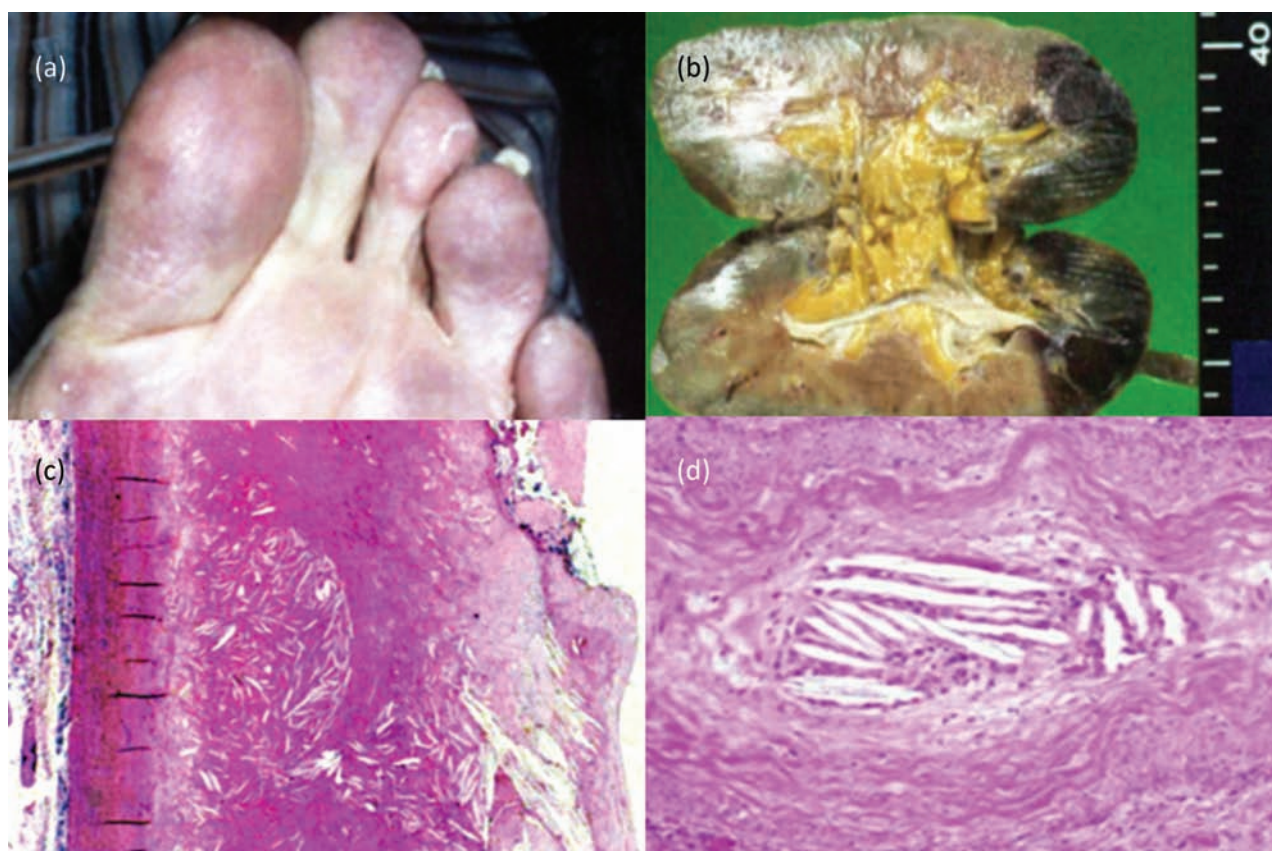


## Image of the month: Blue toe in a male with cholesterol embolisation syndrome

**Authors:** Kenichiro Arakawa,<sup>A</sup> Tadashi Konoshita,<sup>B</sup> Yasukazu Makino<sup>C</sup> and Tamotsu Ishizuka<sup>D</sup>



A 77-year-old man presented with peripheral oedema and was found to have impaired renal function. He had a background of hypertension, ischaemic heart disease and diabetes. Since a coronary artery bypass operation 3 years ago he had been treated with warfarin.

**Fig 1.** (a) In the course of admission (approximately 3 weeks), characteristic blue toe sign occurred at the toes. (b) Macroscopic autopsy revealed fulminant renal infarction at the lower part of the left kidney. (c) Microscopic histology revealed typical cholesterol crystals in the aorta and (d) in the renal arcuate artery.

**Authors:** <sup>A</sup>senior staff doctor (assistant), University of Fukui Faculty of Medical Sciences, Fukui, Japan; <sup>B</sup>associate professor, University of Fukui Faculty of Medical Sciences, Fukui, Japan; <sup>C</sup>associate professor, University of Fukui Faculty of Medical Sciences, Fukui, Japan; <sup>D</sup>professor, University of Fukui Faculty of Medical Sciences, Fukui, Japan

He was found to have an elevated serum creatinine (424.3 mmol/l) and eosinophilia (33% of white blood cell count of 4,900/mm<sup>3</sup>).

