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CASE REPORT

FOOD ALLERGY AS A TRIGGER FOR KOUNIS SYNDROME WITH STENT THROMBOSIS: CASE REPORT

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Abstract

Introduction. Kounis syndrome is an underrecognized clinical condition involving the overlap of acute coronary syndrome and anaphylaxis.
Case presentation. We report the case of a 43-year-old male who experienced generalized urticaria, facial angioedema, throat discomfort and loss of consciousness after consuming a tomato salad. He had a prior non-ST segment elevation myocardial infarction (NSTEMI) and stent placement in the proximal left anterior descending (LAD) artery. The urgent evaluation revealed stent thrombosis, managed by percutaneous coronary intervention (PCI) and allergy-directed therapy. The allergological testing showed high specific IgE levels to multiple allergens, particularly non-specific lipid transfer proteins (nsLTPs).
Conclusions. This case underscores the importance of recognizing allergic triggers in acute coronary syndromes and managing Kounis syndrome with a multidisciplinary approach, especially in patients with coronary stents.

Keywords: Kounis syndrome, stent thrombosis, anaphylaxis, food allergy, acute coronary artery disease.

Résumé

Allergie alimentaire comme déclencheur du syndrome de Kounis avec thrombose de stent: rapport de cas

Introduction. Le syndrome de Kounis est une affection clinique méconnue impliquant la superposition d'un syndrome coronarien aigu et d'une anaphylaxie.
Présentation du cas. Nous rapportons le cas d'un homme de 43 ans ayant présenté une urticaire généralisée, un angio-œdème facial, une gêne laryngée et une perte de connaissance après avoir consommé une salade de tomates. Il avait déjà eu un infarctus du myocarde sans sus-décalage du segment ST (NSTEMI) et la pose d'un stent dans l'artère descendante antérieure gauche proximale. L'évaluation en urgence a révélé une thrombose du stent, prise en charge par intervention coronaire percutanée et traitement allergologique. Les tests allergologiques ont montré des taux élevés d'IgE spécifiques contre plusieurs allergènes, en particulier les protéines de transfert lipidique non spécifiques (nsLTP).
Conclusions. Ce cas souligne l'importance de reconnaître les facteurs déclenchants allergiques dans les

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List of abbreviations:
ACS – acute coronary syndrome
CK-MB – creatine kinase – muscle-brain isoenzyme
IgE – immunoglobulin E
PCI – percutaneous coronary intervention
KS – Kounis syndrome

syndromes coronariens aigus et de prendre en charge le syndrome de Kounis par une approche multidisciplinaire, en particulier chez les patients porteurs de stents coronaires.

Mots-clés: syndrome de Kounis, thrombose de stent, anaphylaxie, allergie alimentaire, maladie coronarienne aiguë.

Introduction

Kounis syndrome is a rare disease, first described in 1991 by Nicholas Kounis. It involves the concurrence of an acute coronary syndrome (ACS) with a hypersensitivity or allergic reaction. This syndrome illustrates the critical interaction between immunologic and cardiovascular systems, often overlooked in acute settings.

Kounis syndrome has three clinical variants:

- Type I: occurs in patients without pre-existing coronary artery disease, in whom the allergic reaction causes coronary artery spasm.
- Type II: occurs in patients with underlying atherosclerosis, in whom allergic mediators trigger atheromatous plaque rupture or erosion.
- Type III: involves stent thrombosis or restenosis in the setting of an allergic reaction.

The pathophysiological mechanisms are represented by mast cell activation and release of potent mediators such as histamine, leukotrienes, platelet-activating factor, and prostaglandins. These substances can lead to coronary vasospasm, plaque destabilization, and thrombosis.

Despite increasing awareness, Kounis syndrome is frequently misdiagnosed because its symptoms overlap with both cardiovascular and allergic emergencies. Clinicians often hesitate in choosing appropriate treatment, as therapies beneficial for one component (e.g., epinephrine for anaphylaxis) may exacerbate the other (e.g., myocardial ischemia).

We present a rare case of type III Kounis syndrome manifesting as stent thrombosis shortly after ingestion of a food allergen, highlighting the importance of an early diagnosis and tailored treatment.

Case presentation

A 43-year-old male presented to the emergency department with generalized urticaria, facial angioedema, itching, and throat discomfort. Shortly thereafter, he experienced syncope and transient loss of consciousness. He reported having consumed a tomato salad approximately 30 minutes before symptom onset.

This was his second such event. The first, a few months before, had resulted in a diagnosis of non-ST segment elevation myocardial infarction (NSTEMI) with elevated cardiac enzymes (troponin I and CK-MB). Coronary angiography at that time revealed a significant proximal left anterior descending (LAD) lesion, and a 3.25×18 mm Xience drug-eluting stent was implanted.

On this occasion, the electrocardiogram demonstrated bradycardia (down to 30 bpm), and the blood tests revealed modest elevation in C-reactive protein and cardiac enzymes. Urgent coronary angiography confirmed the acute stent thrombosis. The patient underwent immediate percutaneous coronary intervention (PCI) and was started on dual antiplatelet therapy (aspirin and prasugrel), statins, and proton pump inhibitors. For the allergic symptoms, corticosteroids and antihistamines were administered. Epinephrine was cautiously avoided due to the risk of exacerbating myocardial ischemia.

