Gallbladder Dysfunction Diagnosed by Cholescintigraphy with a Fatty Meal

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To the editor,

The pathogenesis of gallbladder dysfunction is not fully understood and functional assessment of gallbladder emptying cholescintigraphy is widely used as a diagnostic tool. We present a case of gallbladder dysfunction diagnosed by cholescintigraphy with fatty meal.

A 36-year-old woman with Behçet's disease presented with frequent postprandial right upper quadrant pain of three weeks' duration. Each episode lasted more than 30 minutes, resulting in interruption of daily activities. On examination, she was afebrile with positive Murphy's sign. Routine blood tests were within normal limits. Abdominal ultrasonography, computed tomography scan, upper gastrointestinal endoscopy, and colonoscopy yielded negative findings. Endoscopic retrograde cholangiopancreatography showed no structural pancreatobiliary dis-

eases or delayed contrast drainage. Then gallbladder dysfunction was suspected, we performed cholescintigraphy (CS). Gallbladder filling was noted at 60 minutes after injection of ^{99m}Tc -pyridoxyl-5-methyl-tryptophan (Fig. 1A, arrow). Then 58 g chocolate (energy 324 kcal, fat 20 g) was given to her. She developed mild right upper quadrant pain and the gallbladder was still detected 30 minutes later (Fig. 1B, arrow). Fatty meal stimulated CS disclosed a decreased gallbladder ejection fraction (GBEF) of 25%, indicating a diagnosis of gallbladder dysfunction. The patient was initially treated conservatively with motility agents, which did not improve her symptom. She underwent laparoscopic cholecystectomy, which completely resolved her symptom. She has remained well for 6 years.

Gallbladder dysfunction, also known as biliary dyski-

Fig. 1. (A) Cholescintigraphy showing gallbladder filling at 60 minutes after injecting ^{99m}Tc -pyridoxyl-5-methyl-tryptophan (arrow). (B) The gallbladder was still detectable 30 minutes after ingesting chocolate (arrow), indicating gallbladder dysfunction.

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nesia, is characterized by functional alterations without structural biliary abnormalities. Although measurement of GBEF by cholecystokinin (CCK)-CS has been well established for the diagnostic criteria, the dose, dose rate, and duration of infusion of CCK has not been standardized. Recently, oral fatty meal including half-and-half milk, yolk and chocolate, which release endogenous CCK and are more physiologic cholagogue stimulants than exogenous CCK, can serve as alternative stimulants to CCK.^{1,2} As there are many countries where CCK is not available, CS with fatty meal has become common practice.

In this case, the GBEF was calculated at 30 minutes after having fatty meal. Although the GBEF has been generally calculated at 60 minutes after having fatty meal and its normal value has been established as over 33%,³ recent studies have indicated that the GBEF at 30 minutes is also regarded as a reliable value by using percentile methodology as well as an absolute cut-off.^{4,5} In addition, sphincter of Oddi manometry was not performed to rule out sphincter of Oddi dysfunction (SOD) in this case, it was unlikely based on the long and unremarkable post-cholecystectomy course. In conclusion, it is emphasized that CS with fatty meal is useful in order to interpret the subgroup that will benefit from cholecystectomy. Further studies are needed to establish the utility of CS

with fatty meal.

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