Clip wrapping for partial avulsion of the aneurysm neck

Technical note

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An intraoperative aneurysm rupture due to a tear at the aneurysm neck can be a tricky complication to manage. The authors describe a simple technique found to be useful in such a case.

KEY WORDS • aneurysm • complication • subarachnoid hemorrhage • intraoperative aneurysm rupture

An intraoperative aneurysm rupture related to partial avulsion of the aneurysm neck can be a difficult problem to solve. We illustrate a simple technique that we have found to be useful in treating the partial avulsion of an aneurysm neck.

Case History

This 60-year-old woman presented with a Hunt and Hess Grade 2 subarachnoid hemorrhage from a ruptured ACoA aneurysm (Fig. 1). She was taken to surgery to undergo clipping of the aneurysm. During clip placement, a partial avulsion occurred at the junction of the aneurysm neck and the ACoA (Fig. 2). The avulsion was tamponaded with a swathe of cotton wrapped around the aneurysm neck so that gentle pressure would be applied to the avulsed portion of the vessel (Fig. 3 left). A clip was then applied to the aneurysm neck (Fig. 3 right). The clip partially covered the wrapped cotton only in that portion closest to the aneurysm (Figs. 3 right and 4). Thus the cotton was held in place and compressed against the hole in the artery–neck complex by the clip, which was only partially applied over the cotton (Figs. 3 and 4). Intraoperative angiography demonstrated no evidence of a residual aneurysm and patency of the parent vessel (Fig. 5). One year later, the patient has returned to her prior occupation. A control angiography is planned to be performed in 2 years.

Discussion

Intraoperative bleeding related to partial avulsion of an aneurysm neck can represent a difficult clinical problem to treat. In some cases, clipping alone can supply enough pressure to the avulsed segment. Often, however, including the avulsion in the clip under such circumstances compromises the parent vessel. The simple technique described is suitable for fixing partial avulsion of an aneurysm neck. Of course, when using this technique, one must ensure that the clip and cotton do not obliterate or compromise the parent vessel.

\[ A \text{CoA} = \text{anterior communicating artery.}\]

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