It is not just the driveline

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Left ventricular assist devices are among the great human achievements of the 20th century. Rivaling heart transplantation, the number of technical challenges both seen and unforeseen have been significant. But item by item, surgeons and engineers have found solutions. There are persistent problems with biocompatibility, external power sources, and more difficult problems of long-standing univentricular support. The current case report¹ is a reminder that basics of pump design and unimpeded outflow are important. Forever.

Understandably, our initial focus in the field was bleeding, right ventricular function, and just getting out of the hospital. As patients lived longer on device support, the attention shifted to chronic driveline infections and the limitation of externalized power sources. Now our plenary sessions are concentrating on gastrointestinal bleeding, pump thrombosis, and chronic right ventricular failure.

Now this. The authors¹ make a compelling argument that the device was implanted correctly and the outflow graft was not twisted at the time of implant. Moreover, the device functioned well for a long time. And then it did not. Moreover, it is unclear how it happened.

Despite the promise of a manufactured solution to a huge public health problem, left ventricular assist devices will

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Central Message

Despite significant improvements in pump design that have focused biocompatible surfaces, the present case report is a reminder that even the most sophisticated designs may fail under physiologic conditions.

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continue to have a limited role in the treatment of heart failure patients. As this case report illustrates,¹ there is a dynamic relationship between these devices and their human hosts. All the parts have to work. Forever.

Reference

1. Gröger T, Kaufmann F, Dreyse S, Falk V, Krabatsch T, Potapov E. Late post-pump blood flow obstruction in the HeartMate 3 left ventricular assist device: The unusual case of a twisted outflow graft. *J Thorac Cardiovasc Surg*. 2018; 155:e33-5.