PATIENTS WITH SPONTANEOUS INTRAMURAL HEMATOMA AND OUR CLINICAL APPROACH

SPONTAN İNTRAMURAL HEMATOMLU HASTALAR VE KLİNİK YAKLAŞIMIMIZ

INTRAMURAL HEMATOMA

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Öz

Amaç: Travma sonucu olmayan, spontan ince barsak hematomları oldukça nadir görülen klinik tablolar olup klinik tanıları da zor konulabilmektedir.İleri görüntüleme yöntemleri sayesinde tanı konan bu durumlarda genellikle antikoagulan kullanımı suçlanılmakta ve dikkatli anamnez önerilmektedir.Retrosepektif olarak taradığımız spontan intestinal hematom vakalarımızı incelemeyi planladık. Gereç ve Method: Üç merkezli olan bu çalışmada Ocak 2010-Temmuz 2016 tarihleri arasında spontan intestinal hematom tanısı konan hastalar çalışmaya dahil edilmiş ve demografik verileri ile tedavi ve radyolojik yöntemleri kaydedilmiştir.Sağlıklı bilgilere ulaşılamayan hastalar çalışma dışı bırakılmıştır. Bulgular: Toplam 11 hastaya tanı konmuş olup bunların 6(%54.5)'sı kadın,5(%45.5)'i erkektir. Ortalama yaşı 67.4(58-78) olup hastalarımızın şikayetlerinin başlaması ile tanı alması arasında geçen süre 5.9(1-15) gündür. Hastaların tamamı (%100) antikoagulan tedavisi almaktaydı ve. başvuru sırasında ortalama INR değerleri: 5.8(3.2-8.4) idi.6(%54.5)'sında tutulan segment jejunum iken, 5(%45.5) hastada tutulan segment ileumdu.Tamamı(%100) konservatif tedavi ile taburcu edildi. Tartışma: Spontan intramural hematomlar nadir görülen bir durum olup antikoagulan kullanan hastalarda mutlaka akılda tutulmalıdırlar.Genellikle konservatif tedavi bu tür vakalarda yüz güldürücü sonuçlar vermektedir.

Anahtar Kelimeler

Spontan; Barsak; Hematom

Abstract

Aim: Non-traumatic, spontaneous small intestinal hematomas are very rare clinical conditions, diagnoses of which are difficult. These cases, in whom the diagnosis is made by the help of advanced visualization techniques, are usually attributed to anticoagulant therapy and obtaining a careful medical historyis suggested. We planned a retrospective study on our cases with spontaneous intestinal hematoma. Material and Method: In thismulti-center study involving three medical facilities, patients diagnosed with spontaneous intestinal hematoma between January 2010 and July 2016 were included in the study and their demographic data was recorded along with their treatments and radiological methods. Patients whose accurate data could not be acquired were excluded from the study. Results: A total number of 11 patients were diagnosed, 6 (54.5%) of which were women and 5 (45.5%) of them were men. The average age of the study group was 67.4 (58-78) years and the duration between the initiation of their complaints and the time of diagnosis was 5.9 (1-15) days. All patients were under anticoagulant therapy and their average INR value was 5.8 (3.2-8.4) when they were first admitted. The affected segment was jejunum in 6 patients (54.5%) whereas the ileum was involved in 5 patients (45.5%). All (100%) patients were discharged from the hospital as the result of conservative treatment. Discussion: Spontaneous intramural hematoma is a rare condition that has to be kept in mind when treating patients with anticoagulant therapy. Conservative treatment generally gives pleasing results in this condition.

Keywords

Spontaneous; Intestine; Hematoma

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Introduction

Spontaneous small intestinal hematoma that is not secondary to trauma isa rare condition. Extensive use of anticoagulants being in the first place, hemophilia, idiopathic thrombocytopenic purpura,von Willebrand disease, leukemia, lymphoma, multiple myeloma, chemotherapy, vasculitis and pancreatitis are among other causes [1-5]. Intramural intestinal hematoma was first identified by McLouchlan in 1838 during the autopsy of a 49 years old male patient who died from dehydration and intestinal obstruction. In this published case of his, the localization was at the duodenum and it was diagnosed as a pseudoaneurysm tumor. Radiological identification of spontaneous intestinal hematoma was made by Liverud 100 years later [6,7]. Berman and Mainellareported the first anticoagulant-induced spontaneous intramural small intestinal hematoma in 1952 [8]. In 1968,Herbert published the first extensive investigation on this subject by adding his own two cases to the six former cases existing in the literature [9]. Anticoagulant therapy-related spontaneous intramural gastrointestinal tract hematomas are mostly located in the duodenum and small intestine, whereasthe involvements of the colon and rectum are rare [10-13]. Since our patient group was admitted to our clinics with delayed diagnosis, the physical and radiological examination are enough for a diagnosis when they are considered together with the patient's medical history, and the conservative treatment results in remission of the hematoma in most of the patients [14], we felt the need to write this article with the aim of retrospectively investigating our patients who were treated for anticoagulant-induced spontaneous intramural small intestinal hematoma together with the review of the literature.

