Intestinal obstruction due to transverse colon volvulus

Sir,

Colon volvulus is abnormal twisting of a segment of bowel, usually the mesenteric, on itself along its longitudinal axis, causing obstruction[1]. Volvulus of the transverse colon represents only 4% of all colon volvulus. It was first described by Von Rokitansky in 1836 and is considered a surgical emergency[2]. Diagnosis of colon volvulus requires clinical suspicion and radiography. Initial study with plain x-ray is then confirmed with barium enema. CT scan is useful not only in the diagnosis, but to identify potential complications (strangulation, perforation, peritonitis); these data are most valuable for the treatment plan, which is surgical in most cases.

A 39 year-old man with limited quality of life due to infantile paralysis and a history of epilepsy and chronic constipation attended the emergency department with abdominal pain of 24 hours duration, vomiting and constipation. On physical examination the abdomen was distended, tympanic, and very painful to palpation. Laboratory tests showed leukocytosis and hyperglycemia. Supine abdominal x-ray showed dilated loops of the bowel, right colon, and a hugely dilated loop in the upper left abdomen with a double wall and beak-shaped stenosis (Figure 1). Supine left lateral x-ray showed a large air-fluid image (Figure 2). The study was completed with abdominal CT which excluded gastric volvulus and revealed a large volvulus of the transverse colon with signs of intestinal ischemia. Emergency laparotomy revealed a severely dilated loop of the transverse colon with a mesocolon that had twisted 360 degrees clockwise. This was corrected; an elongated loop and an ischemic segment was found, necessitating resection. Pathological diagnosis was transmural infarction of the transverse colon secondary to acute occlusion due to volvulus.

Volvulus of the transverse colon is extremely rare because of its shortness and its attachment to the hepatic and splenic flexure[3]. It appears in the second and third decades of life with a peak incidence in the seventh decade. Its mortality rate is higher than that for sigmoid and cecum volvulus. There is a clear variability in geographic distribution: Scandinavia and Eastern Europe account for about 30% of cases of transverse volvulus[4]. Risk increases with anatomical variation. Thus, an elongated and redundant transverse colon with narrow, anomalous or absent mesenteric attachment favors its appearance. Other factors, such as pregnancy, pelvic tumors or previous surgery have been associated with sigmoid volvulus[5].

Figure 1. Plain abdominal x-ray obtained in supine position showing volvulus with a markedly dilated transverse colon.

In the pediatric population, constipation is present in up to 50% of cases of volvulus of the transverse colon. It is also associated with mental retardation, Hirschsprung disease, Cornelia de Lange syndrome and myotonic dystrophy among others[6]. In our patient, the factor that probably favored the development of the condition was a history of chronic severe constipation which, over time, led to an elongated and redundant colon.

Two forms of clinical presentation are described. The acute or sudden form (as in our case) presents with fairly intense abdominal pain, vomiting, bloating, progressive decrease of bowel sounds, leukocytosis and generally compromised

Figure 2. Plain abdominal lateral supine x-ray showing extensive air-fluid content.

clinical condition. In the subacute or progressive form, the symptoms appear gradually and intermittently, with more pronounced abdominal distension[7].

The diagnosis of volvulus should be suspected from plain abdominal x-ray in the supine, standing and lateral position where the obstruction is visible. This can be confirmed with diagnostic barium enema. CT is not only more specific in diagnosing the cause, level and degree of obstruction, but also for detecting possible complications[8], which are useful data for therapeutic management.

In our patient CT showing signs of ischemia indicated the need for emergency surgery. In stable patients with sigmoid volvulus, endoscopic decompression resolves 90% of cases. There are few reports in the literature on its utility for transverse colon volvulus, and the treatment of choice is generally surgical reduction which should be performed immediately due to its higher rates of ischemia and subsequent morbidity and mortality.

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Macroscopic hematuria in a 40 year-old man

Sir,

Haematuria is one of the most common reasons for urological consultation in the emergency department[1]; early diagnosis and management is fundamental for its evolution[2-4]. The etiology may be urological, nephrological or systemic, with infections and urolithiasis being the most frequent causes; it originates with tumors in about 30% of haematuria in patients aged over 50 years[1].