The 24 hours Holter monitoring revealed episodes of marked sinus bradycardia (heart rate 32 bpm) and nighttime pauses up to 5.6 seconds, suggesting vagal dysfunction, possibly amplified by an allergic mechanism.

The allergy testing revealed elevated specific IgE to a broad range of allergens:

- Class 6 (IgE >100 kU/L): tomato, peanut, apple, carrot, rice, flour mix, rye pollen, hazel pollen, grass mix, mugwort, citrus mix;
- Class 5: birch pollen;
- Class 2: *Dermatophagoides farinae*, soybean;
- Borderline: dog and cat epithelia.

Further molecular testing revealed strong positivity to Par j 2, a non-specific lipid transfer protein (nsLTP) from *Parietaria Judaica (Par j 2)*. This sensitization, together with reactivity to tomato and peach, suggested a potential nsLTP syndrome, known to provoke systemic allergic responses in Mediterranean populations.

Discussion

This case exemplifies the classic presentation of a type III Kounis syndrome: coronary stent thrombosis

provoked by a systemic allergic reaction. The temporal relationship between allergen exposure and cardiac symptoms, combined with elevated biomarkers and angiographic evidence, supported this diagnosis.

The syndrome's pathophysiology is multifaceted. Mast cell degranulation during an allergic reaction releases vasoactive substances capable of inducing vasospasm and thrombosis. In patients with coronary stents, this can lead to catastrophic outcomes such as occlusion and infarction. Our patient's sensitization to nsLTPs (highly stable, cross-reactive plant allergens) supports this mechanism. The Par j 2 positivity aligns with the hypothesis that nsLTP syndrome played a significant role.

Kounis syndrome poses several diagnostic challenges. First, symptoms such as hypotension and bradycardia can mimic isolated cardiac or allergic events, delaying accurate recognition. Second, standard markers like troponin may be attributed solely to acute coronary syndrome, without considering a hypersensitivity trigger. Third, electrocardiographic changes may be nonspecific or misattributed to vagal responses.

The treatment represents a therapeutic dilemma. Epinephrine is critical in anaphylaxis but may worsen myocardial oxygen demand and trigger vasospasm. Beta-blockers, typically used in acute coronary syndrome, can aggravate allergic reactions. Dual antiplatelet therapy and anticoagulation, required for PCI, may worsen vascular leakage in anaphylactic shock. This necessitates a balanced approach tailored to each individual's clinical state.

Our case also illustrates the importance of interdisciplinary collaboration. Allergy testing and cardiology management were essential to the patient's recovery. Awareness of such cases can enhance clinician suspicion and expedite the diagnosis in future presentations.

Conclusions

Kounis syndrome represents a dangerous yet underrecognized convergence of allergy and coronary pathology. This case of stent thrombosis during an allergic reaction illustrates the diagnostic ambiguity and therapeutic complexity faced by clinicians. Early recognition, cautious management, and interdisciplinary cooperation are key to improving outcomes in such complicated presentations.

Author Contributions:

M.H. was responsible for the conception of the work, clinical supervision, and overall management of the patient. M.H. contributed to the interpretation of clinical findings and critically revised the manuscript. E.N. collected the clinical data, performed the allergy evaluation, and drafted the manuscript. Both authors contributed to the analysis, approved the final version of the manuscript, and agree to be accountable for all aspects of the work.

Compliance with Ethics Requirements:

"The authors declare no conflict of interest regarding this article"

"The authors declare that all the procedures and experiments of this study respect the ethical standards in the Helsinki Declaration of 1975, as revised in 2008(5), as well as the national law. Informed consent was obtained from the patient included in the study"

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References

1. Kounis NG, Zavras GM. Histamine-induced coronary artery spasm: the concept of allergic angina. *Br J Clin Pract.* 1991;45(2):121–128.
2. Kounis NG. Kounis syndrome: an update on epidemiology, pathogenesis, diagnostic workup, and therapeutic management. *Clin Chem Lab Med.* 2016;54(10):1545–1559.
3. Benchea L-C, Anghel L, Scripcariu DV, et al. Kounis syndrome in clinical practice: insights from clinical case series and mechanistic pathways. *Journal of Clinical Medicine*. 2025; 14(3):768. https://doi.org/10.3390/jcm14030768
4. Abdelghany M, Subedi R, Shah S, Kozman H. Kounis syndrome: A review. *Heart Views*. 2017;18(4):141–149.
5. Fassio F, Almerigogna F. Kounis syndrome (allergic acute coronary syndrome): different views in allergologic and cardiologic literature. *Intern Emerg Med*. 2012;7(6):489–495.
6. Bavishi C, Argulian E, Messerli FH. Recognition and management of Kounis syndrome: a case series and review of literature. *Am J Med*. 2017;130(7):760.e1–760.e6.