

LETTERS TO THE EDITOR

Severe head injury: Mount Fuji sign

Sir,

Pneumocephalus is the presence of air or gas in the cranial cavity. It is rare, but even rarer is the radiological Mount Fuji sign, which depicts massive accumulation of air in the subdural space^{1,2}, with increased anterior frontal inter-hemispheric space and great pressure on both frontal lobes, a potentially lethal condition³. It should be suspected in traumatic brain injury (TBI) with severe facial involvement⁴.

This case involved a 77 year-old man with a history of dilated cardiomyopathy, replacement aortic valve, atrial fibrillation and hypertension treated with acenocoumarol. In a road accident he suffered severe craniofacial contusion without loss of consciousness. In the emergency department he was hemodynamically stable and had a Glasgow Coma Scale score of 15 points. Physical examination showed left superciliary cuts and contusion injury, bilateral frontotemporal abrasion, contusion of both zygomatic bones with bone crepitus and nasal root contusion with epistaxis. On stoppage, the patient showed nasal liquorrhea and subcutaneous facial emphysema. Laboratory data were unremarkable, except for an INR of 4.72. Computed tomography (CT) scan showed multiple cranial and facial fractures with gas accumulation in the subdural space and increased frontal inter-hemispheric space known as the Mt. Fuji sign. The patient later presented impaired level of consciousness. He received tracheal intubation and mechanical ventilation, as well as analgesics, antibiotics, anticonvulsants; he was also maintained in a vertical position. Final outcome was satisfactory. Control CT scans showed that the bifrontal lesions were in the process of resolution.

Pneumocephalus is highly unusual, presenting in only 0.3% of all CT scans⁵. Causes include head trauma⁶, post-surgical complication³, and infectious processes such as meningitis⁷. It should be considered after major facial trauma or head trauma with cerebrospinal fluid extravasation, neurosurgical interventions and signs of intracranial hypertension, seizures, severe headache, altered level of consciousness, behavioral al-

terations or motor dysfunction. CT scan detects accumulation of gas over 55 ml⁸ versus 2 ml of plain radiography. There are two forms of pneumocephalus: normotensive and tension pneumocephalus. The former is benign in most cases, with the gas being absorbed in a few weeks in 85% of cases⁹. In these patients without neurological impairment, conservative treatment is indicated with Fowler position at 30°, avoidance of Valsalva maneuvers and administration of analgesics. In contrast, tension pneumocephalus can become a neurosurgical emergency. Gas can accumulate in the supratentorial subdural space, causing compression and separating the frontal lobes, widening the inter-hemispheric space, which radiologically resembles the shape of the Japanese volcano Mount Fuji¹⁰. This sign was first described by Ishiwata in 1988². If there is serious neurological involvement, surgical decompression is necessary by drilling a burr hole⁴. In our patient a non-aggressive approach was adopted, because he showed no significant alteration of consciousness.

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Peritonitis secondary to diffuse xanthogranulomatous pyelonephritis

Sir,

Xanthogranulomatous pyelonephritis (XGP) is a rare form of chronic pyelonephritis which is difficult to diagnose preoperatively. Clinical manifestations are varied, but it mostly affects middle-aged women with recurrent urinary tract infection (by *Proteus* spp. and *E. coli*, mainly), stone disease and endocrinopathy.

A 73 year-old woman with a history of cholecystectomy, hypothyroidism, grade IV hydronephrosis of the left kidney and right kidney parapielic cysts visited the emergency department for acute abdomen during several days. Laboratory tests showed moderate hyponatremia with plasma hypo-osmolality and elevated C-reactive protein; blood count showed mild normochromic normocytic anemia and thrombocytosis. Urinary sediment showed microhematuria. Computed tomography (CT) scan of the left kidney showed massive enlargement and cortical thinning, slight lithiasis, intraperitoneal free fluid and slightly distended small bowel loops. The patient's condition deteriorated rapidly and urgent surgery was required. During the intervention, generalized peritonitis was observed, with aspiration of 1.5 - 2 liters of pus, followed by abundant wash out. A sample was sent for microbiological analysis. In a second intervention, en bloc resection of the spleen and left kidney was performed, in the absence of a defined kidney structure, but an indurated mass. A specimen from the nephrectomy showed pelvicalyceal abscess extending to the peri-renal and retroperitoneal fat, ureteral hydronephro-

