

## 궤양성 위 암종에 나타난 초승달 징후의 펫/시티 소견

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### PET/CT Manifestation of the Meniscus Sign of Ulcerating Gastric Carcinoma

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Meniscus-like presentation of ulcerating gastric carcinoma on upper gastrointestinal series radiograph was first described in 1921 by Carman<sup>1)</sup> and has since been known as a useful differential diagnostic sign in radiology. In 1982 using then newly introduced computed tomography (CT) Widder and Mueller<sup>2)</sup> revisited the meniscus sign. Their study was primarily focused on a dynamic assessment of the demonstrability of the meniscus sign that largely depends on the judgment and technical skill of examiner, especially graded compression and patient positioning. One year earlier Balfe et al.<sup>3)</sup> assessed the diagnostic reliability of gastric wall thickening as observed on CT scan in adenocarcinoma, lymphoma and leiomyosarcoma and concluded that it is not a reliable finding. In contrast, however, Lee et al.<sup>4)</sup> recently emphasized that the wall thickness measurement on CT of exophytic carcinoma, myoma and ulcers was a useful diagnostic means. Thus, it appears that gastric wall thickening or mucosal heave-up is by itself not as reliable as the meniscus sign.

The electronic search of world literature failed to disclose earlier report of this sign demonstrated by <sup>18</sup>F-FDG positron emission tomography and computed tomography (PET/CT). The present communication documents <sup>18</sup>F-FDG PET/CT finding of the meniscus sign as encountered in a case of ulcerating gastric carcinoma, the histological diagnosis of which was moderately differentiated tubular adenocarcinoma. Unlike most gastric tumors without ulceration that tend to unimpressively accumulate <sup>18</sup>F-FDG the present case of Borrmann type III gastric carcinoma demonstrated markedly increased <sup>18</sup>F-FDG uptake. (Nucl Med Mol Imaging 2007;41(4):335-336)

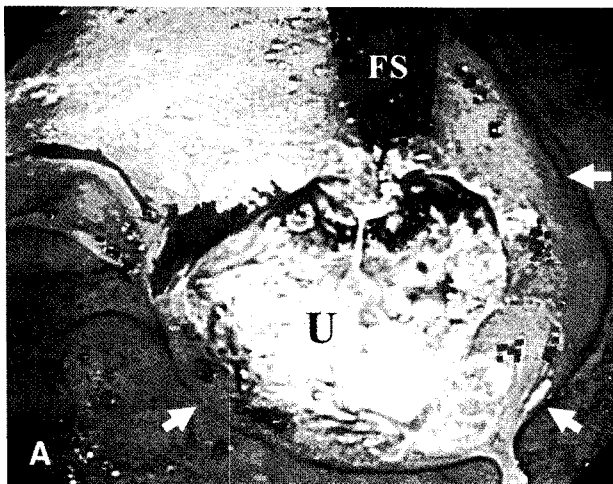


Fig. 1A. Gastroscopy shows a large exsudate-covered whitish meniscus of ulcer in Borrmann III carcinoma (U). FS = Fiberscop

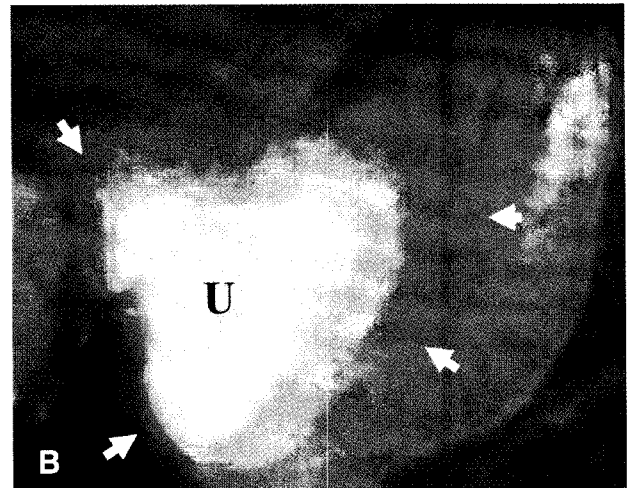
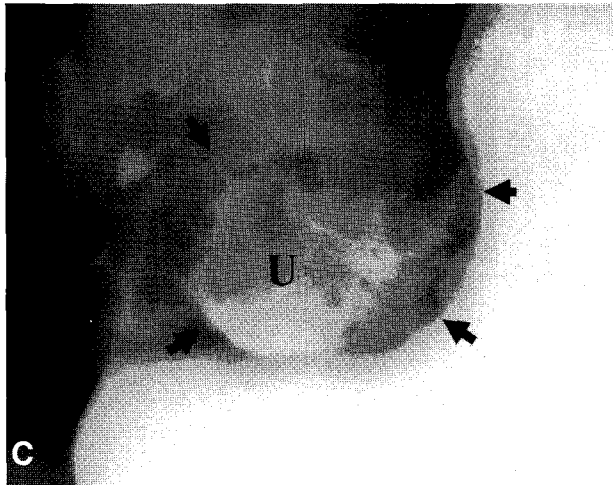


Fig. 1B. F18-FDG PET/CT shows intense meniscus-like FDG uptake in ulcer (U). Note that FDG is only insignificantly accumulated in heaved-up tumor border (arrows).

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**Fig. 1C.** Classical meniscus sign shown on UGI compression barium study in another patient who had almost the same looking ulcerating gastric carcinoma as ours. U denotes meniscus-like ulcer and arrows mark heaved-up tumor border.

### Case presentation

A 77-year-old male patient was hospitalized because of long-standing indigestion and recently developed general weakness and severe dizziness. The patient was emaciated, apathetic and unable to stand alone without assistance. Food intake had been poor and grossly inadequate. The past history was noncontributory except for cholelithiasis diagnosed some 15 years ago. Vital signs were stable.

Complete blood cell counts disclosed hemoconcentration. Gastric fiberoscopy performed under the provisional diagnosis of gastric malignancy demonstrated a large Borrmann type III tumor with central ulceration involving the cardia and proximal lesser curvature (Fig. 1 A). PET-CT performed for disease staging confirmed the presence of a large  $^{18}\text{F}$ -FDG positive meniscus-like ulcer crater formed on the top of an intraluminal elevated tumor mass with heaved-up border (Fig. 1 B). The size of the ulcer measured 4.5 cm in the greatest dimension and the FDG uptake values were calculated as ranging from 8.1 to 18.2. No regional lymph nodal or distant metastasis was found. It is impressive that the ulcerating gastric carcinoma in this case accumulated  $^{18}\text{F}$ -FDG so intensely. It is speculated that high uptake was not due to tumor but chronic inflammation in ulcer base.

### References

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