Peer Review File

Article Information: https://dx.doi.org/10.21037/cdt-21-707

Reviewer A:

This is a nice case report describing an uncommon, but potentially fatal complication of CTO-PCI. Conservative management of septal hematoma following retrograde CTO recanalization is worth considering when hemodynamically tolerated. The manuscript is overall well written and nicely presented. I have only a few minor comments:

1. It would be incremental to show the angiography which documented the perforation/fistula.
[Response] Thank you for your comment.
We added a new video data in "Case presentation" section. Please see Page 7, line 4 and Movie Ⅲ.

2. There are some typos in the text that should be corrected.
[Response] Thank you for your comment.
The language and grammar have been carefully checked and revised to eliminate the error in the revised manuscript.

Reviewer B:

Please provide some procedural detail so the reader can understand mechanism of collateral channel injury and potential strategies to avoid such complication.

1. Size and tortuosity of septal channel.
[Response] Thank you for your question.
The preoperative angiography revealed the septal collateral branches were nontortuous and measured as 0.3-0.5mm. And according to Werner classification, type-CC2 septal collateral consisting of continuous, small side branch-like size of the collateral was selected. We added the description in "case presentation" section. Please see Page 5, line 16-19.

2. Guide wire and microcatheter used
[Response] Thank you for your question. The used guidewires and microcatheter were as follows:
The Launcher: 7 Fr Brite-tip XB 3.5 (Cordis, Miami, FL);
The guidewire: Sion black (Asahi Intecc, Nagoya, Japan); Pilot 200 (Abbott); RG3 (Asahi Intecc);
The microcatheter: 150 cm Corsair (Asahi Intecc).
We added the details in "Case presentation" section. Please see Page 5, line 19- Page 6, line 13.

3. Was balloon predilatation required to advance microcatheter?
[Response] Thank you for your question.
The septal branch was successfully passed with the Sion black guidewire. And the microcatheter was then followed successfully. After the proximal advancement was failed, reverse controlled antegrade and retrograde tracking was promptly planned. And after inflating a balloon over the antegrade wire, the retrograde Pilot 200 guidewire was advanced into the space created by the balloon. The guidewire and microcatheter were advanced into the antegrade guide finally.

We added the details in “Case presentation” section. Please see Page 5, line 19- Page 6, line 13.

4. Was there difficulty advancing microcatheter to antegrade guide for wire externalization?
[Response] Thank you for your question.
The intraplaque crossing was attempted and successfully achieved in the distal by changing the guidewire Sion black(Asahi Intecc, Nagoya, Japan) into Pilot 200(Abbott). However, the proximal advancement was failed. Reverse controlled antegrade and retrograde tracking was promptly planned. After inflating a balloon over the antegrade wire, the retrograde Pilot 200 guidewire was advanced into the space created by the balloon. The guidewire and microcatheter were advanced into the antegrade guide, the retrograde guidewire is removed, and RG3 (Asahi Intecc) was advanced until it exits from the Y connector of the antegrade guide catheter. After successful lesion crossing and balloon expanding, the RCA was stented with drug-eluting stents from distal to proximal
We added the details in “Case presentation” section. Please see Page 6, line 6- 13.

5. What was the rationale for the interventional management strategy once the complication was discovered? Was there any attempt to drain the hematoma into a cardiac chamber using guidewire and/or balloon for fenestration?
[Response] Thank you for your question.
The perforation type was determined based on the Ellis classification: Ⅰ, extraluminal crater without extravasation; Ⅱ, pericardial or myocardial blushing without contrast jet extravasation; Ⅲa, extravasation through frank (> 1 mm) perforation; Ⅲb, "cavity spilling", which refers to perforations with contrast spilling directly into either the left ventricle, coronary sinus or another anatomic circulatory chamber. Patients who suffered type Ⅰ or Ⅱ CP showed a tendency of good prognoses, while those with type III perforations, which locate at epicardial collaterals, had a higher mortality rate. As epicardial collaterals are fragile and associated with high mortality, where CP communicates with the pericardial cavity, which, if left untreated, may quickly lead to pericardial tamponade and hemodynamic failure.
In our case, delayed Ellis type Ⅲb coronary artery perforation at the collateral branch might be caused by mechanical stress. Delayed perforation can result in a catastrophic event after the implantation of coronary stents. Fortunately, the perforation led to a hematoma that extravasated into the left ventricle. The patient was hemodynamically stable and required no special treatment. Conservative management was delivered with intensive monitoring.
We added the details in “Discussion” section. Please see Page 10, line 12- 18.