

LETTERS TO THE EDITOR

Correction: number of manuscripts submitted annually to EMERGENCIAS

Usually, the editorial article in the first issue of EMERGENCIAS at the beginning of each year contains information on diverse aspects of our editorial activity and lines of action for the immediate future. One of these aspects concerns the annual number of manuscripts submitted for possible publication: this is an indicator of author interest in the journal and, indirectly, of its standing in their esteem.

Recently, we encountered an error in the data published for the years 2009, 2010 and 2011¹⁻³. This was the result of a change from manual handling of articles in the secretariat of EMERGENCIAS to fully computerized handling using an electronic management program installed on our website. This took place in January 2009 and its initial use was accompanied by erroneous numbering and counting, generating erroneous data. The total number of manuscripts received in 2009 was 223 (not 235), in 2010 it was 280 (not 278) and in 2011 it was 369 (not 507). The real evolution of this number during the years 2003-2011 inclusive, now with updated data, is presented in Figure 1. It is remarkable to see that the proportion of original work remains fairly constant and, therefore, has grown in parallel with the growth in total number of manuscripts submitted. In conclusion, interest in publishing work in the journal EMERGENCIAS continues to increase, probably due to its inclusion in the Web of Knowledge⁴ and the fact that the journal has managed to hold its place, during two consecutive years, in the first quartile of its specialty^{5,6}.

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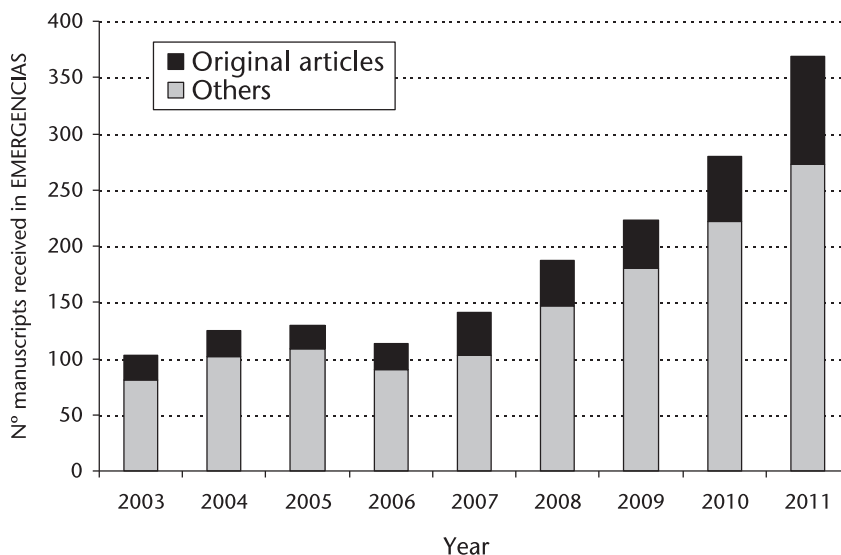


Figure 1. Yearly evolution of the number of documents submitted to EMERGENCIAS for consideration to be published.

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Emergency paramedics technicians

Sir,

EMERGENCIAS has recently published a series of articles on the history¹, normative structure^{2,3} and teaching organization of emergency healthcare technicians (EHT)^{4,5}. These technicians are not just another group of health professionals, but one responsible for initial attendance and health transport. An example: in the Canaries, basic life support ambulances annually handle 80.3% of all urgent health transport (189.478 cases attended in 2010), versus 8.1% for nursing ambulances (with a nurse) and 6.4% for medicalized ambulances (with a physician) in which TES are also members of the staff. Similar data apply in the rest of

Spanish Emergency Medical Services (EMS). In addition, EHT handle non-urgent health transport and work in transport management and resources in EMS co-ordination centers.

Apart from the national course for assessors/examiners organized by the Ministry of Work in 2010, such courses have been run by autonomous regions, some even before that of the Ministry⁶. They have developed the processes to be completed to obtain the title of EHT, accreditation of competencies or professional certificate. As indicated in the article by Faguas Fernández et al.⁴, the Spanish Society of Emergency Medicine (SEMES) must promote and stimulate their members to complete these courses for examiners, given our technical knowledge and professional motivation. In addition, courses must be organized at the regional level when necessary, in a co-ordinated fashion, to cover any training deficits among EHT. Another aspect is the need to incorporate EHT who obtain their qualifications through professional institutes (FP). Although not exclusively so, EHT refresher courses⁷, professional development⁸ and research activity⁹ all involve SEMES and its work-

ing groups. The chance to help consolidate this new health profession should not be passed up by SEMES.

