

# Mycobacterium chimaera infection after cardiac surgery Catastrophic effects of delayed diagnosis

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*To the Editor:*

The interesting and timely paper by Cain et al.<sup>1</sup>, in press in the *Journal of Cardiac Surgery*, provides important details concerning the devastating consequences of *Mycobacterium chimaera* (*MC*) infection. In their patient extreme fragility of the mediastinal tissues was observed after repair of an acute aortic dissection; during follow-up multiple reoperations were required to treat recurrent dehiscence of the aortic grafts. Despite repeat explantation of foreign materials infection persisted with mediastinitis and eventual systemic diffusion with fatal outcome.

*MC* infection after open cardiac surgery using cardiopulmonary bypass has been recently reported as a clinical outbreak worldwide and identified as originating by contaminated water in heater-cooler units<sup>2</sup>. Current experience shows that *MC* causes a slow-growing and extremely difficult to treat infection with an incubation period which has been recently demonstrated to be as long as >12 years<sup>3</sup>.

We have recently treated a patient, quite similar to that reported by Cain et al.<sup>1</sup>, who presented with a pseudoaneurysm of the distal suture line twelve years after repair of type A aortic dissection<sup>4</sup>. At first operation replacement of the ascending aorta and hemiarch using a Djumbodis<sup>®</sup> dissection system (*Saint Come-Chirurgie, Marseille, France*) was performed. At reoperation extremely fragile tissues were noted and, after removing the metallic stent, the aortic arch was replaced with a frozen elephant trunk technique. Cultures of the excised material grew *MC*. In this case we hypothesized that the stent played an important role in the onset of infection for at least 2 reasons: presence of foreign material in the blood stream and injury to the aortic wall by the edges of the stent. The case described by Cain et al.<sup>1</sup> also supports our belief that extreme fragility of the aortic tissues caused by *MB* was a further important factor in the occurrence of this complication.

Interestingly, a delayed diagnosis occurred in both cases; this most likely played a critical role in favouring development of extra-cardiac manifestations of the disease, in reducing the effectiveness of antibiotic therapy due to immunologic impairment and causing a negative outcome in both patients.

*MB* infection may have different locations ranging from single-organ to systemic manifestations<sup>5</sup>. When it involves the mediastinum and particularly the major vascular structures often results in life-threatening complications despite proper antimycobacterial treatment. An early diagnosis, even with significantly extended surveillance, appears extremely difficult due to slow-growing and long incubation period of *MB*.

Although no specific guidelines are so far available, intra-operative prevention with improvement of setting and development of heater-cooler units is mandatory and should be based on specific recommendations<sup>5</sup>.

## REFERENCES

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