

Case Report

Acute Interstitial Nephritis Associated with Smilax Consumption: Case Report

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Article History

Received: 10.03.2024

Accepted: 22.04.2024

Published: 29.04.2024

Abstract: The cocolmecha herb (Smilax) belongs to the smilacaceae family, comprising around 350 species of tropical and subtropical distribution, used as popular medicine in Central America and the Caribbean islands. In Mexico it has been used mainly for weight loss. Case presentation: A 52-year-old man with a history of systemic arterial hypertension and grade I obesity, with consumption of smilax for at least two months, presented deterioration in renal function, with initial studies with urea 90 mg/dl and serum creatinine 3.6 mg/dl, infectious and systemic causes were ruled out, acute tubulointerstitial nephritis was confirmed by percutaneous biopsy, management was given with methylprednisolone boluses and renal function improved. The use of traditional remedies is common throughout the world, with use rates exceeding 80% in some populations. It is considered that approximately 2% of chronic kidney disease (CKD) is due to AIN.

Keywords: Smilax, Cocolmecha, Tubulointerstitial Nephritis, Obesity.

INTRODUCTION

In Mexico, according to the National Health and Nutrition Survey (ENSANUT 2018), of the total number of adults aged 20 years and over, 39.1% are overweight and 36.1% are obese (75.2%) [2]. In a study carried out in Hermosillo, Sonora, Mexico qualitative, descriptive and for convenience in which two companies were selected made up of a total of 58 branches of naturopathic products, the methodological tool consisted of asking which are the 3 most sold or requested products for weight reduction and their cost unitary. 22 species of plants were obtained in which 4 of them turned out to be the most used, firstly Cocolmecha (Smilax sp.) for weight loss [3]. The Smilax genus, which belongs to the Smilacaceae family, which comprises around 350 species with a tropical and subtropical distribution, has been used in popular medicine in Central America and the Caribbean islands [1].

Acute interstitial nephritis (AIN) is one of the leading causes of acute kidney injury (AKI); It can be caused by infections, autoimmune diseases or nephrotoxics (drugs, medicinal herbs) [4, 5]. The latter represent up to 35% of ARI cases with mortality rates ranging between 24 to 75% [6]. We report the following case of AIN after consumption of Smilax, suggesting that the consumption of this medicinal herb may be a cause of AKI.

CLINICAL CASE

A 52-year-old man with a history of grade 1 obesity with a body mass index of 32 kg/m² and systemic arterial hypertension for 5 years of diagnosis, under treatment with losartan 50 mg every 24 hours. His condition began with the presence of pain in the bilateral lumbar region of sudden onset, 9/10 on a visual analogue scale, radiating in the hemibelt to the anterior region of the abdomen accompanied by difficulty evacuating, which is why he went to the emergency

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CITATION: Daniel Santiago López Yaco, Marianinfa Assad Merlo, Erick Miguel Santomé Vizarratea, Yrais Alejandra González Osorio (2024). Acute Interstitial Nephritis Associated with Smilax Consumption: Case Report. *South Asian Res J Med Sci*, 6(2): 34-37. 34

department for evaluation. Upon admission, he reported consumption of cocolmecha-based tea for weight loss two months prior to the onset of his symptoms.

The physical examination revealed edema in the upper and lower extremities; the rest of the examination was unremarkable.

In the initial examinations 09/16/23 he highlighted urea 90 mg/dl and serum creatinine 3.6 mg/dl, leukocytes 13.9 103/mm³ with neutrophilia of 10,860. In the general urine test negative for alterations. A protocol was initiated to search for the etiology of renal failure.

Table 1: Laboratory tests within the study protocol

Laboratory studies	Results
Anti HIV Antibodies	Non-reactive
Anti Hepatitis C Antibodies	Non-reactive
Hepatitis B surface antigen	Non-reactive
C3	119 mg/dl
C4	22.6 mg/dl
C - ANCA	Negative
P - ANCA	Negative
ANA	Negative

HIV: Human immunodeficiency virus; **C-ANCA:** Antineutrophil cytoplasmic cytoplasmic antibodies; **P-ANCA:** Peripheral antineutrophil cytoplasmic antibodies; **ANA:** Antinuclear antibodies.

