

JCK Oral

JCK Oral 3 (II-JCKO3)

Cardiac Surgery

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Sat. Jul 8, 2017 1:50 PM - 3:20 PM ROOM 3 (Exhibition and Event Hall Room 3)

1:50 PM - 3:20 PM

[II-JCKO3-06] A Novel Arterial Cannulation Technique for Selective Regional Cerebral Perfusion in Aortic Arch Surgery in Infants

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Background: A selective regional cerebral perfusion (SRCP) has been widely adopted for brain protection in neonatal or infant aortic arch surgeries. We have developed a specially designed cannula tip that allows bidirectional blood flow and provides secure positioning of the polytetrafluoroethylene (PTFE) tube graft at the innominate artery.

Methods: Since January 2015, aortic arch reconstructions using a new arterial cannulation technique have been performed in 51 consecutive neonatal or infant patients. The median age and weight at the time of operation were 7 days (1-118 days) and 3.19 kg (1.87-5.84 kg), respectively. A longitudinal purse-string suture was placed at the innominate artery above the innominate vein, and the newly developed cannula tip connecting PTFE tube graft was introduced into the purse-string suture site after clamping of the innominate artery. The PTFE tube graft was then connected to the arterial cannula.

Results: There was no bleeding in the arterial cannulation site during the operation in all cases. Mean cardiopulmonary bypass time was 142.2 ± 47.5 min, and mean SRCP time was 34.0 ± 9.4 min. There was no patient who had an event of high pressure more than 200 mmHg at the operation. There was no cannulation site stenosis or aneurysmal change in postoperative CT angiography in all cases for a mean follow-up of 11.5 ± 7.2 months. No neurologic dysfunction was noted after the operation.

Conclusion: Our arterial perfusion system employing a specially designed cannula tip enables performing SRCP through the innominate artery in an easier and safer manner.