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Hemostasis in neurosurgical procedures is crucial, particularly in the setting of brain parenchyma lesions. After conventional monopolar coagulation, introduced by Bovie and Cushing in the first part of the last century, has greatly facilitated neurosurgical procedures, further refinement introduced by Malis in the way of bipolar coagulation parallel to the introduction of microneurosurgery by Yasargil has further improved quality of neurosurgical treatment.

The advantages of bipolar coagulation are clear: the surgeon is able to stop bleeding from vessels of different sizes by squeezing the tissue, thereby obturating any vessel lumen and simultaneously gluing the walls together by heat application. Also, the bipolar forceps has become a very popular instrument for dissection. The disadvantages of bipolar coagulation, on the other hand, are the need to touch a tissue and the difficulty in cauterizing broader areas of tissue e.g after tumor removal.

On the other hand, cold plasma coagulation (CPC) using a newly designed instrument set (Soering Comp,)allows for non-touch no heat coagulation of broad surfaces after removal of gliomas, meningiomas as well as arteriovenous malformations. In the latter instance, it is possible to use this instrument to obtain a cleavage plane on the level of the arachnoid space between the AVM and the surrounding tissue. Due to its limited development of heat it is also possible to use it on cranial nerves and small vessels without deeper penetration of thermal damage.

Examples of the use of the CPC will be presented as short surgical videos as well as our clinical experiences.