



Introduction

packing density of coiled cerebral aneurysms can affect the outcome of treatment including regrowth, recurrence and retreatment. We studied the main factors determining the packing density volume of the interventionally treated aneurysms regarding types of the used coils as well as presence or absence of assisting techniques such as balloon remodeling and/or stent assistance.

Methods

this is a retrospective analysis of 354 consecutively coiled aneurysms. We divided them into Ruptured and Unruptured aneurysms and each group has been further subdivided into those treated with either Hydrogel or bare platinum coils. Therefore, we had four separate groups: Group 1 (Ruptured; Bare platinum, 95 aneurysms), Group 2 (Unruptured; Bare platinum, 87 aneurysms), Group 3 (Ruptured; Hydrocoils, 85 aneurysms), and Group 4 (Unruptured; Hydrocoils, 87 aneurysms). In these 354 aneurysms, 175 were treated with coils alone, 92 with coils and balloon remodeling, and 87 with stent assisted coiling. Volume fill and packing densities were calculated by Angiocalc program

Results

As shown in the table, although the aneurysms treated with hydrocoils were of larger sizes than those treated with bare platinum coils, they had greater packing densities. Also, assisting techniques including balloon remodeling and stent assistance can modify the packing density outcome. In all of the four subgroups, stent assistance increased the packing density even in aneurysms with larger sizes.

Conclusions

packing density determining factors can be divided into non-modifiable factors, related to the aneurysm itself, including the aneurysmal size and its state weather ruptured or not and modifiable factors, related to the treatment, and include the type of used coils and the type of assisting technique, if present, weather it is balloon remodeling or stent assistance. It is our recommendation to use Stent-assisted Hydrogel coated coils in huge aneurysms or aneurysms with unfavorable geometries.

Learning Objectives

By the conclusion of this session, participants should be able to: 1) Know the importance of coils packing density in interventional treatment of cerebral aneurysms ..., 2) Discuss, in small groups,the factors that directly determine this packing density, 3) Identify an effective treatment