

Case report

A case of infectious enterocolitis based on the presence of infecting bacteria confirmed by the real-time polymerase chain reaction with the formalin-fixed paraffin-embedded histological specimens (real-time PCR-FFPE)
— the establishment of the effective genetic differential procedure of infectious enterocolitis from ulcerative colitis by the use of the processed specimens for microscopic study —

Nagaoka General Central Hospital, Department of pathology ; Pathologist

Toshihiko Ikarashi

Background : The genetic presentation of infecting organisms by the real-time PCR-FFPE was helpful to differentiate infectious enterocolitis from ulcerative colitis. Our case with crypt abscess looked alike ulcerative colitis could be diagnosed as infectious enterocolitis by this genetic analysis.

Case report : 26-year-old male patient complained bloody stool. Endoscopic study revealed mucosal redness and erosion from ileocecal region to rectum. Acute purulent inflammation was histologically found with prominent crypt abscess like ulcerative colitis. Deoxy-nucleic acids (DNA) were extracted from the FFPE specimens. The real-time PCR was performed with 17 primers for infectious organisms, and he was diagnosed as infectious enterocolitis induced by Enterohemorrhagic E coli, Campylobacter jejuni, and Staphylococcus aureus.

Conclusion : Among many inflammatory bowel diseases with crypt abscess the real-time PCR-FFPE analysis was more effective in discriminating infectious enterocolitis from ulcerative colitis.

Key words : real-time polymerase chain reaction with the formalin-fixed paraffin-embedded histological specimens (real-time PCR-FFPE), inflammatory bowel disease, infectious enterocolitis, ulcerative colitis, differential diagnosis, infecting organism

is based on a clinical course, an endoscopic finding, a pathologic histology, and a culture of stool. It is true that the crypt abscess is the most important histological diagnostic finding of ulcerative colitis, but it is difficult to exclude infectious enteritis because the crypt abscess is one of nonspecific purulent inflammatory reactions. Therefore it is significant to identify the pathogens from the crypt abscess in histopathology and compare with the bacteriologic culture of stool. We established the genetic diagnosis of infecting organisms by the real-time PCR-FFPE method, and reported one case of infectious enteritis.

Case report

26-year-old male patient complained a prolonged bloody stool, and revealed mucosal redness and erosion from ileocecal region to rectum. Pathological examination revealed purulent inflammation with marked crypt abscess, suggested inflammatory bowel disease including ulcerative colitis and infectious enterocolitis. Real-time PCR-FFPE method by Mz3000P real-time QPCR system (Agilent) and the intercalator method with SYBR™ Green I (SYBR™ Premix Ex Taq™, Takara) was done with 17 primers against infecting organisms, which demonstrated infectious enterocolitis by the presence of Enterohemorrhagic E coli, Campylobacter jejuni, and Staphylococcus aureus (1, 2) (Fig. 1). These pathogenic bacteria were reconfirmed on the bacterial culture test of stool.

Background

In view of the therapeutic difference it is important to differentiate the infectious enterocolitis treated with antibiotics from the other inflammatory bowel diseases including ulcerative colitis treated with anti-inflammatory drugs and steroids. The diagnosis of the ulcerative colitis

Discussion

Real time PCR for infecting organisms is very useful to confirm infectious enterocolitis, which makes it possible to differentiate infectious enterocolitis from other

inflammatory bowel diseases including ulcerative colitis.

References

1. Fukushima, H, Tsunomori, Y. Study of real time PCR assays for rapid detection of food-borne pathogens. Kansenshogaku. Zasshi 79 ; 644－54. 2005.
2. Ikarashi, T. Trial of rapid diagnosis of infection and individual confirmation against tissue contamination by real time PCR (polymerase chain reaction) of SYBR Green method to paraffin-embedding specimens. Nii-gata-Ken Koseiren Med J 25 ; 127－30 ; 2016.

