ARGON PLASMA COAGULATION IN EMERGENCY GYNECOLOGY: CLINICAL RATIONALE AND ANALYSIS OF THE NEED FOR ORGAN-PRESERVING HEMOSTASIS

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Abstract: *Emergency gynecologic surgery accounts for a substantial proportion of inpatient operative activity and is frequently complicated by bleeding, infectious complications, and systemic inflammatory responses. Conventional coagulation methods do not always achieve rapid, reliable hemostasis without marked collateral thermal injury, which is particularly important for women of reproductive age. This article discusses the pathophysiological and organizational rationale for integrating argon plasma coagulation (APC) into urgent gynecologic care pathways and summarizes key findings from a retrospective review of clinical material from 2020–2022 that informed the development of an optimized APC technique.*

Keywords: *argon plasma coagulation; emergency gynecology; hemostasis; organ-preserving surgery; complications.*

Introduction

According to clinical observations, the share of shoshilinch (urgent) gynecologic interventions reaches 30–35% of all surgeries in gynecologic hospitals. The most challenging scenarios are those in which rapid control of bleeding must be combined with maximal preservation of tissues and reproductive potential. This drives interest in energy-sparing coagulation methods with a controllable depth of effect.

Technological Prerequisites for Using APC

Argon plasma coagulation is a non-contact electrosurgical technique: the coagulation effect is produced by a jet of ionized argon that conducts high-frequency current. Key advantages include uniform superficial coagulation, visual control of the treatment area, potential reduction in blood loss, and a lower risk of deep burns when the technique is used correctly.

Material and Approach to Analysis

The retrospective component analyzed 2,172 medical records of patients admitted to a specialized department in 2020–2022. Of these, 1,810 women (83.4%) underwent emergency surgery. The analysis aimed to identify the most common nosological entities, assess the structure of interventions, the frequency and nature of complications, and determine clinical “points of application” for improving hemostasis.

Clinical Findings and Practical Need Overall, the retrospective data confirm that emergency gynecology is largely driven by bleeding and conditions requiring rapid, reliable hemostasis (ectopic pregnancy, ovarian apoplexy, torsion of the pedicle of an ovarian cyst/cystoma, necrosis of a myoma node, bleeding after cervical procedures,

etc.). The wide variability of clinical situations and the lack of unified protocols for selecting APC parameters justify the need to standardize the technique and to study its impact on the early postoperative period.

Conclusion

APC is a promising organ-preserving hemostatic method in emergency gynecology. Retrospective assessment of the volume of urgent interventions and associated clinical risks provides a basis for defining optimized exposure parameters and implementing structured monitoring of the postoperative inflammatory response.

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