Material and Method

Patients with spontaneous anticoagulant-induced intramural intestinal hematoma who were diagnosed and treated inAdnan Medneres University Department of General Surgery, Bozyaka Training and Research Hospital Division of General Surgery, and Inonu University Department of General Surgery between the dates of January 2010 and July 2016 were investigated with respect to their demographic structures, medical histories, radiological appearances and treatment methods; their data were recorded and compared. Patients whose accurate data could not be acquired from their chartswere excluded from the study.

Statistical Analysis

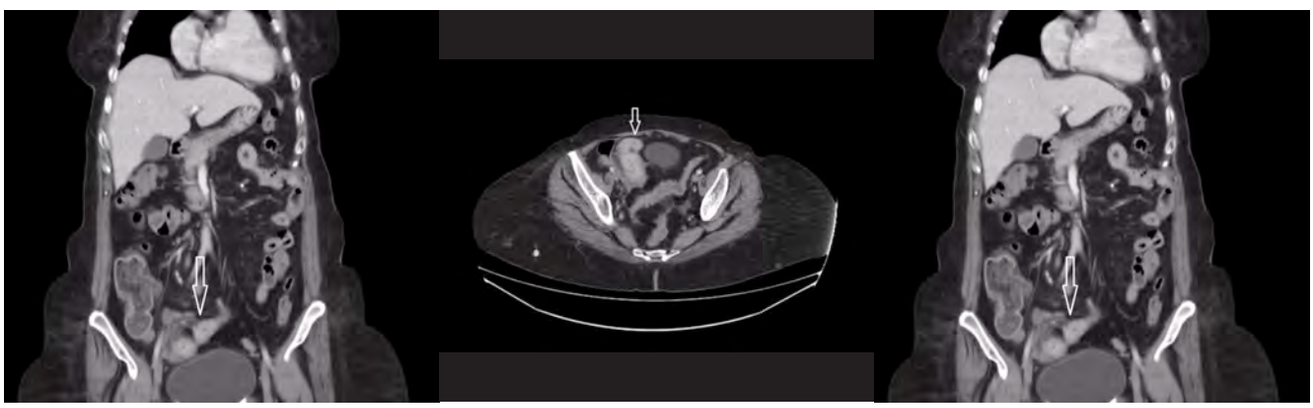
The statistical analysis of the data was performed using SPSS 21.0 software package (SPSS 21.0 software IL-Chicago-US). The statistical results were obtained for descriptive analysis, demographical information and clinical features. The average values ± standard deviation values and percentages of the results were calculated.

