A 31 years old female was admitted with right lower extremity weakness. Brain MRI showed multiple scattered embolic infarctions on left middle cerebral artery (MCA) territory with A-com aneurysm. Transfemoral cerebral angiography was tried and failed due to stenosis of distal aortic arch (Fig. 1). Therefore, cerebral angiography was performed through right radial artery and revealed 3.2×2.5 mm-sized anterior communicating (A-com) aneurysm with interrupted aortic arch (IAA) and complete obliteration of left MCA (Fig. 2A, B). For embolization of A-com aneurysm, it was difficult to access into the tortuous common carotid artery (CCA) via radial artery and transcarotid approach was decided. Under ultrasonographic guidance, direct puncture of the CCA was done using micropuncture needle (Cook, Bloomington, IN) and a .035 hydrophilic guidewire (Terumo, Tokyo, Japan) was navigated into the distal cervical intracranial artery (ICA) under road mapping control. Thereafter, a 5-Fr short sheath introducer (5 cm, St. Jude medical, MN) was carefully advanced into the origin of the left ICA. Once the carotid sheath was placed in position, IV anticoagulation was initiated (a bolus of 5000 IU of heparin and then an immediate infusion of 3000 IU/hr). Next, a 5-Fr Envoy guiding catheter (Cordis, Miami lake, FL) was advanced into the proximal cervical segment of the left ICA and a Prowler microcatheter was navigated into the aneurysm sac. The aneurysm was subsequently embolized with Trufil DCS coils (Cordis, Miami lake, FL). Control angiogram showed successful packing of the aneurysm.
sac with patent parent arteries. After heparin reversal with protamine sulfate, manual compression was applied at the puncture site of the CCA for 10 minutes. After confirmation of hemostasis without hematoma, the patient was extubated and sedated in the intensive care unit.

**DISCUSSION**

In isolated IAA, the ductus arteriosus is obliterated in fetal life and collateral circulation is present at birth. In cases of IAA, central nervous system disturbance has been attributed to hypertensive encephalopathy or steal phenomenon related to collateral flow. In our case, incidentally found intracranial aneurysm would be formed secondary to hemodynamically induced degenerative vascular damage (3).

Direct puncture of the CCA is required for access to the tortuous artery or interruption of aorta. For endovascular treatment of cerebrovascular diseases, vessel tortuosity may prevent successful access via the femoral artery and, in some circumstance, direct
puncture of the supra-aortic vessels is advocated to access the targeted lesion (4). But sheath removal from carotid artery is critical and the patient is exposed to neck hematoma and tracheal compression if manual compression is applied. Moreover, prolonged manual carotid compression can be deleterious to the patient’s neurologic status because cerebral flow impairment may lead to brain ischemic insult. Therefore we may consider hemostatic closure device as an alternative to manual compression.

References

Key Words: Aneurysm; Aortic arch/interrupted; Carotid puncture; Embolization