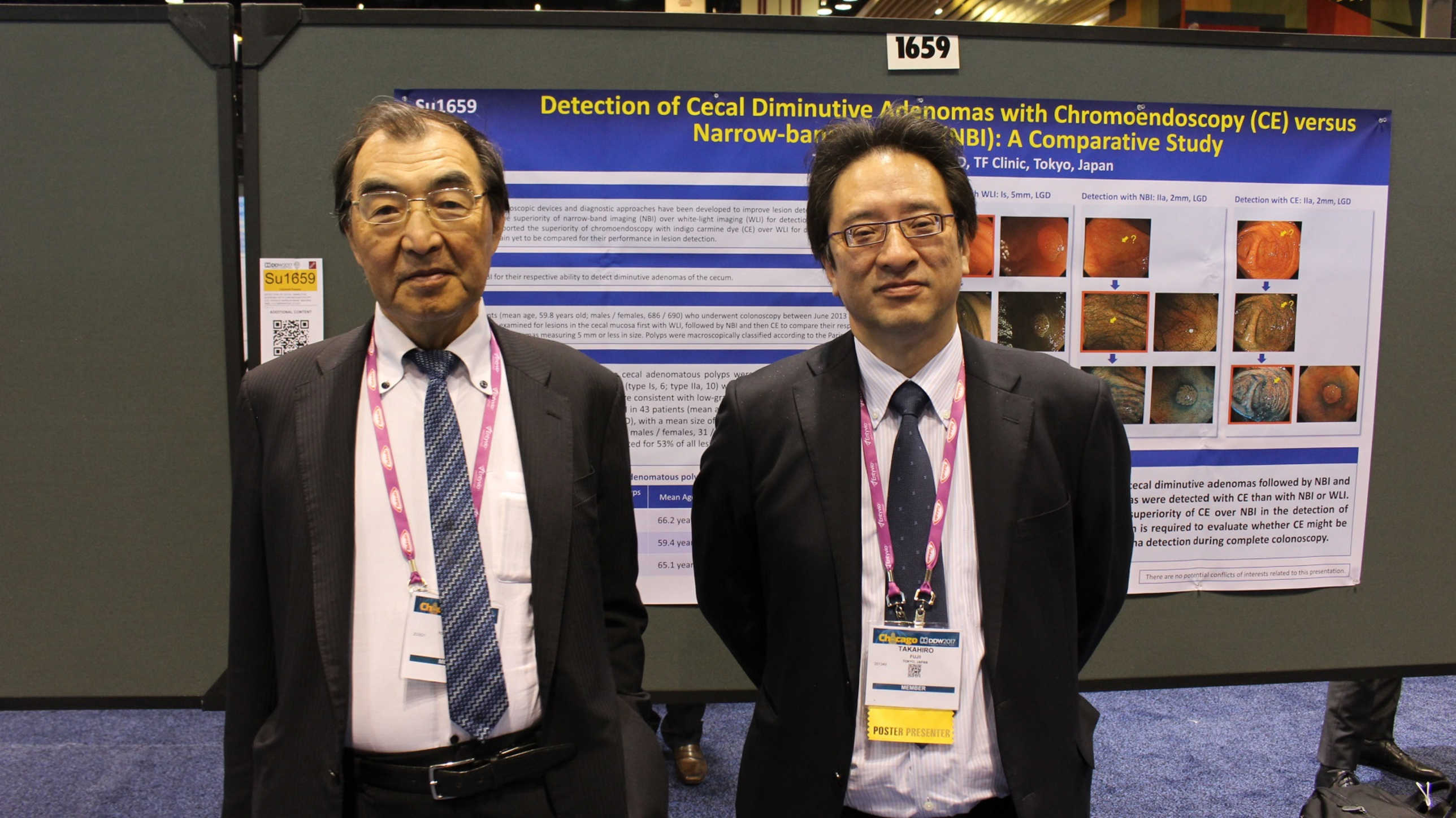
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