

Posttraumatic gastric wall hematoma in a patient under anticoagulant therapy. Case report and literature review

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Abstract

We report the clinical observation of a 58-year old patient who presented with upper abdominal pain and a small ecchymosis located in the umbilical area. Personal history of the patient revealed ischemic heart disease and chronic atrial fibrillation. He was under treatment with oral anticoagulants (coumarins). The clinical data and especially the imaging investigations led to a diagnosis of gastric wall hematoma, possibly occurring post-traumatically in a patient under anticoagulant treatment. A conservative therapeutic approach was adopted and ultrasound surveillance. After 6 months the gastric parietal collection manifested complete resorption, spontaneously. In relation to the case presentation, we also discuss some issues on the frequency, diagnosis and therapeutic attitude in this rare complication of anticoagulant therapy.

Keywords: hematoma, stomach, anticoagulation

Rezumat

Prezentăm observația clinică a unui pacient în vârstă de 58 de ani cu cardiopatie ischemică și fibrilație atrială cronică, aflat sub tratament anticoagulant cu dicumarinice, care s-a adresat serviciului nostru pentru dureri în etajul abdominal superior, însoțite de constatarea unei mici echimoze la nivelul ombilicului. Datele clinice și, îndeosebi, explorările imagistice ne-au orientat spre diagnosticul de hematom de perete gastric, mai probabil posttraumatic, la un pacient aflat sub tratament anticoagulant. Atitudinea a fost conservativă, cu monitorizarea pacientului pentru 6 luni, timp în care colecția parietală gastrică a remis complet. În relație cu observația prezentată, sunt oferite câteva considerente legate frecventă, de diagnosticul și atitudinea terapeutică față de aceasta complicație rară a medicației anticoagulante.

Cuvinte cheie: hematom, stomac, anticoagulare

Gastric wall hematoma is a very rare condition [1], 33 cases being published in the medical literature until December 2010. Most cases occurred in patients suffering from coagulopathies [2-7], or under anticoagulant therapy [8-12], the rest being complications of peptic ulcers [13,14] and endoscopic therapy [15], or a consequence

of a ruptured gastric artery aneurysm [16-19], chronic pancreatitis [20], recurrent vomiting [9] or occurring idiosyncratically [21-23].

Case report

A 58-year old male patient was referred in January 2010 from the cardiology department to the gastroenterology out-patient department of the 1st Medical Clinic in order to establish the cause of diffuse upper abdominal pain, accompanied by a small superficial umbilical ecchymosis, with onset 1 week prior to presentation. The family history revealed hypertension affecting his father. The patient did not smoke, had a personal history of hypertension, ischemic heart disease, permanent atrial fibrillation and spondylarthrosis. His treatment consisted of

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oral antihypertensives (Tenox 1cp/day, Egilok 1cp/day) and coumarins (Trombostop 1 cp/day). In the 2 months prior to admission in our hospital the patient had used a massage device combining presopuncture and infrared heat that was applied on the upper abdomen. This principle of treatment is used for spondylarthrosis. The application's areas, established by the utilization protocol, include also the epigastric region.

On admission, the patient was found to have 2nd degree obesity, arrhythmia, a heart rate of 75/min, BP=130/80 mmHg. The physical exam of the abdomen revealed slight tenderness on profound palpation of the epigastric region, umbilical and supraumbilical hernia and a small ecchymosis in the umbilical region.

At ultrasonography examination a massive, well-defined collection of partially fluid/partially pseudoparenchymal content, extending from the subhepatic region to the splenic region was found. The sonographic aspect was highly suggestive of an intraperitoneal hematoma in the clinical context of the patient (the use of anticoagulants) (fig 1, fig 2). At this stage, the collection could not be defined as belonging to any particular organ, and was interpreted to be intraperitoneal. Repeated anamnesys revealed no relevant traumatic event in the recent history, with the exception of the above mentioned use of a heat-emitting massage device.