A 40 year-old man with no medical history of interest attended the emergency room with colic-type right back pain and gross haematuria of some hours evolution, with clots at the end of urination. Physical examination only revealed right lumbar pain on percussion. Complementary tests (haemogram, biochemistry, coagulation and urinary tract radiography) were normal except for urinary sediment showing intense haematuria. Abdominal ultrasound showed a solid 10 cm tumour occupying the lower pole of the right kidney and subsequent CT scan showed an abdominal tumor compatible with hypernephroma (Figure 1). After radical right nephrectomy, pathological study confirmed the diagnosis of clear cell carcinoma that invaded the renal hilum.

Clear cell carcinoma is the most frequent histological subtype, accounting for 70% of hypernephromas or renal cell carcinoma[5]. The age of onset of hypernephroma is between 50 and 70 years of age. During recent decades there has been progressive increase in incidence, and this subtype now accounts for about 4% of all tumors[6]. Macroscopic haematuria is not usually a vital emergency and most patients can be managed on an outpatient basis. Although there are significant discrepancies in the general approach to haematuria, in cases of single or repeated episodes of macroscopic haematuria, extensive tests are required to rule out neoplasia[7-10].

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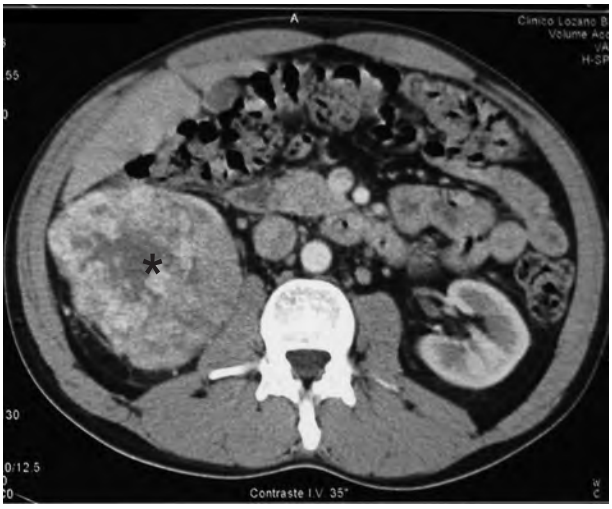

Figure 1. Abdominal CT scan: right kidney image compatible with hypernephroma (asterisk).

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Chronic ischemia with foot mummification

Sir,

Chronic ischemia of the lower limbs is a state of arterial failure, primarily due to atherosclerotic disease[1], where symptoms depend on the extent and location of obstruction to blood flow and compensation. From 1 to 3% of the male population over 40 years of age have claudication, and 6% in men older than 65 years[2,3]. PAD is 4 times more common in males and appears some 10 years earlier than in women[4].

Figure 1. Chronic ischemia foot.

A 78 year-old man, with senile dementia and bedridden, totally dependent, had attended our ED 5-6 months earlier with ischemia in the left foot. The patient had reported no pain, and opted for home care. The foot became completely mummified but the leg above the lesion appeared normal. The day of this admission, the patient had suffered a spontaneous rupture of the bone, muscle and most of the skin, at the boundary between the normal and the mummified parts. The foot only remained attached to the rest of the leg by the skin. The patient died the next day.

Chronic ischemia of the lower limbs was classified by Fontaine into 4 grades[5]: grade I, asymptomatic, Grade II, intermittent claudication; grade III, pain at rest, grade IV, trophic lesions and gangrene. Chronic lower limb ischemia is of great importance for associated morbidity and generates considerable demand for care.

The disease progresses slowly, with intervention rates for critical ischemia of 6 to 10% per year and a risk of amputation of 1% per year. After 5-10 years, over 70% of patients show no changes in symptoms and 20 - 30% worsen clinically and require some type of intervention. Calculated per million inhabitants, annual urgent care demand generated by peripheral ischemic disease (venous and arterial) generates over 2,000 ED consultations, more than 20,000 non-urgent consultations and accounts for 4 to 6% of total public hospital beds[5].