Finally, as complementary information to that provided by López Mesa⁵, we would add that Royal Decree 836/2012 was published on June 8, 2012: it establishes the technical, material and staffing characteristics of EMS road transport vehicles¹⁰. It also sets out the types of ambulances: patient non-attending and attending ambulances (the latter equipped to provide health care en route). Non-attending ambulances are classified as Class A1 or conventional, for transfer of patients on stretcher beds, and Class A2 for groups of non-urgent, non-infectious patients. Attending ambulances are classified as Class B - providing basic life support and initial emergency attention, and Class C - providing advanced life support. Regarding staffing requirements, all ambulances require drivers who are, at least, certified EHT (Royal Decree 710/2011). Class A ambulances require at least one such driver, or two when needed. Finally, Class A ambulances also require at least one such certified EHT driver, a qualified nurse and a licensed physician or MD when the situation requires it.

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Paracetamol-induced acute nephritis unassociated with other toxic symptoms

Sir,

Nephrotoxicity without hepatotoxicity due to paracetamol intake is highly unusual¹⁻³.

We report the case of a 17 year-old woman, with unremarkable medical history, who ingested 9 g of paracetamol (225 mg / Kg) in a suicide attempt. She visited another center 36 hours post-ingestion for general malaise, nausea without vomiting and hyperoxia. In view of the potentially toxic dose she was treated with N-acetyl-cysteine (NAC) intravenously and then transferred to our center. On arrival, she was asymptomatic, hemodynamically stable and showed no signs of systemic toxicity. There was no co-ingestion of other drugs. Laboratory tests showed normal liver function, creatinine 0.8 mg / dl and paracetamol levels < 2 mcg / ml. Psychiatric assessment revealed that the suicide attempt was an impulsive act in the context of socio-sentimental problems. Given the normal clinical and analytical results and time since ingestion, NAC was discontinued after the second dose and the patient was given a follow up appointment. At 24 hours she suffered pain in the right hypochondrium and thoracolumbar region. Physical examination confirmed the pain and positive bilateral fist percussion. New lab tests showed creatinine 2.46 mg / dl, urea 66 mg / dl, AST 21 IU / l, ALT 13 IU / L, total bilirubin 0.6 mg / dl and coagulation and other parameters were normal. Renal ultrasound indicated diffuse nephropathy, and urine study showed: osmolality 202 mOsm / kg and sodium 25 mmol / L; chlorine < 20 mmol / L and protein / creatinine index 3.5. Intravenous fluid therapy was prescribed as well as oral corticosteroids, and the patient was then admitted to hospital. Renal function worsened initially until a creatinine peak at day 4 post-ingestion (4.38 mg / dl) (Figure 1). Tubular function findings were consistent with acute tubular necrosis (fractional excretion of sodium 0.97 ml/100 mlFG, fractional excretion of

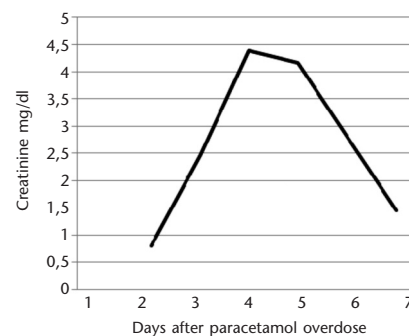


Figure 1. Evolution of creatinine values.

potassium 21.79 ml/100 mlFG, glycosuria 108 mg/24 h and proteinuria in the non-nephrotic range). At all times diuresis was adequate and blood pressure was normal. The patient was discharged 4 days later.

Acute renal failure occurs in less than 2% of paracetamol poisonings, but can reach 10% in severe cases⁴. Usually the course is benign and only 1% of patients with acute renal damage require dialysis^{5,6}. It is usually associated with severe liver failure⁴, and the kidney involvement is secondary to hemodynamic instability or occurs as part of a hepatorenal syndrome. At other times, as in the case described, isolated nephrotoxicity may appear, with normal liver enzyme and coagulation parameters. There seems to be a greater tendency to nephrotoxicity in adolescents and young adults. The mechanism underlying isolated renal injury is unclear: immunological mechanisms have been proposed⁷ as well as paracetamol metabolism by certain kidney enzymes such as cytochrome P450 and N-deacetylase which lead to glutathione depletion and the accumulation of toxic metabolites which eventually cause tissue damage^{7,8}. Unlike with liver damage, N-acetylcysteine (NAC) has not proved its utility in preventing nephrotoxicity and may even worsen it³. Treatment is largely supportive⁹.

