

## Invention Report

# Lymphatic involvement should be accurately confirmed by D2-40 immunostaining in endoscopic mucosal resection (EMR) specimens with microinvasive carcinoma

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The immunostaining analysis with both CD 34 and D 2-40 was very useful for venous and lymphatic involvements, respectively. In case of ambiguous lymphatic configuration on routine Hematoxylin-Eosin (HE) stained slides the lymphatic invasion should be immunohistochemically examined with Anti-D 2-40 antibody. Especially in endoscopic mucosal resection an early invasive cancer required immunostaining analysis for lymphatic permeation.

**Key Words :** D 2-40, immunostain, lymphatic invasion, microinvasion, carcinoma, endoscopic mucosal resection (EMR)

## Background

In a routine microscopic analysis of cancer specimens the vascular invasion (v-factor) and lymphatic invasion (ly-factor) was confirmed by either histochemical staining with Elastica-Masson Goldner stain (EMG) or immunostaining with reagents against Factor VIII and CD 34. These were useful for identifying endothelium, but not specific for lymphatic vessels. Lately D 2-40 has been purely demonstrated in lymphatic endothelium and its reagent, Anti-D 2-40 antibody, has been used for lymphatic involvement. So the histological analysis with both CD 34 and D 2-40 was very useful for venous and lymphatic involvements, respectively.

We should remember that even early-stage carcinoma with microscopic invasion could involve lymphatic vessels, which was usually ignored histologically if lymphatic configuration could not be confirmed accurately on routine HE slides. In endoscopic mucosal resection an early invasive cancer required immunohistochemical analysis for lymphatic permeation.

In this paper we could confirm lymphatic invasion by the immunohistochemical analysis with anti-D 2-40 antibody on EMR specimen with microinvasion and reported here.

## Case

A patient aged 72 y/o took EMR. He was diag-

nosed as early carcinoma of stomach by routine microscopic analysis : L, Post, O-IIc, 1 x 1 x 0.2 cm, EMR, tub 1, sm 2, int, inf $\beta$ , lyo, vo, ce (-), HE (Fig.1, 2).

No lymphatic invasion was confirmed because of absence of tumor cells in usual lymphatic configuration.

Additional immunostaining was done with the following reagents : (1)monoclonal mouse anti-human CD 34 Class II antibody (Anti-CD 34, DakoCytomation, <http://dakocytomation.jp/>) : mainly reacted Class II on membrane of vascular endothelium, significant for blood vascular invasion by cancer, (2)monoclonal mouse anti-human D 2-40 antibody (Anti-D 2-40, DakoCytomation, <http://dakocytomation.jp/>) : reacted sialoglycoprotein in both cytoplasm and membrane of lymphatic endothelium and unreacted with vascular endothelium, useful in identifying lymphatic invasion by cancer.

One lymphatic invasion was shown in the deepest area with D 2-40 reagent but there was no venous involvement (Fig. 3).

## Conclusion

As for the judgment of cancer progress the lymphatic involvement was one of the most important factors. We should pay attention to confirm lymphatic invasion because there was late recurrence of early carcinoma after EMR. Immunostaining with D 2-40 reagent is valuable for lymphatic assessment. Specimens with early invasion, especially in EMR, should be immunostained with both D 2-40 and CD 34 reagents to judge whether to bring additional therapy or not.

## References

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和文抄録

小さな工夫

微小浸潤癌であった内視鏡下粘膜切除標本に対して、D2-40免疫染色によりリンパ管侵襲を確認すべきである。

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癌組織における静脈侵襲とリンパ管侵襲の判定に

は、CD34とD2-40の免疫染色が有用である。通常のHE染色標本においてリンパ管構造が不明瞭な場合には抗D2-40抗体による免疫染色を実施すべきである。特に、早期浸潤EMR標本においては、リンパ管侵襲の判定にはこの免疫染色が必須である。

キーワード： D2-40、免疫染色、リンパ管侵襲、微小浸潤癌、内視鏡下粘膜切除



Fig. 1

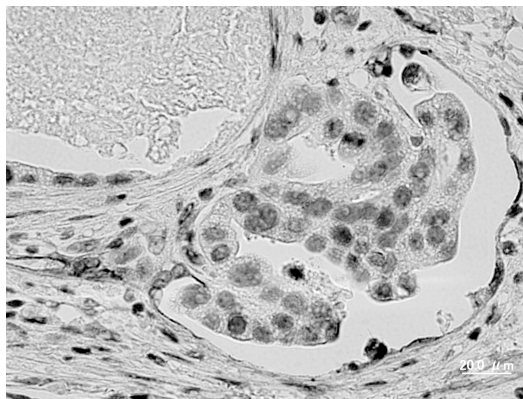


Fig. 3

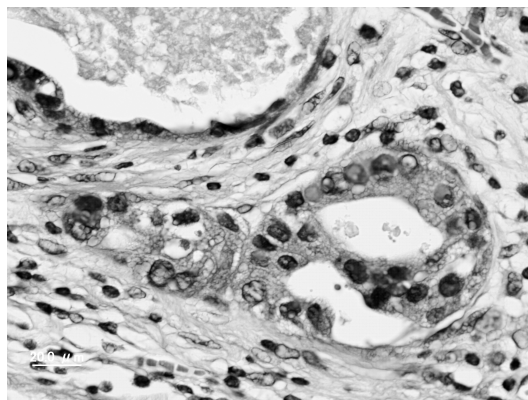


Fig. 2