

Kounis syndrome: not to be sneezed at

A 45-year-old man with previous history of allergic asthma and nasal polyps presented to his local hospital with angina pectoris, diaphoresis and nausea. He had recently had a severe exacerbation of his asthma and rhinorrhoea requiring hospital admission, but was not taking nasal decongestants. ECG was consistent with an acute inferior STEMI, and he was transferred to our institution for emergency cardiac catheterisation. Significant stenoses were noted in all major epicardial vessels, but particularly in the right coronary artery (figure 1, online video 1). However, these resolved following intracoronary Glyceryl trinitrate (figure 2, online video 2). Troponin I level was 38.9 ug/l (normal <0.1 ug/l) confirming significant myocardial necrosis. He had an elevated eosinophil count ($1.2 \times 10^9/l$). Urine toxicology was negative for drugs of abuse. We diagnosed coronary vasospasm secondary to allergic angina, or Kounis syndrome type 1. Allergic angina was first described in 1991,¹ and occurs in atopic individuals. It is precipitated by mast cell degranulation and release of vasoactive mediators, including histamine, leukotrienes and other neutral proteases, such as tryptase and chymase. Histamine and leukotrienes are powerful coronary vasoconstrictors (leading to Kounis syndrome type 1), while tryptase and chymase can induce plaque erosion and rupture² (leading to Kounis syndrome type 2). Our patient was managed



Figure 1 Significant stenoses noted in the right coronary artery on angiography.



Figure 2 Immediately following administration of intracoronary GTN, all the stenoses have resolved revealing an unobstructed vessel.

medically, although aspirin was not prescribed, as this may cause further mast cell degranulation and exacerbate the condition. He responded well to oral nitrates, calcium channel antagonists, prednisolone and the leukotriene antagonist, montelukast, in addition to his usual antihistamines and asthma inhalers.

Vassilis Vassiliou, Nick E J West, Stephen P Hoole

Department of Cardiology, Papworth Everard, Cambridge, UK

Correspondence to Dr Vassilis Vassiliou, Department of Cardiology, Papworth Hospital, Papworth Everard, Cambridge CB23 3RE, UK; vassiliou@doctors.org.uk

Contributors All authors managed the patient. Dr VV wrote the first draft, Drs SPH and NEJW modified the draft. All authors have approved the final version.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; internally peer reviewed.

► Additional videos are published online only. To view these files please visit the journal online (<http://dx.doi.org/10.1136/heartjnl-2012-302790>).

To cite Vassiliou V, West NEJ, Hoole SP. *Heart* 2013; **99**, 68.

Received 23 July 2012

Accepted 14 August 2012

Published Online First 13 September 2012

Heart 2013;**99**:68. doi:10.1136/heartjnl-2012-302790

REFERENCES

- 1 Kounis NG, Zavras GM. Histamine-induced coronary artery spasm: the concept of allergic angina. *Br J Clin Pract* 1991;45:121–8.
- 2 Kounis NG, Grapsas ND, Goudevenos JA. Unstable angina, allergic angina and allergic myocardial infarction. *Circulation* 1999;100:e156.



Kounis syndrome: not to be sneezed at

Vassilis Vassiliou, Nick E J West and Stephen P Hoole

Heart 2013 99: 68

doi: 10.1136/heartjnl-2012-302790

Updated information and services can be found at:

<http://heart.bmj.com/content/99/1/68.full.html>

These include:

Data Supplement

"Supplementary Data"

<http://heart.bmj.com/content/suppl/2012/12/14/heartjnl-2012-302790.DC1.html>

References

This article cites 2 articles, 1 of which can be accessed free at:

<http://heart.bmj.com/content/99/1/68.full.html#ref-list-1>

Email alerting service

Receive free email alerts when new articles cite this article. Sign up in the box at the top right corner of the online article.

Notes

To request permissions go to:

<http://group.bmj.com/group/rights-licensing/permissions>

To order reprints go to:

<http://journals.bmj.com/cgi/reprintform>

To subscribe to BMJ go to:

<http://group.bmj.com/subscribe/>