Results

There were a total of 11 patients who were diagnosed and treated for spontaneous anticoagulant- induced intramural intestinal hematoma between the dates of January 2010 and July 2016. Six (54.5%) of our patients were female and 5 (45.5%) of them were male. The average age of our patients was 67.4 (58-78) years. Four (36.3%) of our patients were diagnosed by presenting to the emergency service, while the remaining seven (63.7%) were diagnosed following their admission to the clinic.The duration between their initial complaints and the diagnosis was 5.9 (1-15) days. The number of hospital admissions during this period was 2.1 (1-4). Anticoagulant therapy was administered in four (36.3%) of our patients due to coronary artery disease, in three (27.3%) due to valve replacement, in three (27.3%) due to chronic atrial fibrillation, and in one (9.1%) patient due to deep venous thrombosis. All of our patients were hospitalized for treatment. The average INR value was 5.8 (3.2-8.4) during the first admission. When their complaints during their admission were analyzed, eleven (100%) patientsmanifested tenderness, three (27.3%) had mild distention, and four (36.3%) had nausea and vomiting. None of the patients manifested rebound-defense in their first physical examination. No findings of hematochezia or melenawere present during their rectal examinations.None of the patients showed non-gastrointestinal bleeding (epistaxis, hematuria, hemoptysis etc.). Two (18.2%) of the patients had moderate leukocytosis (13.600-14.200 K/mm3) while the remaining nine (82.8%) patients did not have leukocytosis. One (9.1%) patient had electrolyte imbalance (Na:151mEq/L, K: 2.78mEq/L) and elevation of creatinine caused by pre-renal acute renal failure (creatinin:3.1) due to reduced oral intake, recurrent nausea-vomiting and late diagnosis. The remaining ten (90.9%) patients had normal biochemical values.Abdominal ultrasonography and abdominal computed tomography were performed in all patients. Ultrasonography enabled the diagnosis in only six (54.6%) of the patients whereas computed tomography showed that all (100%) patients had long-segment mural thickening (the segment length,scanned with computed tomography, was reported to be approximately 15-25 cm) and was diagnostic by showing the free fluid between the surrounding bowel loops (PICTURES 1,2 and 3). Theinvolved intestinal loops were at jejunal and ileal levels in all (100%) patients. While the involved intestinal loops were jejunal in six (54.5%) of the patients,the ileal segments were affected in five (45.5%). The involved intestinal loop was solitary in all of our patients; no multi-involvement of the loops was observed. No extension of the lesion to the colonic loop was present in the patients with ileal involvement. All of our patients responded to conservative treatment (intravenous hydration, discontinuation of oral intake, parenteral nutrition, correction of coagulopathy with plasma and vitamin K, low molecular weight heparin treatment administered following the decline in INR value, frequent mobilization, and initiation of oral intake gradually following the regression of symptoms); no surgical need emerged. The average duration of hospitalization was 8.4 (5-12) days. (Table:1) All patients were discharged from the hospital following the fullrecovery of clinical symptoms (cessation of abdominal pain, improvement of distention, toleration of oral feeding), without taking radiological complete hematoma resolution into consideration in abdominal tomography. In all of our patients, the abdominal tomography, performed during the outpatient follow-up two weeks after the hospital discharge, revealed complete hematoma resolution, disappearance of intra-abdominal fluid and the dilatation of the intestinal loops proximal to the hematoma.We discharged all our patients with prescription of subcutaneous low molecular weight heparin. We

Table 1. General features of the patients

Sex	Age (years)	The site of admission	Time passed prior to diagnosis (days)	Number of institutions admitted before	Comorbid disease	INR value	Leucocytosis	Abdominal USG	Abdominal CT	Involved GIS site	Hospitalization (days)	Treatment method
F	65	Outpat.	5	2	Coronary artery disease	6.2	normal	-	+	ileum	6	conservative
F	69	Outpat.	3	1	Valve replacement	3.2	normal	+	+	jejunum	7	conservative
M	69	Emerg.	1	1	Valve replacement	5.8	normal	+	+	ileum	8	conservative
F	71	Outpat.	4	2	Coronary artery disease	7.4	normal	+	+	jejunum	9	conservative
M	73	Emerg.	9	3	Chronic atrial fibrillation	8.4	14.200	_	+	ileum	12	conservative
M	59	Outpat..	6	2	Deep venous thrombosis	6.4	Normal	+	+	jejunum	8	conservative
F	60	Outpat.	5	3	Chronic atrial fibrillation	5.2	normal	+	+	jejunum	7	conservative
F	69	Outpat.	4	1	Valve replacement	4.8	Normal	+	+	ileum	10	conservative
M	68	Emerg.	6	2	Chronic atrial fibrillation	7.2	Normal	-	+	ileum	8	conservative
F	78	Outpat.	7	2	Coronary artery disease	3.5	Normal	-	+	jejunum	9	conservative
M	61	Emerg.	15	4	Coronary artery disease	5.7	13600	_	+	jejunum	9	conservative
	67.4 (59-78)		5.9(1-15)	2.1(1-4)		5.8(3.2-8.4)		54.6%	100%		8.4(5-12)	



Figures 1,2,3. 69 years old female patient, intestinal intramural hematoma, long segment wall thickening at ileum, minimal free fluid around the loop and minimal dilatation at proximal intestinal loop are visible.

resumed the anticoagulant therapyafter the abdominal tomographic images obtained during the outpatient follow-up admission revealed complete resolution of hematoma.

Discussion

Anticoagulant-induced intramural hematoma of the gastrointestinal is one of the rare complications of drug utilization. Its annual incidence is 1/2500 [15]. It is usually not life-threatening and is responsive to medical treatment [16]. 36% of all gastrointestinal intramural hematomas are secondary to anticoagulant therapy [17].

Its probable pathophysiology is the rupture of the terminal artery of themesentery and the blood dissecting the site between the muscularis mucosa and the muscular layer following the penetration of the muscular layer of the intestinal wall [18].