The patient was admitted to the Gastroenterology Department in order to continue investigations for a positive diagnosis. Laboratory studies showed a non-specific inflammatory syndrome (Erythrocyte Sedimentation Rate = 55 mm/h, C-reactive protein = 2.4 mg/dl) and prolongation of the prothrombin time (TQ = 17", INR = 1.57). A new ultrasound examination, including gastric hydrosonegography, gives no supplementary information (fig 3). Abdominal CT-scan evidenced a slightly lobulated, well delineated mass, measuring 17/5/6 cm, with spontaneous hyperdense (50-70UH) aspect especially in the centre, non-enhancing, expanding on the greater curvature of the stomach, from the fornix up to the antral region. The mass was interpreted as a gastric wall hematoma (fig 4). No lumbar-aortic adenopathies or free intraabdominal fluid were found. In order to increase diagnostic accuracy, an echoendoscopy was performed. A "cystic" perigastric structure located between 58 and 45 cm from the teeth arch, having a mixed, liquid and pseudoparenchymal content was described; in the sections taken from the middle part of the stomach. The collection was found to be in intimate contact with the muscularis propria of the gastric wall. There were no perigastric invasion or satellite adenopathy. The final diagnosis was that of a probable large, partially organized gastric wall hematoma (fig 5, fig 6).



Fig 1. Abdominal ultrasonography – transverse epigastric section. Fluid collection with partial parenchymatous-like structure (arrow).



Fig 2. Upper abdominal ultrasonography. Massive fluid collection, with floating echogenic content (blood clots?).



Fig 3. Gastric hydrosonegography, with apparent juxtagastric collection. St – stomach with ingested water; C – collection.

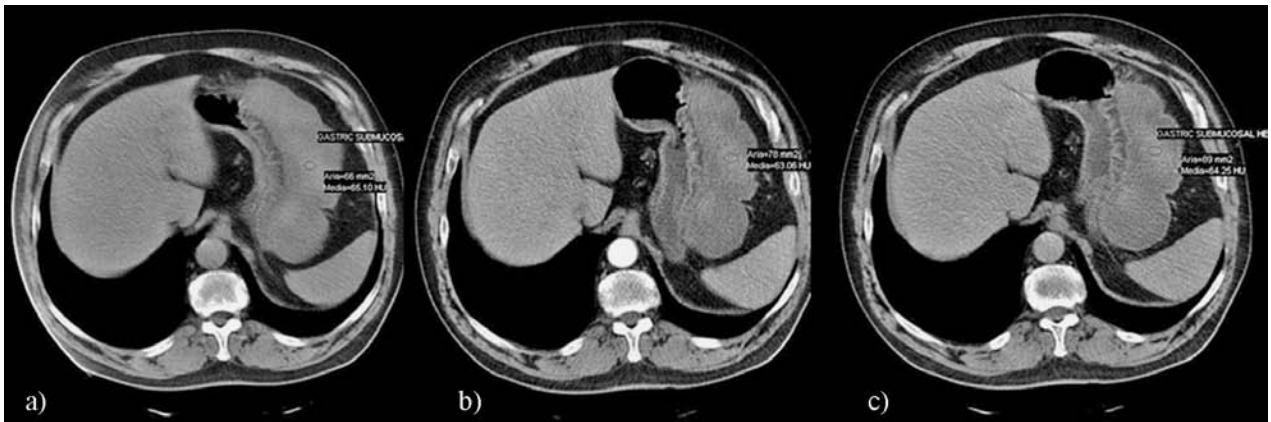


Fig 4. Abdominal CT a) non enhanced CT: Native hyperdense large mass (64UH), sharp delimited, situated under the mucosa of gastric wall (greater curvature). This aspect is suggestive for gastric wall acute/subacute hematoma. No evidence of intra-abdominal fluid; b) Arterial phase contrast enhanced CT: the mass is situated within the gastric wall and does not enhance. The gastric mucosa is well visible; c) in the venous phase – the same aspect of non-enhancing mass (65 UH), suggestive for hematoma.