和 文 抄 録

症例報告

潰瘍性大腸炎類似の陰窩膿瘍病変を示したホルマリン固定パラフィン切片材料のリアルタイム・ポリメラーゼ連鎖反応（PCR-FFPE）による起炎菌検出検査により感染性腸炎と確定診断できた1症例

長岡中央総合病院、病理部；病理医

いからしとしひこ
五十嵐俊彦

背景：PCR-FFPE 病理組織検体を使った起炎菌の遺伝子検査は、感染性腸炎と潰瘍性大腸炎の鑑別に有効である。今回、陰窩膿瘍が顕著で潰瘍性大腸炎が強く示唆された症例に起炎菌遺伝子検査を実施し、感染性腸炎を確定できた1症例を経験したので報告した。

症例報告：症例は26歳の男性で、遷延性血便を主訴とした。内視鏡検査上、回盲部から直腸までの粘膜発赤と糜爛が認められた。病理組織検査上、急性化膿性炎症で、潰瘍性大腸炎類似の顕著な陰窩膿瘍が認められた。デオキシ核酸（DNA）をFFPEから抽出し、感染微生物検出用の17種のプライマーを使ったリアルタイムPCRを実施し、腸管出血性大腸菌、十二指腸カンピロバクターと黄色ブドウ球菌によって誘発された感染性腸炎と確定できた。

結論：陰窩膿瘍を示す炎症性大腸疾患において、リアルタイムPCR-FFPEによる起炎菌分析によって、感染性腸炎と潰瘍性大腸炎の鑑別に有効であった。

キーワード：ホルマリン固定パラフィン切片材料、リアルタイム・ポリメラーゼ連鎖反応（PCR-FFPE）、起炎菌検出、感染性腸炎、確定診断

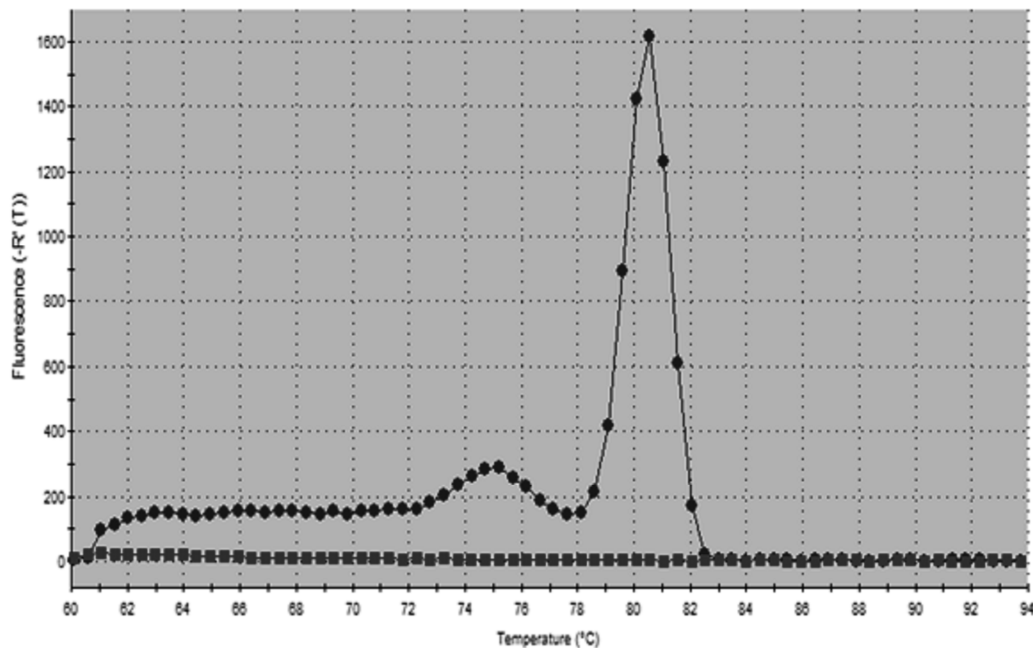


Fig. 1. Dissociation curve of real time PCR for *Campylobacter jejuni*. Patient revealed the peak of 80.57°C (circle). Negative control (square). X-axis : temperature, Y-axis : fluorescence degree.

(2016/06/13受付)