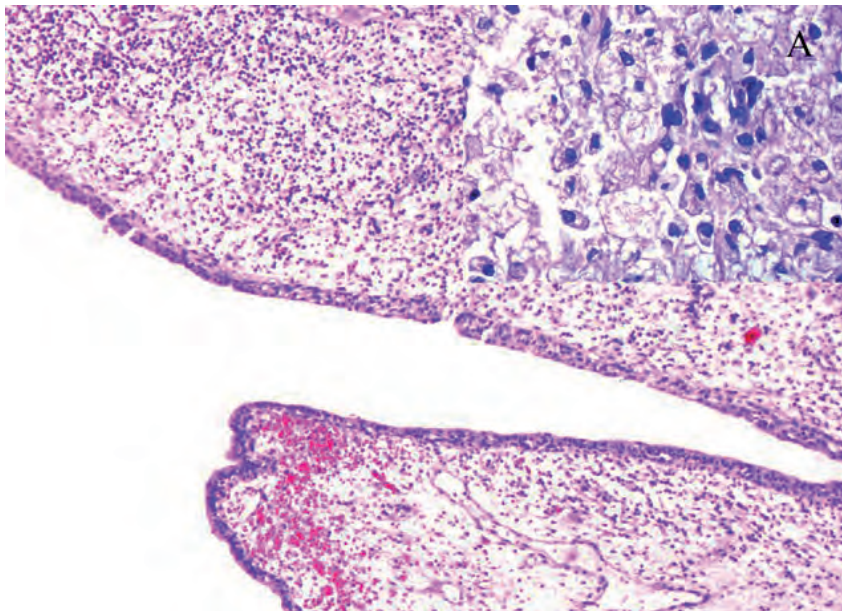


Figure 1. Renal pelvis distorted by an inflammatory infiltrate consisting predominantly of sheet macrophages and clear foamy cytoplasm (A) mixed with lymphocytes and some plasma cells.

sis and cortical atrophy. Microscopic signs of XGP were found (Figure 1). Intraoperative pus culture grew multi-sensitive *Escherichia coli*.

XGP is characterized by destruction of the renal parenchyma and replacement by lipid-laden macrophages, called foam cells¹. The disease has traditionally been classified into three stages, depending on the duration of the process: stage I (localized disease in the kidney parenchyma), stage II (with perinephric fat involvement) and stage III (parenchymal, peri- and paranephric tissue involvement). Clinical symptoms vary widely and are nonspecific (usually a constitutional picture and fever) characterized by pain in the lumbar fossa, palpable abdominal mass, pallor and general malaise². Laboratory studies can show evidence of anemia, leukocytosis and hepatic dysfunction³, and urinalysis can show pyuria, proteinuria and hematuria. Diagnosis is mainly based on anatomopathological findings, because, although radiological signs are suggestive on CT scan, there is no specific radiological manifestation of XGP. The major complications are the onset of septic shock or, in the diffuse variety, the development of cavities or fistulas to other organs⁴⁻⁶. Rarely, XGP can manifest initially as acute peritonitis⁷⁻⁹, as in our case. Treatment is usually total nephrectomy but in selected cases with focal

forms, partial nephrectomy may be an option¹⁰ or even medical treatment alone, with prolonged antibiotic therapy¹¹.

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Hydatid pulmonary embolism presenting with hemoptysis

Sir,

Hemoptysis is a common cause of emergency department visits. In terms of severity, it can vary from blood-streaked sputum to life-threatening expulsion of blood without bronchial secretion¹. In general, it is a symptom of potentially severe disease²; 60% of hemoptysis is of infectious origin (bronchitis, bronchiectasis, pneumonia, abscesses, tuberculosis), 20% is associated with neoplasms (adenomas or carcinomas, less frequent in metastases) and 5% is related to cardiovascular disease (mitral valve stenosis and pulmonary infarction) and the remaining 15% is related with chest trauma, pulmonary vasculitis, anticoagulant treatment and idiopathic causes³. We present a clinical case of infectious hemoptysis with unusual debut.

