



**Figure.** Axial CT view through the abdomen, demonstrating multiple triradiate lucencies (arrows) within the gallbladder, without any direct visualization of radiopaque calculi. The hepatobiliary anatomy was otherwise unremarkable, without evidence of gallbladder edema or pericholecystic fluid. A Mercedes-Benz logo is shown in the left upper corner of the image.

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A 19-year-old man presented to the emergency department with right-sided abdominal pain after eating a turkey sandwich. Vital signs were within normal limits. Physical examination result was remarkable for right upper and lower quadrant abdominal tenderness. Laboratory analysis revealed normal WBC count and liver function. Computed tomography (CT) of the abdomen and pelvis (Figure) demonstrated Mercedes-Benz sign, implicating the diagnosis of cholelithiasis, which was subsequently confirmed on ultrasonography.

*For the diagnosis and teaching points, see page e84.  
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## IMAGES IN EMERGENCY MEDICINE

*(continued from p. e83)***DIAGNOSIS:**

*Mercedes-Benz sign.* Mercedes-Benz sign is a rare finding of distinct triradiate foci of air within the gallbladder, which reflects the pattern of gas-filled fissures within gallstones.<sup>1-3</sup> Cholelithiasis results from precipitation of bile components into hardened stones within the gallbladder.<sup>4</sup> Predisposing factors include female sex, postmenarchal status, age overall, obesity, and increased dietary intake of fat.<sup>4</sup> Classic symptoms of cholelithiasis comprise recurrent episodic right upper quadrant pain after consumption of a lipid-rich meal and are thought to result from impaction of gallstones at the gallbladder neck, with obstruction of bile outflow and distention of the gallbladder.<sup>4</sup> Right upper quadrant ultrasonography is the diagnostic criterion standard for evaluating cholelithiasis.

The clinical significance of Mercedes-Benz sign is that gallstones are implicated even when the calculi themselves are not directly observed.<sup>2,3,5</sup> Because only 15% to 20% of gallstones are radiopaque, lack of visualization on CT is common.<sup>3</sup> Therefore, Mercedes-Benz sign may alert the clinician to symptomatic cholelithiasis.<sup>3</sup> Treatment is directed at the clinical situation of the patient. Patients whose pain is controlled and who have isolated cholelithiasis may be discharged with outpatient follow-up.

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