MANAGEMENT OF GIANT ANEURYSMS

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SUMMARY — Technical aspects and anatomical difficulties involved in the management of this entity and the risks associated give giant aneurysms a special place in the treatment of aneurysms as a whole. The direct attack needs careful planning and the right choice of instruments, especially clips. In spite of the progress in recent years, the rate of mortality is still very high. The indirect approach requires in many cases the occlusion of a major cerebral vessel, which in some cases could result in cerebral ischemia. However, by means of extra-intracranial by-pass operation this risk could be reduced. The method of balloon embolisation has progressed recently. This procedure brings the least discomfort to the patient. Results of this method of treatment must be observed critically for future assessment.

Conduita em aneurismas gigantes.

RESUMO — Os aneurismas gigantes merecem atenção especial no que se refere a seus aspectos anatômicos, riscos e, principalmente, dificuldades técnicas ao seu manuseio. A abordagem de tais aneurismas necessita de planejamento adequado e, sobretudo, de material apropriado para sua clipagem. A mortalidade ainda permanece alta, apesar dos recentes progressos observados nos últimos anos. Por outro lado, a abordagem indireta requer, muitas vezes, occlusão de um vaso cerebral importante, o que pode acarretar isquemia cerebral. Entretanto, por anastomose extra-intracraniana tais riscos podem ser diminuídos. O método de embolização por balões tem-se mostrado eficaz. Este processo oferece menor incômodo ao paciente. Os resultados deste método devem ser observados criteriosamente para melhor avaliação no futuro.

Giant aneurysms are defined as those larger than 25mm in diameter. In the literature the frequency of occurrence of these malformations is rated between 3% and 6%. In our own material we found giant aneurysms at the rate of 3.8%. According to Koos about 10% of all giant aneurysms are to be found among children, otherwise giant aneurysms are mostly found between the 3rd and 6th decade of life.

Three illustrative cases are reported in this paper.

CASE REPORTS


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Case 3 — SR, female, 62 years old (Fig. 3). First admission: June, 1987: lack of concentration, drowsiness. CT: 1. clot; 2. hydrocephalus, ventriculo-peritoneal by-pass. Angiography: basilar aneurysm (>25mm) (Copies of angiograms, Inselspital, Bern). Second admission: August, 1987; epileptic seizures, coma, decerebration; she died at 19:00h of the same day.

COMMENTS

In reviewing the literature and our own material we found out that there does not seem to be a special region of occurrence of these giant aneurysms. They seem to be in all the areas where small aneurysms are also discovered.

Clinical pattern of behaviour — About 60% of all giant aneurysms show intraaneurysmal thrombosis. The grade of thrombosis is most likely dependent on: a. reduction of turbulence in the aneurysm sac; b. tendency of the thrombus to stick to the aneurysm wall and grow; c. the size of the opening between the aneurysm sac and the vessel. Pia suggested, in 1980, quite rightly that giant aneurysms be typed according to the form and size of the thrombus. He put them in 6 main categories. Intracavernous giant aneurysms do not bleed. The intracranially localised giant aneurysms have a tendency to bleed in 40% in the supratentorial region and 60% in the posterior fossa. When they do not bleed these giant aneurysms depending on the localisation will either present with: 1. cranial nerves symptoms; 2. tumor-like space occupying symptoms, which are rather typical; 3. pain in form of headaches due to nerve compressions; 4. epileptic fits in rare cases.
Fig. 2 — Case 2 (KH): 1. aneurysm of the left carotid artery (infraclinoid); 2. after balloon occlusion; 3. patient presenting with the same aneurysm three months after balloon occlusion.
Management:

1. Direct: Yasargil states, as our own experience shows, that the early results of surgical intervention directed at these lesions were truly disappointing with between 60-80% of the patients dead within 1 year\textsuperscript{13,14}.

2. Indirect: As an alternative strategy the treatment of these giant aneurysms would involve the occlusion of the ICA with or without by-pass or embolisation\textsuperscript{10}:

   a. Occlusion of the ICA is recommended proximal and distal of the aneurysm if angiographic studies reveal collateralisation from the other hemisphere. Occlusion of the ICA must be preceeded by occlusion tests either by means of a ballooncatheter or as recommended by Koos with Silverstone-clip\textsuperscript{7}. During the phase of temporary occlusion CBF and EEG should be monitored to be able to follow the behaviour of the brain to see to what extent the patient tolerates the occlusion\textsuperscript{1,5,11,12}.

   b. In case of insufficient collateralisation ligation of the ICA and extra-intracranial by-pass is the treatment of preference\textsuperscript{6,7,11,12,14}. In the course of and after this procedure 15-30\% of the patients may develop cerebral ischemia\textsuperscript{3}.

   c. In recent years yet another variety of treatment by means of catheterisation and balloon embolisation of giant aneurysms has made rapid development especially in the field of invasive neuroradiology. This method needs further study for future assessment\textsuperscript{2,9}.

REFERENCES


