

**МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ
БУКОВИНСЬКИЙ ДЕРЖАВНИЙ МЕДИЧНИЙ УНІВЕРСИТЕТ»**



МАТЕРІАЛИ

**105-ї підсумкової науково-практичної конференції
з міжнародною участю
професорсько-викладацького персоналу
БУКОВИНСЬКОГО ДЕРЖАВНОГО МЕДИЧНОГО УНІВЕРСИТЕТУ
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Матеріали підсумкової 105-ї науково-практичної конференції з міжнародною участю професорсько-викладацького персоналу Буковинського державного медичного університету, присвяченої 80-річчю БДМУ (м. Чернівці, 05, 07, 12 лютого 2024 р.) – Чернівці: Медуніверситет, 2024. – 477 с. іл.

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У збірнику представлені матеріали 105-ї підсумкової науково-практичної конференції з міжнародною участю професорсько-викладацького персоналу Буковинського державного медичного університету, присвяченої 80-річчю БДМУ (м. Чернівці, 05, 07, 12 лютого 2024 р.) із стилістикою та орфографією у авторській редакції. Публікації присвячені актуальним проблемам фундаментальної, теоретичної та клінічної медицини.

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Conclusions. Prognostic scales recommended by international guidelines do not take into account a number of important rebleeding predictors. Prognostic scales need to be improved. The standard method of injection endoscopic hemostasis needs to be improved. Only a complex of diagnostic, prognostic, and management measures can reduce the number of rebleeding.

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LARYNGEAL NERVE DAMAGE CONTROL ALGORITHM
DURING THYROID GLAND SURGERY

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Introduction. Recurrent laryngeal nerve palsy (RLN) is the most common and serious complication after thyroid surgery. Most surgeons do their best to prevent this. Several studies have shown that routine identification of RLN using intraoperative neuromonitoring (IONM) reduced the rate of permanent RLN paralysis. However, nerve damage still occurs in up to 5% of temporary paralysis (neuropraxia) and less than 1% of permanent paralysis (neurotmesis).

The aim of the study. Determination of potential causes of RLN damage during surgery using the developed intraoperative neuromonitoring algorithm.

Material and methods. The study was conducted on the basis of the Chernivtsi Regional Clinical Hospital. Written informed consent was obtained from each patient. Patients were informed about the intention to use the INNOMED C2 (Germany) neuromonitoring system, which helps to localize and identify the RLN and assess its function during surgery.

From April to August 2023, 23 patients (6 men and 17 women; aged 24 to 78 years; an average age was 47 years) were operated on various thyroid diseases. The same operating team performed the operations. A total of 15 hemithyroidectomies and 8 total thyroidectomies were fulfilled. Thus, in this study 31 nerves, being in the area of surgical manipulation, were involved.

For general anesthesia, all patients were intubated using an endotracheal tube with a 4-channel INOMED LARYNGEAL ELECTROD 7-9 mm. (Germany).

An algorithm for obtaining electromagnetic signals from n. vagus developed for intraoperative neuromonitoring n. vagus and RLN before and after removal of part of the thyroid gland from one side (hemithyroidectomy) or from both sides (thyroidectomy).

The developed algorithm consists of several stages: Stage 1: Signal V1 - the output signal received from stimulation n. vagus with Prass monopolar probe before identification of RLN. Stage 2: The R1 signal is the signal obtained from the RLN, visualized at any site in the tracheoesophageal groove. Stage 3: The R2 signal is the signal obtained by stimulating the RLN in the most proximally exposed part after it has been completely separated from Berry's ligament. Stage 4: Signal V2 - control signal from n. vagus after complete hemostasis of the operative field.