The patient was an 81 year-old male farmer with a history of codeine allergy, hypertension, type II diabetes mellitus (DM), ex-smoker, lung disease (COPD), glaucoma, perianal fistula and three interventions for liver hydatidosis 40 years before. He arrived at the ED in a medicalized ambulance after an episode of vomiting at home, witnessed by his primary care physician, after which hemoptysis was observed on 6-7 occasions. He had severe generalized pruritus and erythematous maculopapular lesions in the cervical and scrotal region suggestive of urticaria. In the last 3-4 months he presented moderate effort dyspnea without chest pain. Hemodynamic status was stable with good general condition and he was eupneic at rest, although the auscultation showed pul-

monary hypoventilation at the base of the right lung. Complementary tests performed in the ED only showed 12,100 cells / μ l (61.2% neutrophils, 6.4% eosinophils). Chest x-ray showed rounded opacities in the right lung. Chest-abdominal computed tomography (CT) scan showed images of bilateral pulmonary hydatidosis: the largest cyst was located in the right inferior lobe, medially situated between the underside of the pulmonary artery and the roof of the left atrium. We also observed findings suggestive of hydatid pulmonary embolism affecting the right pulmonary artery extending to arteries of the upper and lower right lobe and the segmental arteries of the lower left lobe. The patient had low-grade fever of 37.5°C. Treatment was started with levofloxacin and albendazole and his hemoptysis subsided. We considered but rejected the possibility of surgical intervention due to the advanced age of the patient, his underlying lung disease, and the high risk of surgery-related morbidity. The patient responded favorably and was discharged after 10 days of hospitalization. At 10 months, he remains alive but shows signs of pulmonary hypertension.

Hydatid disease is a parasitic infection caused by the larvae of the tapeworm *Echinococcus granulosus*. The disease is distributed worldwide and is endemic in Spain, where incidence ranges from 5 to 9 cases per 100,000 inhabitants. It develops mainly in the liver (60%) and lungs (25%). Cardiac location is very rare (1-2%)⁴. A hydatid cyst in the pulmonary arteries is an exceptional location, generally the result of embolism from primary locations of the heart.

Intra-cardiac cyst rupture on the right side tends to account for the appearance of cysts in the pulmonary artery⁵. Another possibility is that parasite embryos pass from the liver into the inferior vena cava and from there through the right heart chambers to the pulmonary arteries⁶. Embryos that are not destroyed in these small cysts can grow 2-3 cm per year. In the case of intra-arterial location, they can grow slowly in the lumen and, finally, occlude it. In pulmonary arteries, this process may persist long enough for adequate lung perfusion to be established through the bronchial arteries and may initially be asymptomatic⁷. Symptoms may also manifest when cysts compress a fundamental structure or interfere with blood flow and cause anaphylactic reactions. In our case, cardiac cysts were not observed, but there was a history of several hepatic hydatid disease interventions 40 years before, so the hypothesis is that the parasite embryos may have been

present in the pulmonary artery during all that time. Hydatid embolism is classified clinically into 3 groups according to patient evolution: 1) fatal acute cases, 2) cases of subacute pulmonary hypertension resulting in death one year after diagnosis, and 3) cases of chronic lung hypertension⁸.

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Emergency department sputum culture and Gram Staining in community-acquired pneumonia: Are they necessary?

Sir,

C Ferré et al.¹ analyzed the usefulness of sputum Gram stain (SGS)

for the management of community-acquired pneumonia (CAP) in adults treated in the emergency department (ED). They concluded that this test has limited value. In a 1-year prospective study conducted in our ED, with 550 patients diagnosed with CAP, an etiological diagnosis was obtained in 209 cases (38%). Of the microbiological tests performed, sputum culture and pneumococcal antigen detection tests were the most useful (27.1% and 20.6% positive results, respectively), as shown in Table 1². We agree with the authors that SGS is not very useful to guide initial antibiotic therapy and that the percentage of sputum samples meeting the requirements for analysis is low³, but we believe that its speed, simplicity and utility mean that SGS and culture should be recommended and performed before initiating antibiotic treatment in the ED in all hospitalized CAP. The reason is that we can a posteriori change those antibiotic regimens according to results and also arrive at an etiological diagnosis.

