УДК [61+615.1](06)(043.2) *Актуальные проблемы современной медицины и фармации-2024*
ББК 5+52.81 *БГМУ, Минск (25.04)*
А 43
ISBN 978-985-21-1569-8

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ADRENAL GLAND SURGERY: PRE-OPERATIVE MANAGEMENT AND SURGICAL APPROACH.

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Introduction. Adrenal glands are affected by multiple disorders, a lot of them eventually leading to surgery. Adrenalectomy can be performed in various ways and techniques, depending on the underlying diseases and the surgeon's expertise. Adrenal surgery emerged in the 19th century after successful surgical treatment of adrenal disease that evolved from 1889, when Knowsley-Thomton reported the removal of a large adrenal tumor. Since then, it evolved into various approaches from open surgery to laparoscopic one.

Aim: The purpose of this study is to compare different adrenal pathologies in their surgical approaches and perioperative care

Materials and methods. A systematic review of PubMed, Embase, Scopus data base was performed. Data of interest were collected on surgical choice, preoperative and postoperative care and compared in different international guidelines.

Results and their discussion. In case of incidentaloma, The Korean Endocrinology society (KES) confirms that hypersecreting masses with or without clinical symptoms, any mass that is > 4cm , signs of malignancy, increase in size in the span of 4 years, should undergo surgery. The European society of Endocrinology (ESE) clinical practice guidelines suggests minimal invasive surgery for unilateral mass that is ≤6 cm but with no local invasion. Open surgery for suspicious findings and signs of local invasion. If it's a producing adenoma, preoperative administration of prophylactic is needed, Steroid administration is needed before and after adrenalectomy, low-molecular-weight heparin or unfractionated heparin can be used as perioperative thromboembolic prophylaxis

In case of adrenocortical carcinoma, ESE clinical practice recommends open surgery for all ACC unless it is < 6 cm with no local invasion, then laparoscopy can be performed. The American association of endocrine surgeons guidelines for adrenalectomy suggests performing a removal with and undamaged capsule to ensure microscopically negative(R0) margins for better survival outcomes. Open approach is preferred for complete resection but the decision should be made based on the certainty of complete R0 resection. Preoperative identification of local vascular invasion is a critical step to avoid any tumor thromboembolism. All patients with hypercortisolism that undergo surgery for ACC should get perioperative hydrocortisone replacement therapy.

In case of Phaeochromocytomas(PCCs) and paragangliomas(PGLs), both called PPGLs, Surgical resection is the choice treatment. Russian Association of Endocrinologists clinical practice guidelines recommend laparoscopic surgery for all PCCs. For tumors > 8 cm and invasive tumors, open surgery is preferred. Extra-adrenal PPGLs should be operated laparoscopically only by expert and specialized surgeons. KES recommends α-blockers before surgery for cases of functional PCCS, and it should also include a high-sodium diet and fluid intake to reverse catecholamine-induced blood volume contraction preoperatively. Capillary or blood glucose tracking is usually recommended during the primary 48 hours of the postoperative length. Furthermore, hypotension should be precociously treated with extent volume load and vasopressor regimens if necessary.