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Stereotactic radiosurgery with the usage of different kinds of radiation has been of great importance in the treatment of non-operating arteriovenous malformation (AVM) of the brain for the last three decades. Proton beams have unique physical properties that are favorable for stereotactic radiosurgery or conformal radiation therapy: small lateral divergence, sharp lateral penumbra, final and easy controlled range in tissue, depending of beam energy and tissue density, increasing of dose deposition at the end of range, so called Bragg peak. Modern and up-to-date technology of three-dimensional proton radiosurgery AVM of the brain which allows irradiating accurately AVM of the brain of any size, shape and location, was worked out and clinically approved in Medical Technical Complex after 2001 year. International report was used for the treatment of patients, according to it the target of irradiation was included into 70-80% isodose. The absorbed doses made 25 Gy-equivalent in the isocenter point (1 Grey-equivalent equals 1 Gy physical, multiplied by the relative biological effectiveness of the proton, which is 1.1). Irradiation treatment was conducted within 2 session for the two successive days. Proton radiosurgery based on this new technology was conducted on 39 patients suffering from AVM of the brain. The volume of the targets of irradiation was from 1.5 to 82.1 cm<sup>3</sup>. Early result demonstrated that developed technique of proton irradiation allows to deliver proton dose to the target volume precisely.