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Table 1. Microbiological procedures and utility of the different tests performed in 550 patients with CAP treated in the ED

	Tests requested N (%)	Positive results N (%)
Sputum culture	313 (56.9)	85 (27.1)
Pneumococcal antigen in urine	436 (79.3)	90 (20.6)
Legionella antigen in urine	434 (78.9)	13 (3)
Blood cultures	350 (63.6)	25 (7.1)

CAP: community acquired pneumonia. ED: Emergency department.

Splenic artery aneurysm

Sir,

Splenic artery aneurysm is uncommon, but is nonetheless an important clinical entity since rupture constitutes a life-threatening emergency. It is the third most common intra-abdominal and the most frequent visceral aneurysm. Prevalence is reported as 0.01-0.2%¹⁻⁵, although we believe it may be underestimated because most are asymptomatic. Pathogenesis is unclear; but atherosclerosis and congenital arterial wall defects have been postulated as main causes. Other factors involved are pregnancy, portal hypertension, essential arterial hypertension, septic emboli originating from endocarditis and collagenopathy. We present a case of splenic artery aneurysm initially confused with left renal colic.

This case was a woman who visited the ED for sudden onset lower back and left abdominal pain, without fever or urinary symptoms. Physical examination revealed pallor and abdominal pain. After anemia and metabolic acidosis were identified with complementary tests, urgent abdominal-pelvic CT angiography showed ruptured splenic artery aneurysm and peritoneal cavity hemorrhage (Figure 1). Splenectomy with splenic artery ligation was performed and the patient evolved satisfactorily.

Rupture of a splenic artery aneurysm should be considered in the presence of left flank abdominal pain associated with anemia, metabolic acidosis and / or hypovolemic shock. Mortality in case of rupture ranges from 10% to 36%⁶ and increases significantly in the presence of portal hypertension (60%) and pregnancy (70-75%), with fetal mortality of 85-95%⁷. The phenomenon of "double rupture" (20-30% of cases) presents with slight initial bleeding and a second episode of bleeding into the abdominal cavity within 48 hours, providing valuable time for diagnosis and treatment. If a rupture is suspected, diagnostic confirmation with abdominal contrast-enhanced helical CT scan should be performed without delay. Treatment is surgical. The priority in emergency surgery should be to stop the bleeding. Splenectomy with ligation of the splenic artery is often required. Elective surgery is reserved for integral aneurysm, where resection of the aneurysm is preferred⁸ allowing conservation of the spleen and its immune function⁹.

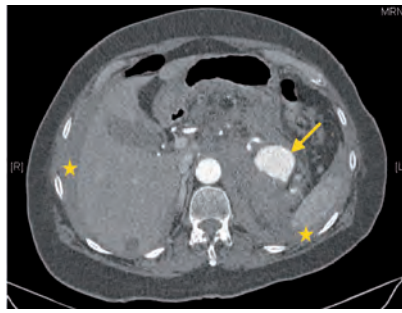


Figure 1. CT angiography showing aneurysm of the splenic artery (42 x 39mm, arrow) with hemoperitoneum (stars).

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Treatment of patients with multiple injuries caused by contact with bulls

Sir,

Taurine-inflicted trauma can be so violent it is always considered as

part of the group of multiple trauma caused by road accidents, gunshot wounds, cliff falls etc. The causative agents are bulls, steers, cows or heifers, weighing between 300 and 500 kg, sometimes impacting at speeds of 35-40 km/h. Thus, there are two mechanisms that may produce injury: power and kinetic energy transmitted from the hindquarters to the forequarters, neck and horns¹. The incidence is low compared to other causes of trauma, but with its own characteristics and severity. It is more frequent in summer (coinciding with bull-fights, bill running and other spectacles) in both bullrings and on the streets or in the country. Injuries are varied: goring wounds, contusion (soft tissue, internal organs), head injuries, burns and fractures or dislocations. Treatment should follow a strict order, starting with mobilization and primary evaluation, monitoring of the airway and breathing (whether spontaneous or not, checking for obstacles, etc.). Then hemostasis must be evaluated using manual pressure or tourniquets, and then venous pathways for canalization to prevent hypovolemic shock. After all this, it is time to perform a general secondary examination, looking for possible head or spine injuries, pulses etc. and then proceed to transfer the patient to the right hospital.