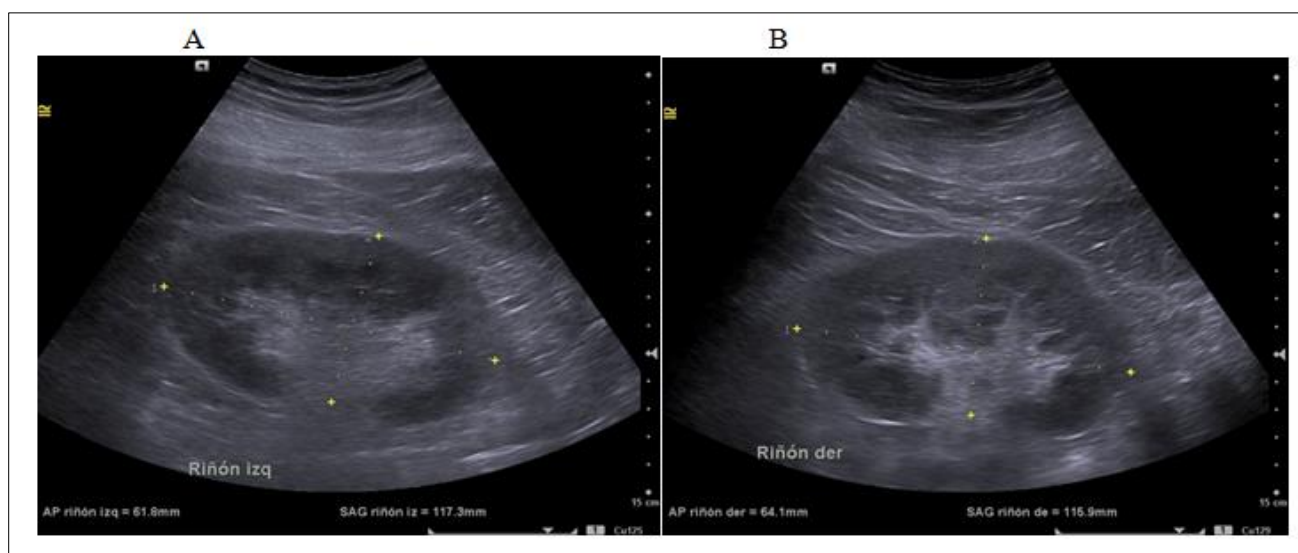


Image 1: Kidney ultrasound

A. Left kidney of normal shape and situation 11.73 x 6.18 x 6 cm, regular defined edges, homogeneous parenchyma, without evidence of focal or diffuse lesion. B. Right kidney of normal shape and situation, measuring 11.59 x 6.41 x 6.83 cm, regular defined edges, homogeneous parenchyma, without evidence of focal or diffuse lesion.

EVOLUTION

During the stay, a renal ultrasound was performed, which was reported normal. Infectious and systemic causes of ERA were ruled out, so a renal biopsy was performed by percutaneous puncture, in which acute tubulointerstitial nephritis was reported.

Treatment was started with boluses of 500 mg methylprednisolone for 3 consecutive days, followed by prednisone at 1 mg/kg/day for 7 days and then with a descending regimen for 4 weeks.

Table 2: Progression of kidney function

	16 September	18 September	19 September *	21 September	23 September	25 September	28 September	28 October
Urea (mg/dl)	90	156	161	154	104	77	54	29
Creatinine(mg/dl)	3.6	7.9	8.1	7.1	2.8	1.6	1.3	1
Glomerular filtration rate (CKD-EPI ml/min/1.73m2)	19	8	7	9	26	52	66	91

*Initiation of methylprednisolone boluses.