In our case, initial treatment with corticosteroids was decided because of the possibility of acute interstitial nephritis and early corticoid therapy can improve prognosis. The rapid normalization of creatinine and other parameters meant that renal biopsy was not required. Creatinine elevation usually begins 48 hours post-ingestion and usually peaks about day⁵, then decreases steadily; only occasionally is dialysis needed^{3,7}. In conclusion, it is important to monitor renal function in cases of parac-

etamol overdose¹¹, even in the absence of liver damage, especially as from the 2nd day after ingestion.

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Leech infestation

Sir,

Leeches belong to the phylum Annelida and comprise the subclass Hirudinea. Human infestation usually occurs after ingestion of swamp or pond water which these worms inhabit. The highest incidence occurs in Asia, Africa and some Mediterranean countries, including Spain¹.

A 6-year-old boy from rural Morocco was brought to the ED by his mother on

observing nosebleed during 5 days and intermittent traces of blood in the boy's saliva. There was no history of previous bleeding or catarrh. The child had swum in stagnant shallow river water. Physical examination showed mucocutaneous pallor but no hepatosplenomegaly or lymphadenopathy, and cardiopulmonary auscultation was normal. Examination of the oropharynx revealed a reddish-purple moving object with a ringed body suggestive of leech type of worm. It was extracted using Magill forceps (Figure 1), without complications. The hemogram showed hemoglobin 10 g / dL, MCV 80 µl and mean corpuscular hemoglobin 29 pg; the remaining lab test results were normal. The child was referred to his pediatrician for anemia monitoring.

Leeches are hermaphrodite annelids of which there are about 700 species. *Hirudo medicinalis* is the best known and has been used in medicine for more than 2,000 years². Human infestation originates with contact with swamp or pond water inhabited by this annelid. The worm can adhere to any part of the upper aero-digestive tract, mainly the nostrils and pharynx and less frequently the larynx. The leech has a suction cup on its head containing three sharp blades which it uses to penetrate the host mucosa. Bleeding is due to the anticoagulant activity of an enzyme, hirudin, in the saliva of the worm, which maintains its effect for hours after the annelid is removed³. After penetrating the host mucosa the leech begins to feed on blood; the sensation for the patient is that of a foreign body in the nostrils, larynx or pharynx, which is accompanied by epistaxis, hemoptysis or hematemesis. Dyspnea or dysphonia may also arise if the worm is lodged in the larynx, which increases in parallel with increased size of the worm.

The medicinal use of leeches for bloodletting dates back to ancient Egypt, and continued well into the first half of the nineteenth century, especially in France, where it was used with or as an alternative to phlebotomy by physicians such as J. V. Broussais. The therapeutic use of leeches was abolished by scientific medicine in the twentieth century.

Currently, the use of *Hirudo medicinalis* has been revived in special situations in plastic surgery, since it has proved useful in the local treatment of venous congestion, a common complication in plastic and reconstructive surgery⁴. The complications associated with leech

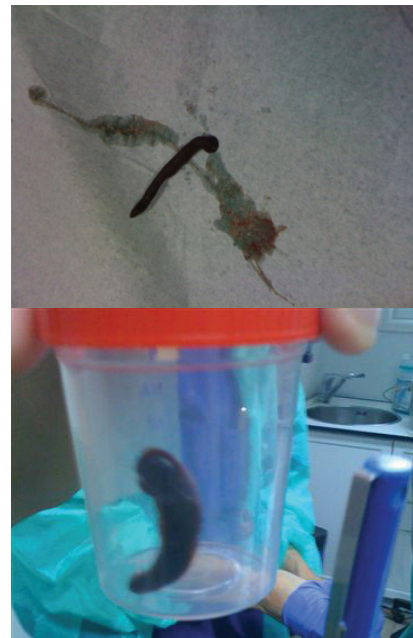


Figure 1. Photograph showing the leech extracted from the patient's oropharynx.

application are easily controllable: anaphylactic reactions have been described and migration of leeches to the airway, digestive or genitourinary tract can be considered anecdotal. Perhaps the most feared complication is infection by *Aeromonas hydrophila*⁵, which are bacteria inhabiting the intestine of the leech; it is considered an opportunistic germ that can cause anything from gastroenteritis to soft tissue infection, sepsis and meningitis, especially but not exclusively in immunocompromised patients.

