An alternative endoscopic treatment for massive gastric bezoars: Ho:YAG laser fragmentation

Gastrointestinal (GI) bezoars are aggregates of indigestible material that occur mainly in patients with altered GI anatomy (i.e., bariatric surgery, partial gastrectomy) and/or motility disorders (i.e., gastroparesis, drug-induced delayed gastric emptying). Other risk factors are high fiber intake, psychiatric diseases, and severe constipation [1].

Treatment strategies for bezoar fragmentation include pharmacological, endoscopic, and surgical approaches. Endoscopic treatment of gastric bezoar consists of attempted fragmentation by using different devices such as snare, forceps, baskets, lithotripters, argon plasma coagulation, and needle-knife [2,3]. The use of a laser-ignited mini-explosive technique with neodymium-doped yttrium aluminum garnet (Nd:YAG) laser has also been described [4]. To date, only one article from China (original language) has described the use of holmium:YAG (Ho:YAG) laser lithotripsy in this field [5]. We present two video cases of massive gastric phytobezoar, which were irrespnsive to pharmacological approaches and were successfully treated with Ho:YAG laser (Lumenis Ltd., Yokneam, Israel).

The first patient was a 73-year-old man with a history of Billroth I partial gastrectomy for gastric cancer, who had endoscopic evidence of a massive, hard, phytobezoar, 10 cm in diameter (Video 1). The phytobezoar was successfully treated with 200 micron laser fiber (Lumenis VersaPulse P20 lithotripter, frequency 4–8 Hz, pulse energy 2000 mJ) The procedure time was 60 minutes.

The second patient was a 58-year-old woman with a gastric band for treatment of obesity, who showed a large phytobezoar (8 cm in diameter) in the proximal gastric pouch (Video 2). In this case, we used a 550 micron laser fiber, which allowed the diffusion of higher pulse energy (Lumenis VersaPulse PowerSuite 100W lithotripter, 10 – 30 Hz, 3000 mJ), resulting in a shorter procedure time (24 minutes).

In both procedures, complete bezoar fragmentation was achieved in a single endoscopic session. No postprocedural complications were registered in the patients and they were discharged 1 day after the endoscopic treatment.

In conclusion, Ho:YAG laser fragmentation represents a safe, effective, and rapid endoscopic approach for the treatment of massive gastric bezoars.

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