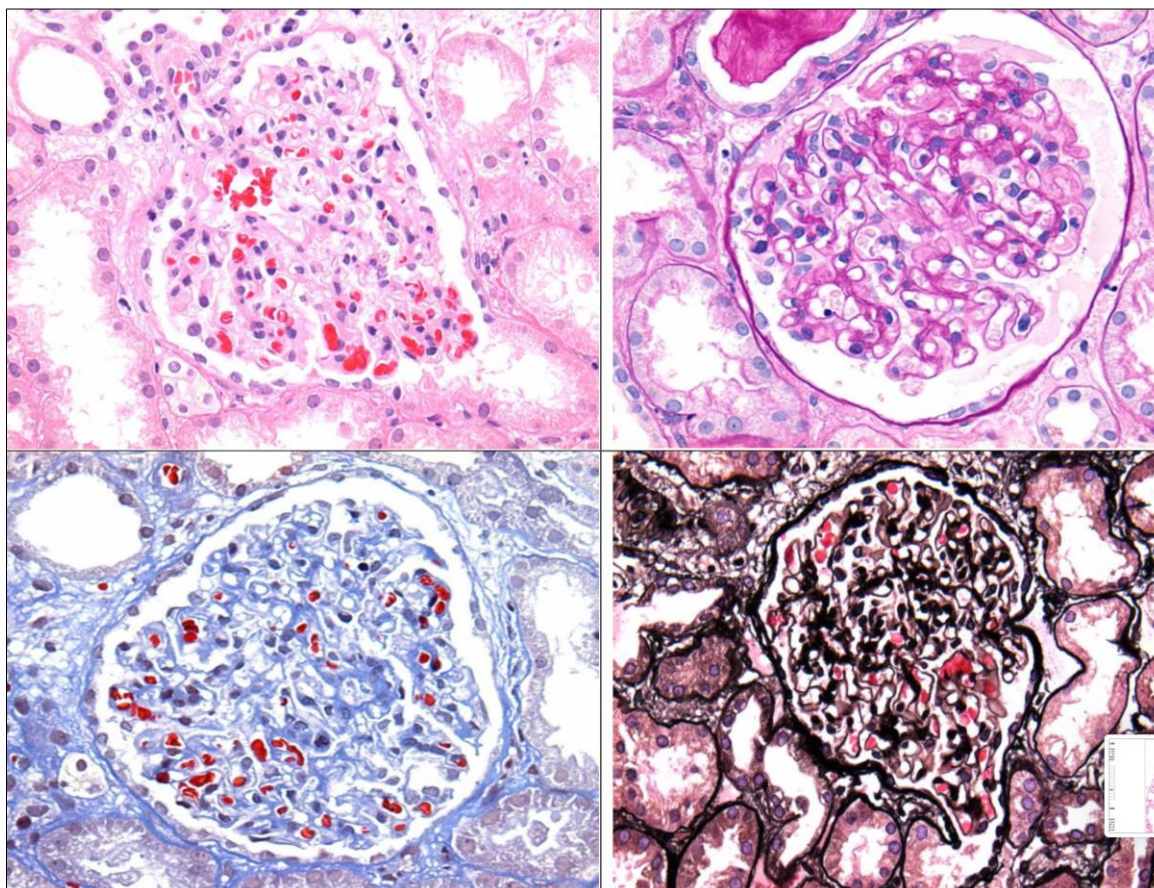


Figure 2: The microscopic study shows diffuse interstitial edema that causes the loss of the tubular “back to back” pattern with multiple foci of inflammatory infiltrate made up of lymphocytes, plasma cells, neutrophils and eosinophils, with extension towards the tubular walls and lumens

EVOLUTION

After starting steroid treatment, there was a decrease in creatinine and serum urea levels. He was discharged home with follow-up in the outpatient clinic, being evaluated after 4 weeks with recovery of renal function with GFR 91 ml/min/1.73m2 by CKD EPI.

DISCUSSIONS AND CONCLUSIONS

We describe the case of AIN after Smilax ingestion for two months. The use of traditional remedies is common throughout the world, with use rates exceeding 80% in some populations [6].

It is important to take an adequate history of medicinal herbal consumption, especially in overweight and obese patients.

It is considered that approximately 2% of chronic kidney disease (CKD) is due to AIN, which is equivalent to 10 million prevalent cases worldwide, and AIN is the primary cause of terminal CKD in the 3-4 % of incident patients [7].

In Latin America there are around 95,000 species of plants, traditional medicine practices are very varied and different in each region and are closely related to the great existing biodiversity [4]. Several factors can contribute or affect the nephrotoxicity of traditional medicines, Such factors include contamination of the remedy, misidentification or preparation of plants, incorrect use or administration of a remedy, concurrent disorders in the patient receiving the remedy, age and sex of the patient, and interaction of the remedy with other medications [6].

Most patients with AIN do not have any characteristic systemic symptoms or signs, such as rash, fever, or flank pain. Very often, they manifest nonspecific constitutional symptoms, symptoms of renal failure, or no symptoms at all [8]. The cornerstones of treatment for drug-associated AIN include: (1) early identification, (2) withdrawal of the suspected agent, (3) consideration of immunomodulatory therapy, and (4) secondary prevention. Within immunomodulatory therapy, the treatment of choice is steroids; their earlier onset seems to have a favorable impact on the response to treatment; the dose and duration of treatment with corticosteroids vary according to the studies. Most reports indicate an initial dose of 0.5 to 1 mg/kg per day of prednisone equivalent, which may be preceded by a “pulse dose” of 250 to 500 mg/day of methylprednisolone for 2 to 4 days [9].

Ethical Responsibilities

Protection of People and Animals: The authors declare that no experiments on humans or animals have been performed for this research.

Data Confidentiality: The authors declare that they have followed the protocols of their workplace regarding the publication of patient data.

Right to Privacy and Informed Consent:

The authors have obtained the informed consent of the patients and/or subjects referred to in the article. This document is in the possession of the corresponding author.

Use of Artificial Intelligence to Generate Texts:

The authors declare that they have not used any type of artificial intelligence in the writing of this manuscript or for the creation of figures, graphs, tables or their corresponding legends.

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