FIGURE 2. A, Fibers of tunica media of the ascending aorta mixed with areas of myxoid degeneration, no pigment (hematoxylin–eosin, 200×). B, Different area of the aortic valve with clouds of pigment (circled) (hematoxylin–eosin, 100×). C, High-magnification view of pigmented area on the aortic valve (arrow) (hematoxylin–eosin, 400×).

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EDITORIAL COMMENTARY

Blue-black pigmentation of heart valves. Is it as evil as it looks?

Tomohiro Tsunekawa, MD, PhD,^a and Kent W. Jones, MD^b

From the ^aDepartment of Cardiovascular Surgery, Gifu Heart Center, Gifu, Japan; and ^bDivision of Cardiovascular and Thoracic Surgery, Intermountain Medical Center, Murray, Utah.

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Address for reprints: Tomohiro Tsunekawa, MD, PhD, Department of Cardiovascular Surgery, Gifu Heart Center, 4-14-4, Yabuta-minami, Gifu, Gifu, Japan (E-mail: ttsune0707@hotmail.co.jp).

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Minocycline is a semisynthetic tetracycline used for the treatment of a wide range of various infections. Although minocycline has proven to be a very safe, and more recently comes under the spotlight because of its cardioprotective potential,¹ various drug-specific side effects have been reported (ie, tissue pigmentation, systemic lupus erythematosus-like syndrome, autoimmune hepatitis, and polyarteritis nodosa).² Pigment deposition in human tissue can occur in association with long-term minocycline therapy. Most of the pigmentations involve the skin, thyroid gland, sclera, nails, and bones.³ Pigmentation rarely is reported in heart valves.

So far, there are 3 clinical reports, including our experience, and 1 cadaveric report that describe minocycline-induced heart valve pigmentation.^{4–7} In this issue of the *Journal*, Cohen and colleagues⁸ added another experience.

The characteristic histopathologic findings of minocycline-induced pigmentation are deposition of blue/black, Fontana-Masson, and Perl's positive granules deposited both within macrophages and free in the valvular

Tomohiro Tsunekawa, MD, PhD, and Kent W. Jones, MD

Central Message

Pigmentation in human tissue can occur after long-term minocycline therapy. Pigmentation is reported rarely in heart valves. Long-term durability of the pigmented heart tissues is still unclear.

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connective tissue.^{6,7} Although the earlier literature speculated that minocycline does not seemingly induce functional impairment of the heart valves,^{4,5} long-term durability of the pigmented heart valves is still unclear. Cohen and colleagues⁸ did not choose valve-sparing surgery because of the uncertainty of “black” aortic valve durability. Even after replacing the aortic valve (or aortic root), we still have concerns about the future incidence of prosthesis detachment. Furthermore, we also will face a tough decision whether to repair or replace when we encounter black pigmented mitral valves. Although there are no reports regarding the long-term function of the prosthesis implanted in the black-pigmented aortic valve apparatus, the latest echocardiographic study of our patient showed no evidence of prosthesis detachment at 1 year after the operation. Our personal opinion is that the minocycline-induced black pigmented valve is not as evil as it looks.

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