Despite the rarity of such cases, leech infestation must be considered in the differential diagnosis of epistaxis and hemoptysis, especially when the patient has a history of contact with waters that could be leech habitat.

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On the roles of the clinical toxicologists

Sir,

I read with great interest the editorial by Burillo-Putze and Mesa Fumero on the relationship between clinical toxicology and Emergency Medicine (EM)¹. Certainly, as the authors demonstrate, this relationship is close, necessary and productive for both areas. Indeed, the benefits of this symbiosis were defended by myself in this journal in 2009², and since then multiple publications by toxicologists have appeared in recent years in the field of EM³⁻¹⁰, as well as consensus documents on common points of interest^{11,12}, all confirming the relationship.

However, the clinical toxicologist (CT) is also involved in many other and equally important areas. Without attempting to be exhaustive, one could cite inter-departmental consultations involving the TC, particularly the intensive care unit (ICU), where up to 5% of admissions correspond to severe poisoning in which the CT's wealth of experience can be invaluable in proposing detoxification techniques or antidote treatments¹³. And requests for CT expertise can also come from other hospitals lacking CTs, or primary care centers, where family physicians, pediatricians or other care specialists treat cases of poisoning. Another very important facet is the availability of a toxicology monographic report for external consultation in which the CT can perform ambulatory monitoring follow up of some acute poisonings that were initially attended in the ED but require further follow up (ingestion of a caustic product or the inhalation of carbon monoxide, for example), control of patients exposed to heavy metals (mercury, lead etc) or the assessment of diseases where other specialists have not identified

the etiologic factors (as in chemical sensitivity syndrome)¹⁴, which at the Hospital Clínic de Barcelona accounts for more than 200 annual visits for any of these reasons. Monitoring of all types of poisoning, acute or chronic, through a national program of toxicovigilance¹⁵ is another mission the CT can assume, as is done by pharmacovigilance units or monitoring of adverse reactions in cases of drug abuse. The CT is privileged to have a broad view of toxins and poisoning and can contribute to the design of strategic health policies related with public health and exposure to chemicals, the rational availability of antidotes at the various levels of care, collaborating with occupational risk prevention, research in clinical toxicology and teaching in this specialty.

Despite all these roles, the figure of a full-time CT is a rare avis in Spanish hospitals, probably only available at Río Hortega hospital in Valladolid and Clínic de Barcelona. By coincidence, or not, these two centers are leaders in Spanish scientific production in the field of clinical toxicology¹⁶. If no TC is available, functional toxicology units comprising various specialists (EPs, intensive care staff, internists, laboratory analysts, pharmacists and others) must assume these roles².

Drs. Burillo-Putze and Mesa Fumero are of course fully aware of all these facets of toxicology, but since the editorial could give the impression that the CT is just another component of the emergency department team, I believed it necessary to outline in this letter the other roles assumed.

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Reply authors'

Sir,

Space limitations in the editorial section very often prevent being able to fully develop a topic to the extent that, in this case, the author would have liked. The result is omission of some important aspects, such as those outlined by Prof. Nogué in his letter. However, we fully agree with his comments there¹.

With regard to follow up monitoring of poisoned post-discharge outpatients, we agree that a clinical toxicologist is sometimes required, even in pediatric cases, and this type of consultation is practically nonexistent in Spanish hospitals, except in a few centers with specific clinical toxicology units and, consequently, clinical toxicologists, either on a part-time or full-time basis. Therefore, among other reasons, each regional health system should have at least one reference unit of clinical toxicology.

Other areas where clinical toxicology is (or should be) necessarily involved include emergency medical systems particularly for toxic disaster² and poison information services, like the Poison Centers in the USA³. As an example, the American Academy of Clinical Toxicology has a program called Advanced Hazardous Materials Life Support, which includes training for initial attendance in cases of chemical, biological or radioactive events⁴.

