

# Biliary colic after micro dieting

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**Summary:** A 33 year old man presented with biliary colic and transient obstructive jaundice. In the 4 weeks preceding admission he had been taking a very low calorie diet (the Cambridge Diet) and celebrated achieving his target weight with a fatty meal on the morning of admission. An ultrasound of the gallbladder suggested biliary sludge. We suggest that he developed the biliary sludge as a consequence of calorie restriction and that, following the fatty meal, the gall bladder contracted causing biliary colic and transient obstructive jaundice.

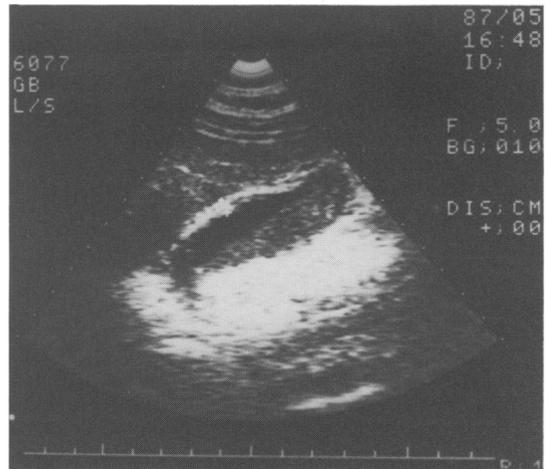
## Introduction

Low calorie diets have been associated with the production of lithogenic bile.<sup>1</sup> We report a patient who had taken such a diet, the Cambridge Diet, for one month and after achieving his target weight celebrated with a fatty meal. A few hours later he presented to hospital with biliary colic.

## Case report

A 33 year old man presented with a 2-hour history of severe colicky epigastric pain of sudden onset. Examination revealed tenderness in the epigastrium with a soft abdomen and normal bowel sounds. He was admitted to the ward and required pethidine analgesia. His pain recurred intermittently, lasting a matter of hours on each occasion. Initial biochemical and haematological indices, serum amylase, abdominal and chest radiographs and endoscopy were all normal.

Within 48 hours he became clinically jaundiced, and the pain localized to the right hypochondrium. Liver function tests, which had been normal initially, revealed an obstructive pattern: serum bilirubin 121  $\mu\text{mol/l}$  (normal 1–15); alkaline phosphatase 216 IU/l (normal 40–135); and aspartate transaminase 241 IU/l (normal 10–35). Serum amylase remained within the normal range. Ultrasound (Figure 1) arranged on admission revealed a thick walled gallbladder filled with sludge. The common bile duct was of normal calibre and the liver appeared normal.



**Figure 1** Ultrasound examination of the gallbladder during the acute admission. This shows a thickened gallbladder wall (0.4cm) and biliary sludge with a meniscus within the lumen of the gallbladder.

Further questioning revealed that he had been on the Cambridge Diet (280 kcal/day) for 4 weeks and had lost 2 stones in weight. On the morning of admission, he had eaten a celebratory fatty meal consisting of eggs, bacon and fried bread.

At no time during his hospital admission did he become febrile. His pain and jaundice settled rapidly and he was discharged 4 days after admission.

Six weeks later at follow-up, liver function tests were normal and a repeat ultrasound demonstrated a small fluid-filled gallbladder with a normal wall. Four months after admission the patient was taking

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his usual diet, including fatty foods. He reported that if his weight increases he takes the Cambridge Diet until his usual weight is regained. He has not had any further episodes of abdominal pain or jaundice.

### Discussion

Very low calorie diets have received considerable publicity as a method of treating obesity without medical supervision.<sup>2</sup> The Cambridge Diet is an increasingly popular method of weight reduction through strict restriction of calorie intake. Fasting is associated with an increase in both bilirubin<sup>3</sup> and lithogenicity of bile<sup>4,5</sup> and although obesity is described as a risk factor for the development of cholelithiasis, severe long term calorie restriction may result in biliary sludge formation.<sup>1</sup>

Our patient presented with acute biliary colic after his first meal following 4 weeks of strict adherence to the Cambridge Diet. Ultrasound revealed biliary sludge. At follow-up the gallbladder was fluid-filled with a normal calibre wall (the initial impression of thickening could be explained by the adherence of sludge to a normal gallbladder wall). We suggest that biliary sludge developed in

association with calorie restriction. Then, as a result of the fatty meal acting as a cholegogue, the gallbladder was stimulated and contracted, partially evacuating itself of sludge. This presumably was the cause of his biliary colic. The biliary sludge was only slowly evacuated from the common bile duct causing a transient obstructive jaundice which settled rapidly. Ascending cholangitis did not occur. It is possible that the presence of sludge in this patient's biliary tree could have remained asymptomatic and therefore undetected had biliary colic not occurred.

We have not been able to find a similar case reported in medical publications; this may be because few people celebrate gaining their target weight with a high dose cholegogue and thus develop symptoms of biliary obstruction. We suggest that people who adhere strictly to these very low calorie diets should be warned against consuming a large fatty meal when they complete their dieting.

### Acknowledgements

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### References

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