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Application of Cold Plasma Coagulation in Neuro Surgery

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During the time from 2002 until 2004, 46 patients were operated in the clinic for Neuro surgery by using the Cold Plasma Coagulation (unit CPC Söring, Germany).

The Cold Plasma Coagulation was used on patients having benign as well as malign brain tumors in the supratentorial and infratentorial area at a ratio of 1/3.

The use of Cold Plasma Coagulation offers the possibility to achieve sufficient hemeostases without the use of additional styptic resources as well as no intraoperative time loss.

Often, operation times -needed to achieve hemostases of parenchyma bleedings- are considerably reduced.

The cell damaging effect of Cold Plasma Coagulation in modern medicine is currently evaluated.

During the resection of a meningioma Cold Plasma Coagulation was used to devitalize the tumor matrix. The penetration depth was always within the range of 10 to 20µm. Due to this the risk of a perforation or deformation of the dura could considerably be reduced.

During removal of vicious brain tumors large resulting wound areas were coagulated with Cold Plasma to achieve hemostases. It was proven histologically that by using different power levels of the CPC units the depth of cell destruction could be varied.

The expansion of the coagulation necroses in the cell layers depended on the power setting and resulted in dimensions of 10 to 30 µm.

During the use of the device in our clinic we never found any complication caused by Cold Plasma Coagulation neither within short term nor within long term.