

## Caught, Trapped, and Dislodged: A Unique Case of Wire Tip Entrapment, Coil Unraveling, and Unexpected Migration

Bayushi Eka Putra<sup>1</sup>, Shoichi Kuramitsu<sup>1</sup>, Takuro Sugie<sup>1</sup>, Ivan Pratama<sup>1</sup>, Yutaka Tadano<sup>1</sup>, Umihiko Kaneko<sup>1</sup>, Tsuyoshi Takeuchi<sup>1</sup>, Daitaro Kanno<sup>1</sup>, Dafsah Juzar<sup>2</sup>, Yoshifumi Kashima<sup>1</sup>, Tsutomu Fujita<sup>1</sup>

<sup>1</sup>Department of Cardiovascular Medicine, Sapporo Cardiovascular Clinic, Japan

<sup>2</sup>Department of Cardiology and Vascular Medicine, National Cardiovascular Centre, Pusat Jantung Nasional Harapan Kita, Jakarta, Indonesia

Wire tip entrapment within stent struts is a rare PCI complication. We report a case where a guidewire tip became trapped in the struts of a Xience Skypoint stent during side branch rewiring. Unexpectedly, high-pressure balloon inflation during proximal optimization technique (POT) led to successful release of the wire tip. This case highlights a unique entrapment mechanism related to stent architecture and proposes POT as a potential bailout strategy.

### KEYWORDS

Percutaneous coronary intervention, wire entrapment, stent strut, proximal optimization technique, bailout strategy, guidewire complication.

### INTRODUCTION

Jailed wire entrapment is an extremely rare complication with an incidence of 0.4%–1.0%.<sup>1</sup> The prevalence is increasing as percutaneous coronary intervention (PCI) procedures become increasingly complex. However, most documented cases describe the entrapment of the wire body rather than the tip of the wire. Consequently, cases of wire tip entrapment have not been reported as frequently due to their rarity.

In this case report, we present a rare instance of guidewire tip entrapment during PCI involving severe calcification. Uniquely, the entrapped wire tip was released through balloon inflation during a proximal optimization technique, which was not originally intended to address the wire tip entrapment.

### CASE REPORT

An 84-year-old male with unstable angina pectoris underwent coronary angiography, revealing significant stenosis at the left main-left anterior descending artery (LM-LAD). Intravascular ultrasound (IVUS) confirmed a well-expanded stent, severe calcification, and plaque ruptures at the left main and LM-LAD bifurcation. A non-compliant (NC) balloon (4×15 mm) was inflated at 16 atm but failed to fully expand due to severe calcification. Intravascular lithotripsy (IVL) (4.0×12 mm, 80 pulses) was performed, followed by deployment of a Xience SkyPoint 4×33 mm drug-eluting stent (DES) at 14 atm and post-dilatation with a 5×15 mm NC balloon at 12–16 atm.

During rewiring (Sion Blue) of the left circumflex artery (LCx) for a kissing balloon technique, the wire tip became trapped within the stent struts. Aggressive retrieval using a microcatheter led to spring coil unraveling in the aorta, leaving only the coil tip trapped. A final re-POT was performed using a 5.5×12 mm NC balloon at 22 atm. Unexpectedly, the previously trapped wire tip?resistant to microcatheter retrieval?became dislodged proximally into the aorta during re-POT procedure. It was later located in the distal aorta and successfully retrieved with a snare device.