Cases like the above are uncommon, but do appear sporadically at the emergency department. Such prolonged evolution involves several coincident factors: the appearance of dry gangrene, which does not cause pain or infection and does not worsen the clinical symptoms, and a general state which rules out interventional measures. The family and the attending physician are generally responsible for primary palliative care.

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Acute epiploic appendagitis: ultrasound and CT findings

Sir,

Acute epiploic appendagitis is an unusual cause of abdominal pain produced by epiploic appendix twisting or appendicular vein thrombosis, with consequent ischemia and infarction. The absence of a radiological diagnosis can lead to hospitalization and unnecessary surgery, due to non-specific clinical symptoms and physical examination, without signs that differentiate it from other more common abdominal-pelvic inflammatory processes.

A 26 year-old male athlete consulted the ED for abdominal pain localized in the right iliac fossa whose intensity increased with movement of the right leg, and fever of 37.5 ºC. The analytical data and abdominal x-ray were normal. Abdominal ultrasound of the right flank showed an ovoid mass of 6.5 x 6.5 x 2.5 cm, which was solid and hyperechogenic, with a hypogenic peripheral halo (Figure 1a) without Doppler signal. CT scan of the abdominal area with intravenous iodinated contrast showed a well-defined mass of fat density adjacent to the serosal surface of the ascending colon (Figure 1b). The interior of the mass had irregular areas of high density surrounded by a hyper-dense ring. The patient was diagnosed with acute epiploic appendagitis, treated with analgesics, and discharged.

Epiploic appendagitis consists of torsion or spontaneous venous thrombosis of the epiploic appendix leading to vascular occlusion, ischemia and infarction[1].

The most common location is the sigma, followed by the descending colon, cecum and ascending colon[2]. Precipitating factors have been suggested to include mobile appendices, which tend to twist with postural change or after intense exercise. It is an uncommon cause of abdominal pain[3], of variable intensity and duration, sometimes with fever and abdominal symptoms, and ra-

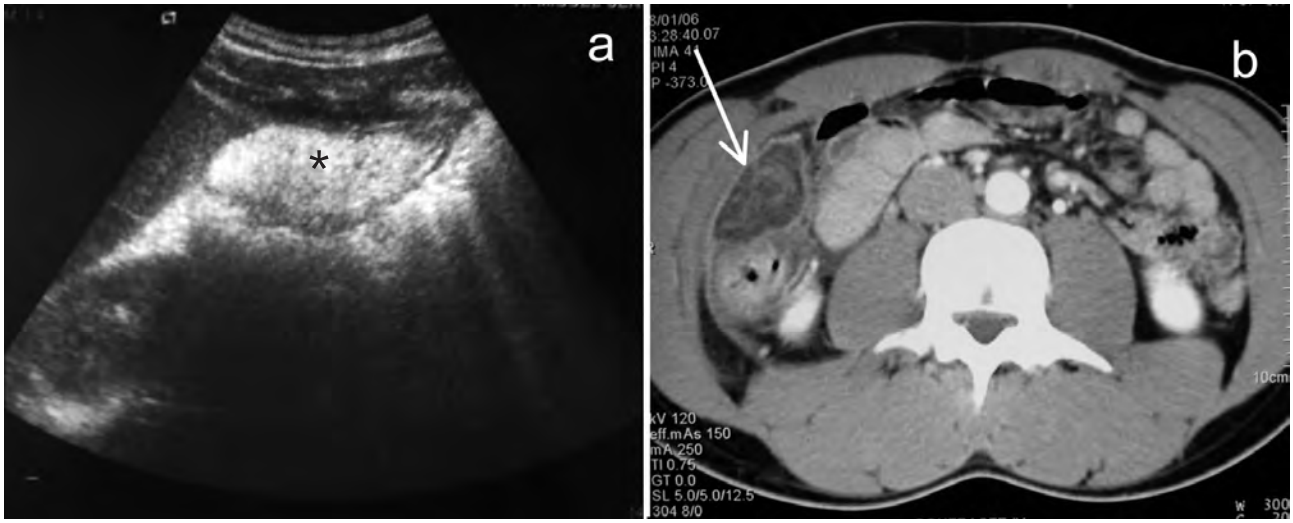

Figure 1. A) Ultrasound image showing a hyperechogenic mass of 6.5 x 6.5 x 2.5 cm in the right flank, with well-defined borders and surrounded by a thin hypoechogenic ring (*). B) Abdominal CT scan showing a mass of fat density (-80UH) located on the serosal surface of the ascending colon (white arrow), surrounded by a hyperdense ring. Within the mass there are irregular areas of high density.