Our 6-year series comprised 49 patients: 46 men and 3 women, mean age 38 years (range 15-74). The location of the lesions is given in Table 1. The wounds were mainly contusion, with irregular borders, devitalized, of differing trajectories, and dirty, and ranged from mild to severe. The patient typically receives local or general anesthesia, washing, debris removal (dirt, feces, grass, clothing), antiseptics, anti-tetanus and broad-spectrum antibiotics. Use of the Friedrich technique is standard: hemostasis, removal of devitalized tissue, suture and drainage^{2,3}. Contusions are generally multiple and the patient may be treated on an outpatient basis with anti-inflammatory agents and analgesics or hospital admission and observation⁴. Patients with head injuries are referred for assessment by the department of neurosurgery, after initial resuscitation. Burns and abrasions from falls vary in severity, but all are generally treated with debris removal, washing, antiseptic agent and dressing. Anti-tetanus vaccination and early antibiotic therapy are standard recommendations. Fractures are usually multiple or present with dislocations. The techniques used vary widely, including: reduction, immobilization, pins, plates, Jewett brace, and so on.

Table 1. Location of injuries in a series of 49 patients

	n (%)
Wounds	
Thigh	17 (35)
Head-face	9 (18)
Groin-genitals	5 (10)
Leg	4 (8)
Abdomen	3 (6)
Arm	3 (6)
Back	2 (4)
Hands	2 (4)
Contusions	
Trunk	4 (8)
Traumatic head injury	4 (8)
Thigh	2 (4)
Arm	1 (2)
Burns	
Trunk	2 (4)
Leg	1 (2)
Arm	1 (2)
Fractures	
Arm	4 (8)
Hands	3 (6)
Ribs	2 (4)
Pelvis	1 (2)
Ribs	1 (2)
Dislocations	
Elbow	2 (4)
Phalanges	2 (4)
Shoulder	1 (2)

In our series, there were two cases of moderate-severe head injuries and two hemopneumothorax. In abdominal trauma, organs affected included the liver in one case and bowel in another three, and subsequent complications included 9 wound infections, 3 re-bleeding and one death.

Follow up of these patients is performed by the primary care physician who monitors minor wounds and bruises. But if the injuries are severe or involve fractured ribs, they are monitored by general surgery staff. Head injuries are followed by the neurosurgery department and fractures or dislocations by traumatologists.

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Aortic rupture and hematoma of the atrioventricular fissure occurring: late complications after replacement of an aortic valve with a mechanical prosthesis

Sir,

We report the case of a 67 year-old man bearing a n°21 St Jude mechanical aortic valve during 14 years. Echocardiography and the stress test performed 5 months before were normal. He was treated at our ED for sharp central chest pain radiating to the shoulders. Arterial pressure was 99/76 mmHg, arterial oxygen saturation 98% and heart rate 49 bpm. The ECG showed sinus bradycardia and there were no repolarization abnormalities. Chest x-ray showed cardiomegaly and widening of the superior mediastinum. Given the patient's surgical history, acute aortic syndrome (AAS) was suspected and transthoracic echocardiography (TTE, Figure 1) was performed. Despite its low sensitivity^{1,2} and limited availability in certain centers, TTE is a valuable tool in the early evaluation of chest pain with unstable hemodynamic status and, in particular, of AAS¹. The TTE showed aortic prosthesis functioning normally, non-dilated aortic root, and preserved left ventricular contractility. Through the subcostal window, mild pericardial effusion was observed as well as a right atrioventricular groove (AVG) hematoma of 40 mm, compressing the tricuspid annulus and severely restricting filling. For better definition and to assess the entire aortic root, computed tomography (CT) scan was performed (Figure 1). The combination of both techniques has proven to be the best for the correct evaluation of AAS¹. It confirmed the hematoma and located a point of rupture of the right medioposterior aorta, 2 cm above the suture of the prosthesis. With a diagnosis of ascending aorta wall rupture complicated by AVG hematoma and a situation of cardiac tamponade, the patient was transferred to the operating room. After sternotomy, he suffered sudden cardiac arrest unsuccessfully managed with internal massage. The surgeon located the rupture line (without ulcerous base) on the right lateroposterior wall of the aorta, at 1.5-2 cm between the aorta and the superior vena cava (SVC); and the hematoma limited by adhesions. No postmortem study was performed.