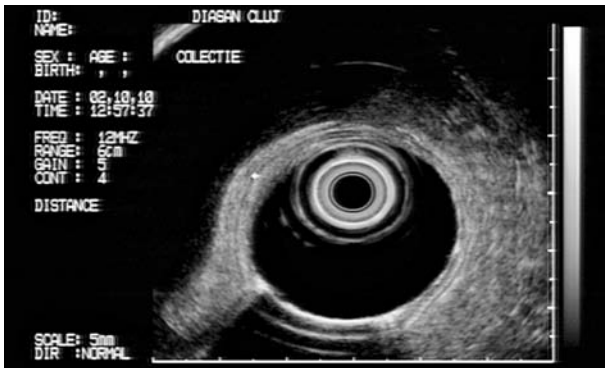


Fig 5. EUS image from body stomach. Hypoechoic lesion originating from the 4th layer of the gastric wall (muscularis propria) of large size and mixt content – cystic and solid.

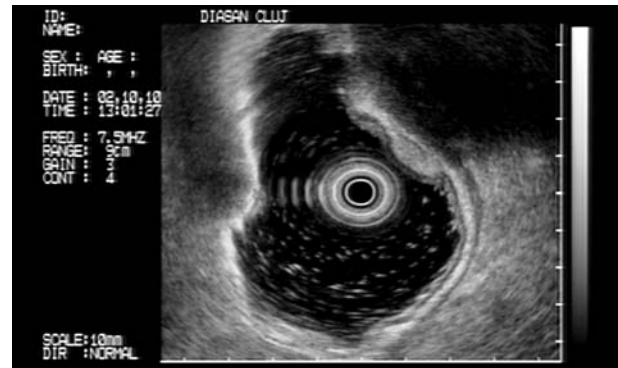


Fig 6. EUS. The clear origin of the cystic mass in the 4th layer of gastric wall. Edema of the gastric wall.

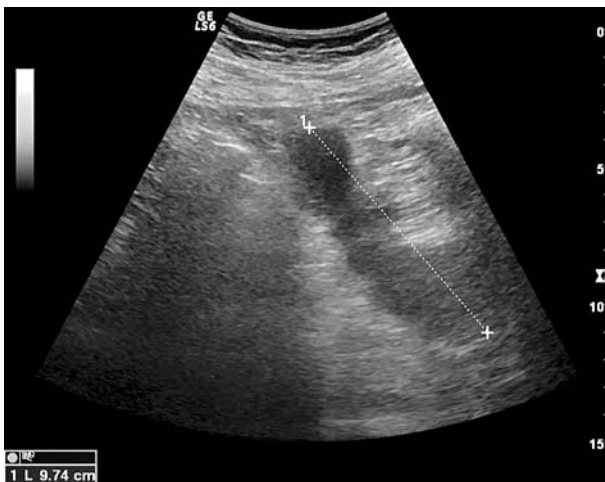


Fig 7. Upper abdominal ultrasonography. The decrease of the gastric intramural collection volume in the 3rd month of follow-up.

We decided to discontinue the anticoagulants and recommended an antiplatelet treatment, at least until complete resorption of the hematoma. Because of the good general status of the patient, a conservative attitude was decided and ultrasonographic monitoring every 2 weeks (fig 7). The resorption process was slow, but the 6-month ultrasound check-up found complete remission of the hematoma.

Discussions

Up until December 2010, 33 cases of gastric wall hematoma, occurring in various circumstances, have been published (table I). Only few cases (4 cases) [8-12] occurring in relation to anticoagulant therapy have been recorded. In 3 other cases, mechanical trauma due to upper endoscopy was incriminated, but no case with intramural collection secondary to an external traumatic factor has yet been published.

Table I. Gastric wall hematoma – cases reported until December 2010

Causes	References	Number of cases	Conservative treatment	Surgical treatment
Coagulopathies	2-7, 25-27, 31, 32	11	9	2
Anticoagulant therapy	8-12	5	4	1
Peptic ulcer	13,14, 24,30	4	1	3
Endoscopic therapy	15	3	3	0
Ruptured gastric artery aneurysm	16-19	4	1	3
Chronic pancreatitis	20	1	1	0
Ruptured spleen	29	1	0	1
Ingestion of a foreign body	28	1	1	0
Idiopathic	21-23	3	1	2
Total of cases		33	21	12

In our case, the development of the hematoma could have apparently been favored by the use of a massage device combining presopuncture and infrared heat in a patient taking anticoagulants. Although a rather long period of time elapsed between the possible external mechanical/physical trauma and the moment the hematoma was observed, we believe that this sequence can be explained by the slow formation of the hematoma in a patient with insufficiently monitored anticoagulant therapy.