Since no medical specialty encompasses all the knowledge of a clinical toxicologist, and to avoid the situation of further self-training as occurs in emergency medicine⁵, a formal framework is needed which would allow acquisition of knowledge and clinical experience, and formal accreditation of clinical toxicology^{6,7}. In our editorial we included the American training model, which also includes specific accreditation for other non-physician clinicians such as pharmacists working in Poison Centers. The law on Health Professions in Spain (LOPS) provides for accreditation, with standard and advanced diplomas. The scientific societies most involved in toxicological assistance (SEMES, AEP, SEMICYUC, and others)⁸ through its working groups, and entities such as the Spanish Foundation of Clinical Toxicology, should propose to the health and education authorities a theoretical and practical training curriculum to regulate the figure of the clinical toxicologist, as well as basic initial and transversal training of residents of other specialties, including emergency medicine of course^{9,10}.

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Emergency department psychiatric consultations and suicide attempts on full-moon nights

Sir,

It is commonly believed that the phases of the moon exert an important influence on the behavior of psychiatric patients. Numerous studies have been performed but the results have been variable. Some authors have found no association between lunar phases and suicide events^{1,2}. Tejedor et al³ found a weak

association between lunar phases and hospital bed occupation and the consumption of hypnotic drugs. McLay et al⁴ did not find such an association. Given the controversy, and wishing to clarify whether there is a possible relationship between the lunar cycle and urgent psychiatric disease, we evaluated differences in the incidence of emergency department (ED) patients requiring psychiatric assessment at periods of full moon, as well as differences in clinical and demographic characteristics in these patients. Of all patients attending our ED between December 2010 and November 2011 (12 months) we studied those requiring psychiatric assessment. These patients were divided into two groups: the first consisted of patients attended during the 4-day period of full moon, from one day before to two days after full moon (called PLL in this study); the second group consisted of patients attended on the remaining days. Clinical and demographic data for all patients were recorded.

During the study period, 102,735 patients were attended, of whom 2.24% required psychiatric assessment. Their clinical and demographic characteristics are shown in Table 1. Differences between the two groups were observed: 52.4% were men in group PLL vs 43% in group 2 ($p = 0.002$) and the incidence of suicide attempts was 21.7% in the PLL group vs 29.2% in group 2 ($p = 0.029$). No other differences were found in the remaining variables (Table 1), nor in mean daily attendance (6.3 ± 2.8 in PLL vs 6.4 ± 2.6 in group 2; $p = 0.9$).

The present study showed for the first time a significant increase in the proportion of male ED patients requiring psychiatric assessment, as well as a decrease in attempted suicide, in the PLL group, but no significant difference in the total incidence of patients requiring psychiatric assessment. The decrease in attempted

Table 1. Demographic and clinical characteristics of ED patients requiring psychiatric assessment divided into two groups according to lunar phase period and compared using univariate analysis

	Global (n = 2,302)	Full-moon period (n = 294)	Non-full-moon period (n = 2,008)	p
Age (mean \pm SD)	41.6 \pm 15.5	42.6 \pm 15.8	41.4 \pm 15.4	0.48
Male sex [n (%)]	1,017 (44.2%)	154 (52.4%)	863 (43.0%)	0.002
Psychiatric history [n (%)]	1,720 (74.7%)	220 (74.8%)	1,500 (74.7%)	0.62
Suicide attempt [n (%)]	651 (28.3%)	64 (21.7%)	286 (29.2%)	0.029
Toxic habits [n (%)]	854 (37.1%)	111 (37.8%)	739 (36.8%)	0.54

suicide rate could be related with a change in gender pattern of ED visits. In conclusion, despite popular beliefs about the full moon period, we found no evidence to support the need for additional ED staff (emergency physicians and/or psychiatrists) during periods of full moon.

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Real-time ultrasound guidance in the diagnosis of ankle arthritis in the emergency department

Sir,

Musculoskeletal ultrasonography is a non-invasive technique allowing easy access and rapid implementation^{1,2}. In the diagnosis of musculoskeletal disease in the ED, especially when dealing with regions where several structures converge, ultrasound imaging helps identify the cause of symptoms between cutaneous inflammation and subcutaneous tissue, tendons and their respective sheaths and retinacula, and articular surfaces¹⁻⁴. All these diagnostic possibilities exist in the ankle in the event of pain with mixed characteristics (mechanical and inflammatory). Arthritis is perhaps most challenging to diagnose when there is a need to assess the characteristics of the synovial fluid in small volume capsules as in the tibiotalar or talonavicular joints (Figure 1).

