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# Tensile gallbladder fundus sign

Venkatraman Indiran[1] and Jagannathan Kokilavani[2]

[1]Department of Radiodiagnosis, Sree Balaji Medical College and Hospital, 7 Works Road, Chromepet, Chennai, Tamilnadu 600044, India
[2]Family Physician, VK Clinic, Chromepet, Chennai, Tamilnadu 600044, India

Absence of flattening of gall bladder by the peritoneal surface of overlying anterior abdominal wall on at least one axial CT section is known as the 'tensile gall bladder fundus sign' (Fig. 1, 2) [1]. Figure 3 shows a normal gallbladder fundus indented and flattened by the anterior abdominal wall . This sign commonly occurs due to the increased gall bladder pressure associated with gall bladder distension commonly seen in acute cholecystitis patients [1]. Figure 4 shows taut distension of a trumpeter's cheeks which is metaphorically similar to the tensile gall bladder. CT features of uncomplicated acute cholecystitis include combination of gall bladder overdistension, mural thickening, mural enhancement, pericholecystic fat stranding, pericholecystic fluid, and reactive liver parenchymal enhancement [2]. 'Tensile gall bladder fundus sign' was found to be helpful in the early diagnosis of acute cholecystitis, even when inflammatory changes were not present on CT, with a sensitivity of 74% and specificity of 96 % [1]. 'Tensile gall bladder fundus sign' showed better diagnostic performance than diagnosis of gall bladder distention by size criteria in diagnosis of acute cholecystitis [1, 3]. 'Tensile gall bladder fundus sign' could be extrapolated to all cross sectional imaging modalities to identify early acute cholecystitis even without other findings.

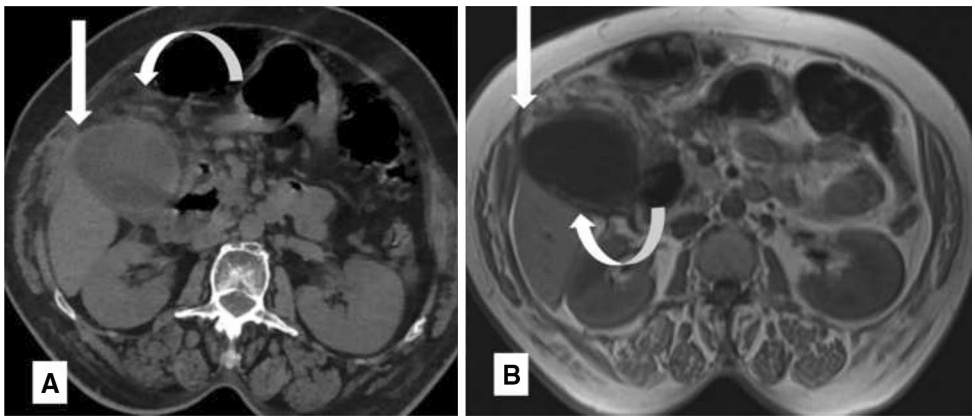


**Fig. 1.** Axial CT **a** shows distended non flattened gall bladder fundus indenting the overlying anterior abdominal wall (straight arrow) with pericholecystic fat stranding (curved arrow). Axial MRI T1 weighted image **b** shows distended non flattened gall bladder fundus indenting the overlying anterior abdominal wall (straight arrow) with gall bladder wall thickening (curved arrow).

*Correspondence to:* Venkatraman Indiran; *email:* ivraman31@gmail.com

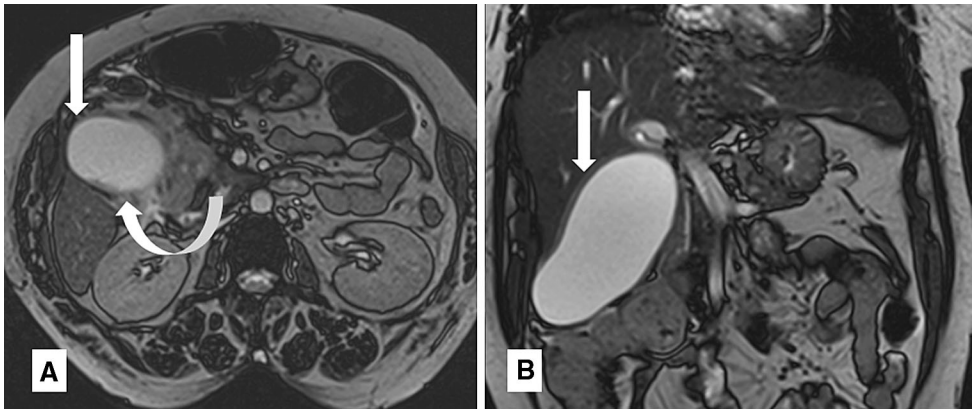


Fig. 2. Axial MRI steady state gradient echo sequence image **a** shows distended non flattened gall bladder fundus indenting the overlying anterior abdominal wall (straight arrow) with gall bladder wall thickening (curved arrow). Coronal steady state gradient echo sequence image **b** shows distended gall bladder with wall thickening (straight arrow).

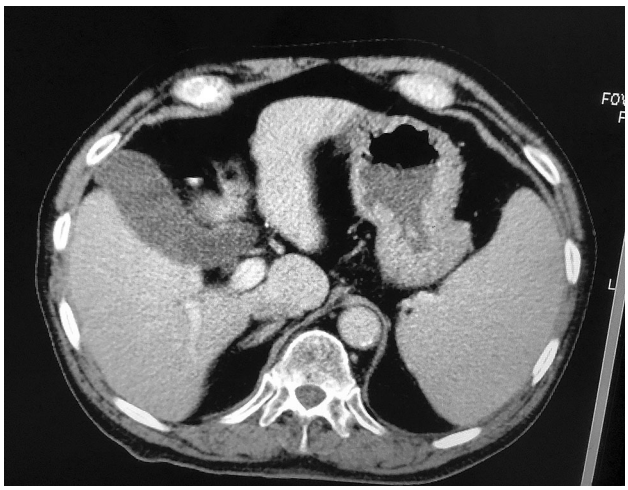

Fig. 3. Axial CT shows a normal gallbladder fundus indented and flattened by the anterior abdominal wall.

Fig. 4. Photograph showing taut distension of a trumpeter's cheeks which is metaphorically similar to the tensile gall bladder (https://commons.wikimedia.org/wiki/File:DizzyGillespie.png).

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**Compliance with ethical standards**

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**Ethical approval** All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

**Informed consent** Informed consent was obtained from individual participant included in the study.

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