

First experience on use of cold plasma coagulation in general surgery

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The problem of bleedings still remains a vital problem in contemporary surgery. To abate loss of blood during the surgical operation, to restrain bleeding correctly in proper time are considered to be the main indications of the surgeon's skill.

Introduction of cold plasma coagulation technique into surgical practice makes the work of the surgeon significantly easier. The technique being based on RF currents, its development has brought to creation of argon coagulators. They optimized surgical procedure on parenchymatous organs making the practice to safe and effective. It also makes possible to restrain diffuse capillary bleeding.

The invention of cold plasma coagulation and its introduction into practice first of all promotes progress in neurosurgery as this is the field where the main functional property of the method is essentially realized. The main positive characteristic of cold plasma coagulation is the absence of ion conductivity currents passing through patient's body, that is why it is claimed in different spheres of surgery as well and it is proved by the publications of different authors.

Our experience on CPC use has been obtained on the apparatus manufactured by Söring company (Germany). It is based on the surgeries performed on account of

- gastrointestinal tract tumors (18)
- hernial repair of different localization (57)
- gallstone disease (12)
- benign tumors of skin and subcutaneous fat (24)
- hemorrhoid (8)
- thyroid gland neoplasms (15)
- obliterating atherosclerosis of lower extremities (sympathectomy and shunting) (19)

Blending together both classic bipolar and cold plasma coagulation CPC apparatus verified favourable reports of other researchers.

The extraordinary effectiveness of cold plasma coagulation mode revealed at the treatment of surgically removed gall-bladder bed when capillary bleeding could have been hardly controlled. It can be also noted that being compared with argon coagulation CPC technique shows similar effectiveness but different depth of soft tissues involvement. Visible to the human eye cold plasma beam makes possible to coagulate source of bleeding more precisely that is especially important in endoscope surgery. Taking into account fast and simple preparation, easy adjustment, ergonomic operation, lack of neutral electrode, simplicity of sterilization in CPC mode, cold plasma coagulation could have been claimed by the surgeons in out-patient departments. On evidence of different researchers the depth of devitalization in the process of coagulation is more dosated and ionized gas possesses antiseptic properties due to high ozone concentration in it. In this connection it is recommended to be used for pyoinflammatory surgical diseases of skin and subcutaneous fat. The treatment of 3 festering wounds with the help of CPC (2 B abscesses and 1 epithelium purulence of coccyx) has been already made by now.

Festering wounds chambers have been treated once at the end of initial handling and before their drainage at a minimal power. Further wound management was carried out in the classical fashion by means of water soluble liniments. The terms of the regenerative process have been estimated in this group in comparison with the control group.