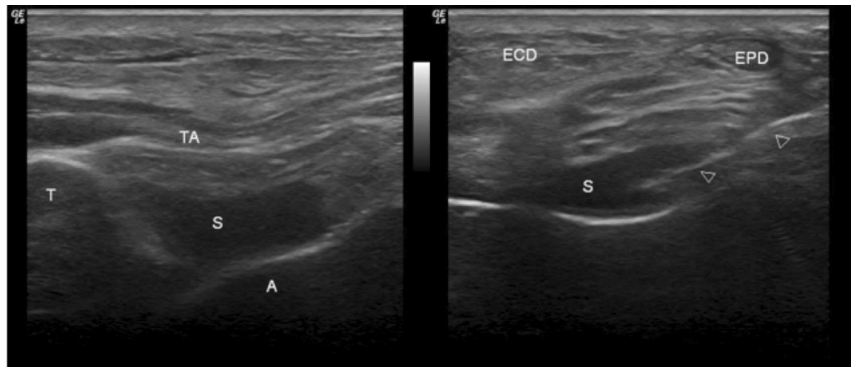


Figure 1. Ultrasound image of the tibi-astragalus ankle joint. Left: longitudinal view; S: abnormal synovial content, T: tibia A: astragalus, TA: tibialis anterior. Right: transversal view showing the needle reaching the synovial space (arrows); ECD: common extensor of the toes; EPD: extensor of the big toe.



Figure 2. Real-time ultrasound-guided arthrocentesis technique.

Between June 2009 and January 2012 we evaluated 420 cases of ankle pain. Of these, 101 (24.04%) were diagnosed as ankle arthritis. Seventy patients (69.3%) were men, mean age 51 years (SD 2 years) while 31 were women with a mean age of 42 years (SD 3 years). Following the guidelines on ED management of arthritis⁵, arthrocentesis was performed in all cases. We performed simple arthrocentesis of tibiotalar or talonavicular joints with marked ultrasound in 63 cases and with real-time ultrasound guidance in 38 patients. Marked ultrasound involves pen-marking a point on the skin after ultrasound imaging while real-time ultrasound guidance involves constant visualization to direct the needle to the desired location. Thirty-nine (61.9%) of the conventional ultrasound arthrocenteses with marking allowed extraction of sufficient synovial fluid for analytical study (microbiological and crystals), versus 35 (92.1%) of the arthrocenteses performed with real-time ultrasound guidance ($p < 0.001$).

The technique of arthrocentesis with real-time ultrasound guidance has shown greater efficacy for obtaining synovial fluid in numerous series⁶, although its superiority has not been demonstrated on use for the administration of infiltrations with corticoids^{7,8}. For ankle joints we rec-

ommend the use of a 9-12 MHz linear probe placed transversely to the axis of the synovial capsule and needle access below the side of the probe at an angle of 30-45 degrees (Figure 2).

In our department the ultrasound device has a linear probe which allows us to perform these procedures under real-time ultrasound guidance and facilitates collection of synovial fluid samples. We are aware that this technique is not readily available in all emergency services, nor is there much training for practical application⁶, which deficiencies we believe should be remedied.

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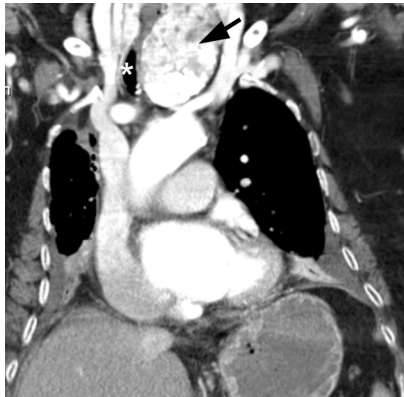


Figure 1. Thoracic CT scan: slice showing large intra-thoracic goiter with gross calcifications (arrow) which caused tracheal compression and displacement with lumen reduction to a minimum of 6 mm (asterisk).

Benign Horner syndrome

Sir,

Horner syndrome (HS) is caused by interruption of sympathetic nerve fibers from the brain to the ipsilateral eye and face. It is characterized by presence of miosis, ptosis and enophthalmos, with anhidrosis in complete forms. Malignant neoplasms, including bronchogenic carcinoma constitute the most common cause¹, but it may be due to various diseases with different prognoses².