Results. Loss of signals was recorded on six nerves after removal of a lobe of the thyroid gland, and the causes of their damage were well elucidated thanks to the IONM algorithm. Thus, two injuries were caused by the surrounding connective tissue compression during the application of a ligature for the purpose of hemostasis in the area of RLN passage. The detected decrease in the R2 signal and, accordingly, V2 on the side of the same name, made it possible to release promptly this area from compression. Two nerves were pinched inadvertently in a clamp near the anatomical formation - tubercle of Zuckerkandl. The signal change also made it possible to transfer the clamps to a safe area in due time. Another two nerves were found to have conduction disturbances due to obvious overstretching in the area of Berry's ligament during mobilization of the lobe of the gland from the lateral side.

Two nerves regained signals just before the wound was closed. Another four nerves did not regain signals before wound closure, and all cases developed a temporary postoperative RLN palsy that resolved 40 to 60 days postoperatively.

Conclusions. The mechanism of RLN injury may differ among different surgeons, but the developed IONM algorithm is useful for clarifying surgical errors during manipulations near the

RLN. Finding out where and how the RLN can be damaged, using the INOM algorithm, will provide an opportunity to reduce the frequency of temporary paralysis of the RLN.

Kalutskyi I.V.

THE LEVEL OF ENDOGENOUS INTOXICATION IN CHRONIC RHINOSINUSITIS IN PATIENTS WITH TYPE 1 DIABETES MELLITUS

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Introduction. Endogenous intoxication syndrome consists in the fact that during pathological processes, a large number of metabolic products accumulate in the body's biological fluids, most of which are substances with an average molecular weight of 500 to 5000 Da, which have a toxic effect on cells and organ tissues. The accumulation of medium-mass molecules (MMM) is not only a marker of endogenous intoxication, but also the cause of further deepening of the pathological process.

The aim of the study. The aim of the research was to analyse the manifestation of endogenous intoxication by determining the level of MMM in chronic rhinosinusitis (CRS) in patients with diabetes mellitus (DM) of the 1st type.

Material and methods. To determine the level of MMM, the determination of medium molecular weight peptides was used according to the screening method of N. I. Gabrielyan (1985). 1 ml of venous blood serum was treated with 0.5 ml of a 10% solution of trichloroacetic acid, then centrifuged for 30 min at a speed of 3000 rpm. The supernatant was dissolved with distilled water in a ratio of 1:10 and at a wavelength of 254 nm on a spectrophotometer, the MMM content was determined in conventional units.

The studied contingent consisted of: 40 patients with CRS in the stage of exacerbation with type 1 DM; 20 patients with CRS in the stage of exacerbation without accompanying pathology and 10 healthy donors. Clinically, the exacerbation of CRS was manifested by characteristic local and general symptoms in all patients. The diagnosis was based on X-ray examination data, but the main criterion for establishing the diagnosis was the diagnostic and therapeutic puncture of the maxillary sinus, which was performed on 60 patients. At the same time, the volume of the sinus, which was reduced in all the examined, and the nature of the pathological content in the lavage fluid were evaluated.

Results. The reference norm of the MMM level was (0.31 ± 0.02 c.u.). The level of MMM in patients of the comparison group was (0.33 ± 0.02 c.u.). In the main group of CRS patients with type 1 DM, the level of MMM was (0.53 ± 0.04 c.u.) and was most likely higher compared to the comparison group ($p < 0.001$), which also indicates pronounced endogenous intoxication in this category of patients.

Table

The level of MMM in patients with chronic rhinosinusitis with type 1 diabetes mellitus

Indexes	CRS patients with type 1 DM (n=40)	Patients with CRS without accompanying pathology (n=20)	Healthy donors (n=10)
level of MMM	$0,53 \pm 0,04$ c.u. ($p < 0,001$)	$0,33 \pm 0,02$ c.u.	$0,31 \pm 0,02$ c.u.

Conclusions. CRS patients with type 1 diabetes mellitus develop endogenous intoxication, which is associated with dysfunction of the immune system and a decrease in the body's general resistance, which is confirmed by the dynamics of changes in integral immunohematological coefficients and molecules of average mass.