Pericardial hematoma can be a clinical complication of cardiac surgery

depending on the location and time of onset³. In our case, the hematoma resulted in acute hemodynamic compromise, which was not present in the previous TTEs and in the context of AAS (extravasated blood to the pericardium via the recess located between the lateral wall of the ascending aorta and the SVC). The characteristic of being located may be common in chronic hematoma where inflammation and adhesions play an essential role⁴. Cases of spontaneous dissection after aortic valve surgery have been reported⁵. There are no documented risk factors for this event⁶. Aortic rupture and late atrioventricular groove hematoma, 14 years after aortic valve replacement surgery, are highly unusual in combination and timing.

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Dyspnea due to hypopharyngeal airway dystonia caused by metoclopramide: an emergency to watch for

Sir,

Laryngeal dystonia is an under-diagnosed emergency which may be life-threatening.

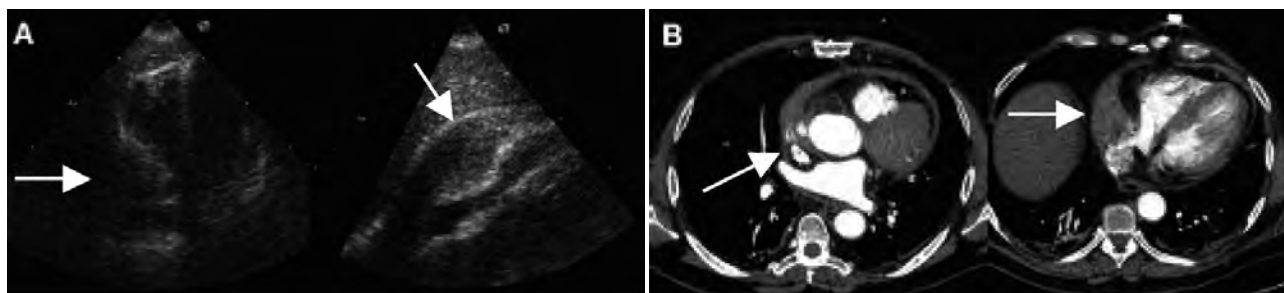


Figure 1. A) Transthoracic echocardiogram. Left: apical window 4-chamber view showing compression of the right cavities. Right: Subcostal window showing half-moon image of heterogeneous echogenicity in the right atrioventricular groove hematoma compressing the right cavities. B) Contrast CT scan of the chest. Left: extravasation of contrast medium at the right posterior level of the ascending aorta. Right: atrioventricular groove hematoma compressing the right cavities.

We report the case of a 25 year-old patient with no relevant medical history who consulted for acute dyspnea without other accompanying signs. On arrival at the emergency department he was hemodynamically stable, with oxygen saturation of 100% breathing ambient air; respiratory auscultation showed breath sounds and noise (snoring) at the throat. He reported using metoclopramide in the previous few hours for a gastrointestinal picture. Initially the impression was of an anaphylactic reaction with airway involvement and he received 0.5 mg adrenaline IM, 600 mg of hydrocortisone and 5 mg of dexchlorpheniramine IV. There was no clinical improvement and the dyspnea persisted. Another dose of 0.5 mg adrenaline IM was administered and nasofibroscopy was performed, with normal findings. The patient's evolution now suggested acute supraglottic dystonia involving the hypopharyngeal muscles, and he was administered biperiden 2.5 mg IM. This immediately resulted in complete resolution of the picture, confirming the diagnosis of metoclopramide-induced acute dystonia.

We believe this case is interesting because it involved an isolated episode of dyspnea due to acute dystonia affecting the supraglottic musculature without affecting other

groups of muscles^{1,2}, which made the diagnosis more difficult³. This entity should be considered in patients with a history of consumption of drugs that can give rise to dystonia (dopamine, neuroleptics, antiepileptics, antidepressants etc.) and who consult for acute dyspnea, with no other associated symptoms. The case also highlights the importance of taking a good medical history⁴. Most cases reported in the literature refer to young men, including boys^{5,6}, and bear no relation with the type of drug used or the amount used⁷. Incidence also seems higher in patients with HIV infection⁸.

In this picture, the treatment of choice is biperiden, which should have been administered intravenously, not intramuscularly, given the degree of compromise. Thus, its administration not only produces immediate clinical improvement, which helps to confirm the diagnosis, but also avoids the need for unnecessary procedures such as intubation or emergency cricothyroidotomy.

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