An 82 year old woman attended the emergency department where she was diagnosed with atrial fibrillation and respiratory failure. Medical history included moderate aortic stenosis and intra-thoracic goiter with severe tracheal stenosis. Three months earlier she had rejected thyroidectomy. Physical examination showed bilateral jugular plethora and left HS, previously undetected. CT scan showed a very large intra-thoracic goiter that displaced the trachea and produced significant lumen compression (Figure 1). With the diagnosis of heart failure and hypercapnic respiratory failure due to stenosis of the upper airway, medical treatment and non-invasive mechanical ventilation was prescribed. Despite these measures, evolution was unfavorable and the patient died shortly afterwards.

Thyroid diseases can cause damage to the sympathetic fibers in their pre-ganglionic trajectory and represent an unusual cause of HS. Leuchter et al. found that HS was most commonly due to benign processes rather than thyroid neoplasms, and that multi-nodular goiter (MNG) with intra-thoracic growth was the most common cause¹. Still, it remains an unusual cause; a literature search using Medline revealed only six cases of HS due to benign thyroid disease in the past 10 years: Riedel thyroiditis³, Hashimoto disease⁴, follicular adenoma⁵ and three

cases of intra-thoracic MNG^{1,5,6}. For very large intra-thoracic goiter or one that causes compressive symptoms, the treatment of choice is surgical removal, which can improve or even resolve the HS, although neurological sequelae may persist due to the ischemia induced by prolonged local compression⁶. Our advanced age patient had severe respiratory compromise which ruled out surgical intervention and was instrumental in the unfavorable outcome. The fact that the HS had been unnoticed suggests slow development and suggests a benign etiology. Thus, although the most common cause of HS is neoplasia, it is necessary to consider the clinical context and the form of presentation, and also that the association of HS with thyroid growth does not necessarily correspond to malignancy.

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Risk scale for infections of the skin and soft tissues

Sir,

Necrotizing fasciitis (NF) is severe infection of soft tissue, more frequently found in diabetics than the general population¹. It is a time-dependent disease whose symptoms are often delayed, leading to high mortality associated with delay in diagnosis and surgical treatment².

A 35 year old diabetic woman attended the emergency department for dyspnea and malaise of some hours duration. The patient reported having suffered an abdominal burn one week before. Physical examination showed tachypnea and poor perfusion, with abdominal lesions, redness and necrotic areas. She underwent emergency debridement of the lesions but died a few hours later. Blood cultures were positive for *Staphylococcus aureus*³.

Infections of the skin and soft tissue are a frequent reason for ED visits, but necrotizing forms are uncommon. This translates into little experience in identifying early signs and delayed diagnosis. In NF, there is rapid progression of the infection, following a plane between the fascia and subcutaneous muscle tissue; this explains why the surface lesion in many cases does not reflect its true extent. Early diagnosis of NF is difficult when the only symptom is pain, and because during the initial stages its clinical manifestations are indistinguishable from those of cellulitis. However, there are a number of clinical data that can guide us to a diagnosis of NF: edema and induration outside of the erythema, the appearance of blisters, crepitus and cutaneous anesthesia (pathognomonic) the presence of gas on X-ray, the absence of lingangitis, disproportionately intense pain (sometimes with

Tabla 1. Laboratory risk indicator for necrotizing fasciitis

Parameter	Value	Score
C-reactive protein (mg/l)	< 150	0
	≥ 150	4
Total white cell count (cells/μl)	< 15	0
	15-25	1
	> 25	2
Hemoglobin (g/dl)	> 13,5	0
	11-13,5	1
	< 11	2
Sodium (mmol/l)	≥ 135	0
	< 135	2
Creatinine (mmol/l)	≤ 141	0
	> 141	2
Glucose (mg/dl)	≤ 180	0
	> 180	1

no skin lesion), ecchymosis and systemic alterations⁴.

Since the diagnosis of NF by emergency physicians is primarily based on clinical data, a laboratory risk indicator scale has been devel-

oped (Table 1), with a positive predictive value of 92% and negative predictive value of 96%. Patients are classified into three risk groups, according to which diagnostic testing is indicated⁵. The main limitation is that it is for retrospective application, which may lead to overestimating its diagnostic yield. And one should consider that immunocompromised patients and those with comorbidity or diabetes present decreased inflammatory response, so the results should be interpreted with caution. Even more important than the initial laboratory result is the evolution of a series of test values; increasing values indicate the need for a more aggressive diagnostic and therapeutic approach.

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