rely nausea, vomiting, loss of appetite or leukocytosis. Since the appendix is attached to the wall of the peritoneum, pain is exacerbated by certain movements such as coughing and deep inspiration. The prevalence of this condition is unknown, with under-diagnosis due to the nonspecific symptoms.

Ultrasound shows a well defined ovoid mass near the wall of the colon; it is solid, hyperechogenic, non-compressible, surrounded by a thin hypoechogenic ring, with no Doppler signal due to ischemia[4]. CT scan should be performed to confirm the fatty nature of the lesion, where attenuation values are higher than is normal in fat5. All these masses are surrounded by a ring of higher density, representing the serosa with fibrinoleucocytic exudate. The literature contains cases in which the interior of this mass shows a hyperdense line or irregularity whose origin seems to be venous thrombosis or hemorrhagic necrosis[6].

Differential diagnosis should include other abdominal processes such as appendicitis or diverticulitis[7]. Appendicitis shows an inflamed appendix, collections, abscesses, extraluminal air bubbles or altered cecal pole. Diverticulitis presents diverticula, a segment of colon with thickened wall, extraluminal air bubbles, collections or abscesses. Appendicitis and diverticulitis may present altered pericolonic fat, but what differentiates them is that this alteration is more diffuse than in appendagitis.

Another differential diagnosis is that of omental infarction which presents a larger mass, poorly defined, heterogeneous, located in the lower right quadrant, adjacent to the rectus abdominis muscles, without the hyperdense ring so typical of appendagitis.

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Traumatic bilateral testicular dislocation due to motorcycle accident

Sir,

Traumatic testicular dislocation (luxation) is a rare entity; the literature contains only a few hundred cases, with bilateral cases being still scarcer[1-9]. We present one of the very few cases in Spain.

A 14 year-old boy was transferred to our ED after a motorcycle accident. On arrival he was conscious, oriented, with a Glasgow score of 15, hemodynamically stable, but showed retrograde amnesia of the episode without evidence of traumatic brain injury (TBI). He presented pelvic and lower limb trauma with suprapubic pain, two tumors in the internal inguinal ring of gum-like consistency and Brockman's sign (empty scrotal sac), all compatible with bilateral testicular dislocation at the inguinal level (Figure 1) and multiple hand injuries. Blood test was normal and x-rays showed multiple fractures. Ultrasound confirmed bilateral testicular dislocation and this was corrected.

Testicular dislocation is characterized by extrascrotal transposition of one or both testes after scrotal trauma. The most common cause of trauma involves a motorcycle, with direct impact against the fuel tank or the handlebars. Some authors estimate a traumatic force of around 50 kg resulting in testicular dislocation or luxation (a larger force would produce rupture of the albuginea)[1]. Indirect inguinal hernia or a hyperactive cremasteric reflection may favor dislocation; 90% are unilateral[2]. Diagnosis is clinical on detecting the empty scrotum, in the absence of previous cryptorchidism, although the diagnosis may be delayed in patients with multiple injuries or perineal or scrotal hematomas[3].

Multislice computed tomography and ultrasound are useful both for diagnosis and for the evaluation

Figure 1. Bilateral testicular luxation. The arrows indicate the position of the testes.

of possible injuries to the testes[4,10-12]. The treatment of choice is early surgery to avoid the appearance of flanges which substantially impede reduction as well as to prevent testicular atrophy[6,13].

Manual reduction is possible, although often ineffective and increases the risk of further injury to the testes. It is recommended within 4 days, when the edema has subsided[3,13]. In our case this was successfully performed by the urologist in both testes, with good subsequent evolution.