Even though the hematoma involving the intestinal wall was solitary in our patient group, it has beenreportedin the medical literature that 15% of spontaneous intestinal hematomas are multiple and 85% are single. The most frequently involved siteswere reported to be the jejunum with a rate of 69% and the ileum with a rate of 38%. Although the dilatation of the ileal intramural hematoma into the colonic segment is probable, the incidence of isolated spontaneous colonic and rectal intramural hematoma is rare and there are only few patients reported in the literature [2, 19, 20]. While duodenal intramural hematomas are mostly secondary to endoscopy and pancreatitis, spontaneous duodenal intramural hematoma is also reported in the literature [3].

In coherence with our study, there is no difference between the ratios of affected males and females in the literature. The average age of the affected patient group is 6-7 decades [2, 16, 18]. This can be explained by the fact that the structure of the mesenteric terminal artery, which penetrates the intestinal wall, deteriorates with age and the prescriptions of anticoagulant

therapy due to comorbid diseasesat this age period are more frequent.

Sorbello MP et al. reported in their analysis of 21 clinical studies and case reports that during the initial diagnosis, 97.5% of the patients had abdominal pain, 50% had nausea, 45% had vomiting complaints and only 20% of the patients stated that the only complaint was abdominal pain during their first admission to the hospital [21]. The small intestinal obstructions are mostly incomplete and the findings in physical examination are generally vague [22, 23]. Hence, in our clinical study also, only four (36.3%) of our patients were diagnosed through emergency service admission and the remaining seven (63.7%) were diagnosed through their outpatient admissions.Various authorshave determined the period between the initiation of complaints and the time of diagnosis as 2.5-5 days[14, 16, 21] whereas we found theaverage duration to be 5.9 [1-15) days in our study. However, we also found that the number of hospital admissions during this period was 2.1 [1-4]. In our opinion, this means that patients are diagnosed with delay due to the fact that they present late to the medical facilities since their symptoms are vague, and also because anticoagulant use is ignored in the clinics and emergency services, investigations that will help detecting the coagulopathy are not being done, physical examination findings are vague and intravenous contrast enhanced abdominal computed tomography is not being used liberally. The average INR value of the patients in the initial hospital admission is 6.2-11.6 according to the literature [2, 16, 21]. Intestinal wall thickening and presence of intraabdominal free fluid in these patients can only be identified through ultrasonography (USG) and IV contrast-enhanced abdominal tomography (CT). However, these symptoms do not specifically suggest small intestinal intramural hematoma; they can also suggest infectious small intestinal disorders, inflammatory intestinal diseases, and small intestinal ischemia [24]. In the literature, there is a consensus on the fact that abdominal tomography is the most valuable diagnostic method in intestinal intramural hematoma [16, 21]. In our patient group, USG was diagnostic in six (54.6%) of our patients whereas computed tomography was diagnostic for all (100%) of them.

In the literature, there are nonoperatively followed-up cases in whom diagnosis was made through diagnostic laparotomy and the operation wasterminated without performing a resection [18]. Usually, the clinical findings resolvewithin five to seven days when conservative treatment methods are chosen and no surgical intervention is required. The complete radiological resolution occurs in a few weeks. If the case remains radiologically the same after two months, a different underlying clinical cause should be considered [15, 14]. Late complications such as recurrent bleeding or stenosis are rare [21].

Conclusion

Spontaneous intramural hematoma of the gastrointestinal system is a rare condition. Coagulopathy due to anticoagulant therapy is its most common cause.Nonspecific abdominal pain, mild distension, nausea and vomiting are its clinical symptoms. Leukocytosis and the symptoms of acute abdomen are rare. Electrolyte imbalance may be present due to limited oral intake, recurrent nausea and vomiting, together with delayed diagnosis. The most frequently involved gastrointestinal sites are the jejunum and ileum. The handicap for this clinical condition which usually does not require surgery and responds very well to conservative treatment is the delayed diagnosis. For the diagnosis of patients who have medical histories of anticoagulant usage due to their comorbid disorders and who are admitted to the emergency services or outpatient clinics with thecomplaint of nonspecific abdominal pain, it will be sufficient to conduct investigations which will reveal their coagulopathies and to obtainabdominal tomography with intravenous contrast enhancement. Early response to conservative treatment and complete resolution in the control abdominal tomography, performed 2-3 weeks after hospital discharge are sufficient for differential diagnosis. Late complications such as recurrent bleeding and stenosis have not been reported in the literature.

Competing interests

The authors declare that they have no competing interests.

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