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Indications for embolisation with the Amplatzer® Vascular Plug 4 $\,$

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Purpose: To expand the indications for the use of the Amplatzer® Vascular Plug 4 (VP4) instead of other embolization materials such as coils or glue, by evaluating our own experience and reviewing the literature.

Materials and methods: A complete review of the literature was made and the results of our own experience with 11 embolization procedures were summarized. These included 2 embolizations of the iliac artery (EIA for a retroperitoneal bleeding and IIA for an arteriovenous fistula), 5 of the gastroduodenal artery (in preparation of selective internal radiotherapy), 1 of the pulmonary artery (arteriovenous malformation), hepatic artery (aneurysm), renal artery (arteriovenous fistula) and splenic artery (for the reduction of venous flow in a patient with progressive swelling of gastric varices).

Results: In our patient group the plug was successfully placed in 10 out of 11 patients without complications. In 1 case, the plug couldn't be placed because of excessive resistance entering the coeliac trunk using a flexible 4F catheter. One additional coil was needed during the embolization of the splenic artery in order to obtain a satisfying

reduction of flow. The occlusion times ranged from 1 to 10 minutes. Only a few studies describe the use of the VP4. Varying indications are reported. Most of them discuss the benefits of using the plug over coils or glue in certain situations.

Conclusion: The VP4 can be used in a broad range of indications and in most cases it allows a fast and safe embolization. The cost-benefit of using the VP4 over other materials has to be determined in each case separately.

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