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Responsible co-payment

Sir,

The Spanish National Health System (NHS) is characterized as fair, free and universal. It is tax-funded and the patient does not pay, except for certain pharmaceutical items. As it is public, the NHS by nature presents financial deficit; it must not and does not generate accounting profit. However, the number of emergencies in Spain increases year after year, and the cost of hospital emergencies far exceeds that of primary care for the deployment of personnel, complementary tests, expensive treatments and medical transport, among other items.

Currently, emergency departments (ED) suffer overcrowding. It is obvious that the user will always prefer to go to the ED based on opportunity cost. This term defines the gain acquired by taking one decision, and no another, with the same effort.

It is therefore legitimate to take this opportunity being offered: ED users have access to analytical tests, x-rays, prescriptions or specialist consultations within hours. We ought not to judge, recriminate or even consider this attitude as abusive, since they are only taking what we offer.

Various schemes have been implemented in an effort to control this demand, including "Co-payment", in which the patient participates by paying a portion of the cost of this process. If the percentage assigned is high and the process is expensive, it may be difficult for the patient to meet the payment, and thus may refrain from using the NHS, which would prejudice the neediest people. Conversely, if the percentage is low and the process is cheap, copayment would be so small that the billing costs become greater than the billed amount. The system of co-payment should one in which: 1) the patient pays only in cases of irresponsible use of the NHS, otherwise it remains free, 2) the billing services that currently exist in the Administration should be used, so that transaction costs are minimized, and 3) the fairness of the system is maintained, i.e. those with more, pay more (but at the same time, those who use the service more and without due cause, pay more).

We thus arrive at the figure of a "responsible co-payer". The user pays for a part of the healthcare process based on the degree of irresponsible use of the NHS.

This figure exists in private healthcare schemes where, for example, a civil servant cannot solicit a CT scan without a prescription signed by a physician on the scheme's panel. In doing so, he/she would have to pay for the cost involved. Neither can the same patient see a physician outside the panel without paying. In any case, even when consulting a specialist who is part of the scheme or company, he/she must pay a nominal sum.

We propose a system of responsible access to hospital EDs which is legal, free, equitable, universal, with minimal transaction costs and politically acceptable by the Administration, whatever group is in power. For this, anyone with a health problem that he/she considers cannot be postponed may proceed according to the following options, which would not involve co-payment. They can first go to their health center. In morning periods, the primary care physician is required to see not only their scheduled patients but also any urgent cases requiring attention. If the emergency occurs during the afternoon or evening, the user would be attended by the continuing care team of the center, or that to which he/she is entitled by proximity. The user may contact the emergency call number 061/112, whose physician coordinator would: 1) refer non-urgent cases for scheduled consultation with a primary care physician (and even arrange the appointment), 2) refer urgent cases that could be delayed to the emergency services of the corresponding health center, or 3) in urgent cases requiring immediate attention, contact conventional or ICU-equipped ambulances for transfer to a hospital ED, where medical transport personnel would hand in a specific numbered transfer document. The user can attend a scheduled appointment and the attending physician may decide on transfer to the ED. Again, in this case, a specific numbered transfer document would be provided. Finally, the user may suffer an emergency health problem away from home, such as an accident, in which case the resource is the emergency call number 061/112.

However, there are other situations where the user consciously decides to bypass these options and go directly to ED, for whatever reason. In this case, ED admission staff would inform the user that this decision will generate an invoice for an amount exactly equal to that charged by private providers, except that it is to be paid by the patient and not the private insurance company. This bill would be delivered to the user's home without generating transaction costs, since the ED does not act as a cashier, i.e. does not handle cheques or cash. At that moment, the user can freely choose to proceed or not, knowing that he/she is entitled to free NHS attention for an urgent health problem through the primary healthcare system.

Together with all this, one would have to transmit to the user's primary healthcare system its responsibility. This could be a monetary amount assigned to each district primary care centre for their users. Thus, every time a user attends an ED, the admission units would process the referral document and charge each primary care district involved. This could be done through economic-administrative departments every year, the amounts depending on the number of referrals, according to a contract agreement.

I must admit that the system I propose is not without its weaknesses and requires further study. An example: the referral document held by the economic-administrative departments must be devoid of patient clinical data.

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