

Title

When Contrast Constricts: Kounis Syndrome in the Cath Lab

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Background

Kounis syndrome is an allergic acute coronary syndrome caused by mast-cell mediator release leading to coronary vasospasm, plaque destabilization, or stent thrombosis. It is classified into type I (vasospasm without coronary disease), type II (ischemia/infarction in pre-existing coronary disease), and type III (stent thrombosis). It is rare (11.12 per 1000 people) and likely underdiagnosed, particularly in patients exposed to triggers such as iodinated contrast.⁽¹⁾

Case

A 78-year-old man undergoing pre-TAVR right and left heart catheterization for severe aortic stenosis was found to have severe first diagonal disease and underwent balloon angioplasty with IVUS-guided drug-eluting stent placement. Immediately after intervention, he developed profound hypotension requiring fluids and vasopressors. Repeat angiography demonstrated recurrent focal mid-LAD vasospasm that improved transiently with intracoronary nitroglycerin. Simultaneously, he developed diffuse skin erythema concerning systemic hypersensitivity reactions. Intraprocedural POCUS showed no pericardial effusion, hyperdynamic LV function, and a small IVC. With the combination of contrast exposure, allergic features, recurrent vasospasm, and shock, Kounis syndrome was suspected. He was treated with steroids, vasopressors, and intra-aortic balloon pump support, then improved rapidly and was weaned off support the following day. The presentation was most consistent with **type II Kounis** syndrome.

Conclusion

Kounis syndrome should be considered in cases of sudden coronary vasospasm and shock during angiography or PCI, especially when accompanied by erythema or other signs of anaphylaxis after contrast exposure. Rapid identification and treatment of both the allergic and coronary components are essential and lifesaving.



Figure 1:
RAO Caudal (left) and RAO Cranial (Right) Views showing 15% dLAD, 30% mLAD, 80% mDIAG1, 30% mLCX lesions.



Figure 2:
RAO Cranial View showing focal spasm of mLAD



Figure 3:
RAO Cranial view showing resolution of mLAD spasm after Intra Coronary Nitroglycerin administration.

References

1. Cahuapaza-Gutierrez NL, Calderon-Hernandez CC, Chambergo-Michilot D, De Arruda-Chaves E, Zamora A, Runzer-Colmenares FM. Clinical characteristics, management, diagnostic findings, and various etiologies of patients with Kounis syndrome. A systematic review. *Int J Cardiol.* 2025 Jan 1;418:132606. doi: 10.1016/j.ijcard.2024.132606. Epub 2024 Oct 1. PMID: 39362367.