In the cases of gastric wall hematoma described so far, the imaging investigations used in order to ensure positive diagnosis were abdominal CT scan [13,20], CT angiography [5,8,9,13], echoendoscopy [20], abdominal ultrasound [24-27] and barium passage [3,9,28-31].

Abdominal CT is the most sensitive and specific investigation, showing a well-defined intramural mass of blood density. In addition, CT scan helps in better describing the extension of extramural dissection and excludes other conditions that might imitate gastric hematoma.

CT angiography can be used in order to detect active bleeding or pseudoaneurysms located in the gastric wall; in the particular case of active bleeding, it also allows selective angiographic embolization, such as that performed in the case published by Imazumi et al [9].

Echoendoscopy [20] is useful in determining the origin, the depth the intramural mass is located at and the regional lymph node involvement. The main advantage of this method lies in the possibility of performing fine-needle aspiration, followed by ascertaining the nature of the collection as well as providing cytological and histological material essential for a complete diagnosis.

Ultrasonography may describe a hypoechoic mass of usually uncertain origin, because of the non-specific data

it provides [24,25]. In our patient we encountered the same limit of ultrasonographic examination.

In the first published studies [30,31], barium passage was the diagnostic method of choice for gastric wall hematomas; however, it cannot discriminate between solid and cystic gastric tumors.

In our observation, ultrasonography identified the intraperitoneal collection and suggested its nature, as a probable hematoma, given the clinical and traumatic context of the patient. CT and then echoendoscopy cleared the affiliation of the hematoma to the gastric wall. Clinical data and imaging studies helped us to exclude other diagnosis problems, such as gastric adenocarcinoma, lymphoma and leiomyoma, stromal tumors (GIST), pancreatic pseudocyst, cystic or mixed (cystic and solid) pancreatic tumors and extravisceral intraabdominal collections of unknown etiology.

In the case presentations published so far, the treatment of intraparietal gastric hematoma was conservative [6,8,9,13], surgical [7,18-20,32] or interventional, through percutaneous drainage [20]. The therapeutic approach in each case was guided by the patient's general status, hemodynamic parameters, the cause of the hematoma, as well as the persistence of intraparietal bleeding. We found a single case in literature (described by Chou et al [20]) treated by percutaneous drainage. The hematoma in this case occurred due to severe focal pancreatitis. This is a particular situation, since acute pancreatitis usually leads to duodenal wall hematomas [33-36].

In our patient a conservative approach was decided, given the good general status of the patient, the absence of hemodynamic and hematologic abnormalities or persistent bleeding. Anticoagulant therapy was stopped and replaced by antiplatelets agents until complete remission

of the hematoma. Surveillance of hematoma resorption was assured by ultrasonography. Complete resorption was achieved after 6 months.

Our observation has a particular interest since we could not prove an anticoagulant overdose that would clearly explain the intraparietal bleeding. At presentation, the patient showed no signs of coumarin overdose. The dose was constant for a long period of time, which cannot exclude periods of overdosing. Furthermore, with the exception of the 3 cases of gastric intraparietal hematomas occurring after upper endoscopy (and therefore incriminating a clear traumatic event), this is the first presentation so far of a gastric wall hematoma secondary to an external physical factor. With regard to the treatment, we thought first of the possibility of percutaneous US-guided drainage. Other authors' experience, communicating spontaneous remission of hematomas, as well as the good general status of the patient, determined our more conservative approach. It was a justified decision, with the patient recovering slowly and without complications.

Conclusions

Gastric wall hematoma is a very rare condition. In a clinical setting, the best diagnostic method seems to be abdominal CT and, probably, echoendoscopy, when available. The therapeutic modalities of this condition are conservative, surgical or minimal-invasive methods. We presented this case because of the rarity of the condition as well as the possible association of two etiopathogenic factors: anticoagulant therapy and an aggressive mechanical/physical factor represented by local abdominal physiotherapy. The main differential issues were essentially guided by the clinical data of the patient.

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