During his inpatient stay, he developed a characteristic blue toe sign in his toes (Fig 1a). Cholesterol embolisation was suspected and warfarin was stopped but the patient's renal function continued to deteriorate. Low-density lipoprotein

apheresis and continuous haemofiltration were started and the eosinophilia and acute kidney injury gradually improved. However, the patient unfortunately died 10 days after intensive treatment.

Post-mortem examination revealed fulminant renal infarction at the lower part of the left kidney (Fig 1b). Microscopic histology revealed typical cholesterol crystals in the aorta (Fig 1c) and the renal arcuate artery (Fig 1d).

Cholesterol embolisation syndrome (CES) is a systemic disease which occurs when cholesterol crystals and other contents of an atherosclerotic plaque embolise from a large proximal artery to smaller distal arteries, causing ischaemic end-organ damage.<sup>1</sup> Diabetes and increasing age are thought to be predisposing factors.<sup>2</sup> In this case, the trigger of cholesterol embolism was thought to be warfarin administration. To date, no specific diagnostic test, other than clinical signs and biopsy for CES has been developed.<sup>3</sup> Peripheral cutaneous involvements, such as blue toe is one of specific findings and a clue for prompt and accurate diagnosis. ■

## Acknowledgements

We thank Ai Sakai, Takahiro Nakaya, Katsushi Yamamoto, Mika Yamada, Mai Ichikawa and Michiko Imagawa for their involvement in case management.

## References

- 1 Fukumoto Y, Tsutsui H, Tsuchihashi M, Masumoto A, Takeshita A. The incidence and risk factors of cholesterol embolization syndrome, a complication of cardiac catheterization: a prospective study. *J Am Coll Cardiol* 2003;42:211–6.
- 2 Modi KS, Rao VK. Atheroembolic renal disease. *J Am Soc Nephrol* 2001;12:1781–7.
- 3 Saric M, Kronzon I. Cholesterol embolization syndrome. *Curr Opin Cardiol* 2011;26:472–9.

**Address for correspondence:** Dr T Konoshita, Third Department of Internal Medicine, University of Fukui, Faculty of Medical Sciences, 23-3, Matsuokashimoaizuki, Eiheiji, Fukui, 910-1193, Japan.

**E-mail:** konosita@u-fukui.ac.jp

## Book reviews

### *Advancing the human right to health*

**Zuniga JM, Marks SP and Gostin LO, eds. Oxford: Oxford University Press, 2013. 480 pp.**

This substantial volume commemorates the 65th anniversary of the Universal Declaration on Human Rights. As Paul Hunt (former special rapporteur to the United Nations on the right to health) writes in his foreword, since that Declaration ‘the right to the highest attainable standard of health has come a long way [but] the challenges remain enormous and diverse’.

Though the three editors are all US-based, they have recruited authors from several European countries as well as from Africa, South America, Japan and Haiti. Most are academics in law or in public health. The book has two very substantial sections – one on ‘the right to health in action’ (which provides a series of country-based overviews of recent experience) and one on ‘challenges and opportunities’, which is disease- rather than country-based. These are framed by an opening section on ‘the right to health in perspective’ and a concluding chapter on ‘the consequences of failure’.

The opening chapter (by Stephen Marks, one of the book’s editors) provides a lucid but somewhat acronym-laden summary of the international legal framework and concludes that whereas ‘every country has accepted that human rights are universal’ and that all are ‘bound by at least one treaty containing a provision on the right to health’, these rights are ‘of little value without effective means of promotion and protection at the national and international levels’.

In Section 2, Cabrera and Ayala then examine the potential of litigation to advance health rights and the potential for courts to undermine as well as to promote these rights. Nygren-Krug emphasises the need to enhance accountability at international, national and local levels. A provocative chapter by Pablos-Méndez and Stone highlights the ‘moral imperatives’ towards health and equity and the potential synergy between promoting health and strengthening nations. Examples cited include responses to conflict (as in Timor-Leste) and to specific health challenges (such as HIV in Botswana). Friedman and Gostin then make the case for adopting a ‘Framework Convention on Global Health’ with the aim of setting a global health agenda and reducing health inequalities.

The third section provides summaries of current health and human rights legislation in Haiti, Ghana, India, South Africa, the Philippines, China, Brazil, Peru, Mexico, the UK, Japan and the US. These are useful sources of reference but make somewhat turgid reading. It would have been helpful to have more information on the extent to which newer legislation is (or is not) being translated into better and more equitable standards of healthcare.

To my mind, Section 2 is the most useful section of the book. Baer *et al* examine human health rights through the lenses of HIV, tuberculosis and malaria and emphasise the potential health benefits to HIV care of tackling discrimination, to malaria prevention of promoting the right to food, water, sanitation and housing and that attempts to control TB through involuntary hospitalisation and isolation breach individual