

A rare case of spherical calcifications presenting as a submucosal lesion on the stomach wall: An EUS analysis

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Calcifications are easily seen in solid organs but are scarce in the stomach. We report a case of a gastric wall calcification with high-echoic characteristics on endoscopic ultrasonography (EUS), mimicking the clinical presentation of a gastrointestinal submucosal tumor (SMT) under gastroscopy.

A 59-year-old man with no significant prior medical history presented with 1 month of epigastric discomfort. No positive findings were found on physical examination. Gastroscopy revealed an 8 mm hemispherical submucosal lesion on the anterior gastric body [Figures 1 and 2]. Using EUS, a high-echoic lesion with shadowing was identified. However, deeper sections of the stomach could not be visualized [Figures 3 and 4]. Computed tomography (CT) was used to verify the presence of high-echoic change. A quasi-circular dense shadow (1458 U) with a clear boundary and uniform density was observed on the anterior gastric wall [Figures 5 and 6]. An obvious wall was not observed around the lesion under enhancement. Two submucosal dense shadows, with a diameter of 2.7 mm and 1.4 mm, were observed on the gastric fundus. Multiple patchy dense shadows

were observed on both sides of the diaphragm, one of which was spindle-like with a size of 18.2 mm × 29.0 mm × 9.5 mm [Figure 7]. Further biochemical testing was unremarkable. Vitamin D and parathyroid hormone levels were normal. There were no signs of tuberculosis on pulmonary CT.

DISCUSSION

Gastric submucosal lesions can be demonstrated in 0.36% of cases by gastrointestinal endoscopy.^[1] In our case, the gastric elevated lesion was easily misdiagnosed as an SMT. Pathologically, stromal tumors, such as gastrointestinal stromal tumors (GIST), myogenetic tumors, and neurogenic tumors, account for 54% of all SMTs, followed by heterotopic pancreas, cysts, lipomas, carcinoids, lymphangiomas, and hemangiomas.^[2] No case study has been reported on the presence of multiple calcifications on the stomach wall presenting as a submucosal lesion.

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Figure 1. Endoscopic examination revealed a hemispherical submucosal lesion with an 8 mm diameter



Figure 2. Endoscopic examination revealed an 8 mm hemispherical submucosal lesion



Figure 3. The lesion originated from the fourth layer of the gastric wall. A shadow is present behind the lesion, as seen on radial scanning echo endoscopy

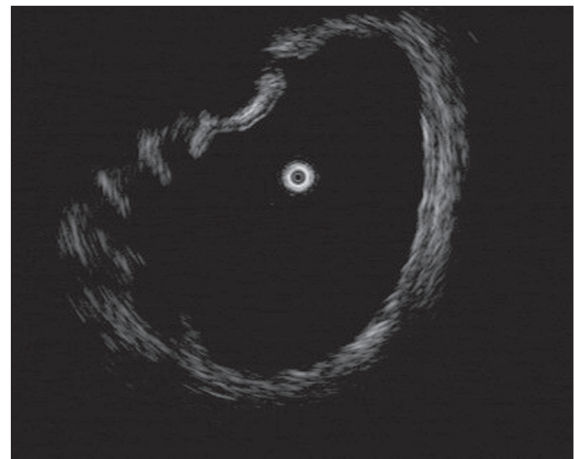


Figure 4. The deeper section cannot be visualized using a miniature probe ultrasound, due to the calcifications

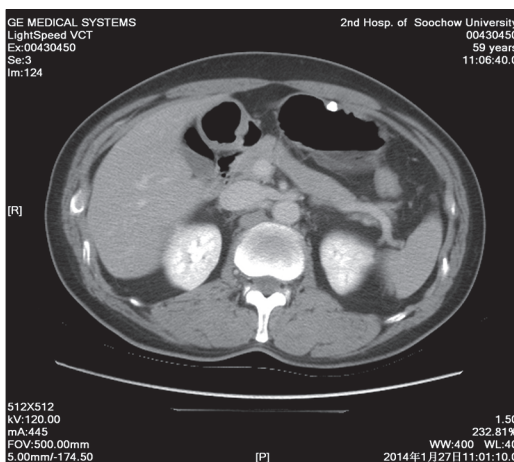


Figure 5. Computed tomography revealed the presence of a quasi-circular dense shadow originating from the gastric wall, indicating the presence of a calcification

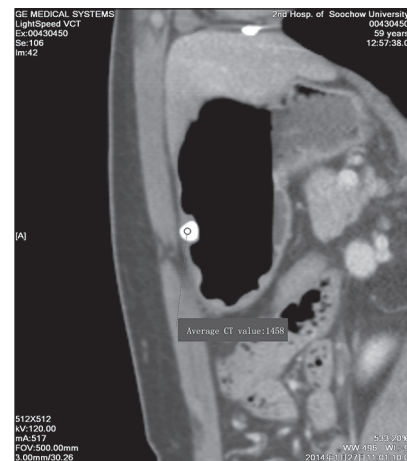


Figure 6. Computed tomography revealed a quasi-circular dense shadow originating from the gastric wall, indicating the presence of a calcification

A submucosal lesion is difficult to diagnose. EUS is effective in differentiating the nature of submucosal

lesions. Low or uneven echo lesions are common, whereas hyperechoic lesions of the stomach are rare.

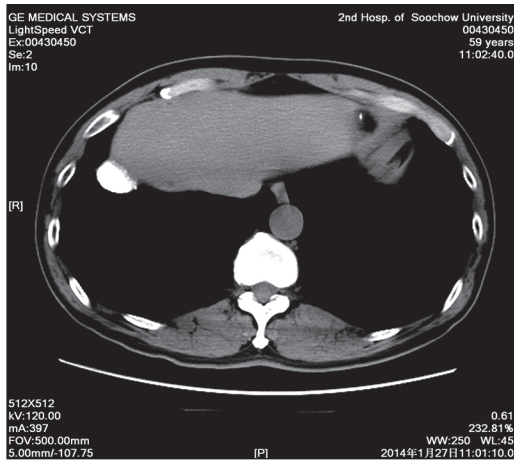


Figure 7. Multiple patchy dense shadows were observed on the sides of the diaphragm, one of which was spindle-like with a diameter of 18.2 mm × 28.98 mm × 9.53 mm, as seen on computed tomography

It has been reported that GISTs can present with focal or extensive calcification and can result in diagnostic confusion.^[3-4] However, the presence of calcifications on the stomach wall has never been reported. The possibility of calcifications should be considered when hyperechoic lesions are found in the stomach wall during EUS examination. In our case, unenhanced CT verified the EUS diagnosis.

Calcifications, commonly found in the liver, prostate, kidney, lung, and myocardium are deposits of calcium with highly echoic characteristics, as seen with stones or other high density lesions typically seen on ultrasound or CT. In our case, we speculate that

the pathogenesis of the multiple calcifications was secondary to local tissue degeneration or necrosis, after precluding common causes such as tuberculosis, hyperparathyroidism, and tumor. Hence, the submucosal calcifications required no further intervention and the patient was instructed to undergo follow up.

Calcifications presenting as submucosal gastric wall lesions have not been previously reported. Therefore, when submucosal lesions are found in the stomach, calcifications should be considered along with neoplastic tumors. Further investigation by EUS is necessary.

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Conflicts of interest

There are no conflicts of interest.

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