A CLINICAL CASE OF SYNCOPAL STATES IN A 16-YEAR-OLD PATIENT WITH SOMATOFORM VEGETATIVE DYSFUNCTION, DISSOCIATIVE STATES AND SECONDARY ACQUIRED TRANSIENT SYNDROME OF PROLONGED QT INTERVAL ON THE BACKGROUND OF LIGHT MENTAL RETARDATION

Abstract. Syncopal states are an urgent problem because loss of consciousness can occur during the patient’s activity and lead to traumatization and death. Syncopal state may result from a more serious (usually cardiac) disease with the risk of sudden death. Particular attention should be paid to differentiating syncope status with epileptic seizure during the interrogation and follow-up examination of patients. Electroencephalography is required in the examination of
all patients with syncopal states. Arhythmogenic syncope (11-14%) occupies a significant place in the syncope structure, one of the varieties, which is the prolonged QT interval that occurred in our patient. An important point in this clinical case is the presence of a child in the diagnosis of dissociative conditions and F 70, which prescribe antipsychotic and anxiolytic drugs, which are contraindicated at extended QT interval. We present a clinical case of 16-year-old girl who was admitted to the Ternopil Regional Children’s Hospital with complaints of loss of consciousness, convulsions, restlessness, increased blood pressure up to 150/80-130/90 mm Hg., headache, tremor, eye rolling. Attention was drawn to the multifaceted nature of the complaints: headache, fear of fainting, and such a strange complaint as toothache. It should be noted that the convulsions were not described by any of the doctors, information about them was taken only from the words of the child's mother. The child was untimely diagnosed with arrhythmogenic syncope. Manifestations of cardiogenic syncope were interpreted by the mother as a manifestation of epilepsy. The doctors had never observed this child during the syncope state. The entire anamnesis was based on the words of mother. Therefore, for the diagnosis of arrhythmogenic syncope, Holter monitoring of ECG data has greater possibilities. On the one hand, long-term monitoring increases the probability of registering changes during the syncope state, on the other hand, the analysis of heart rate variability makes it possible to establish the state of the autonomic nervous system, which is important for diagnosing the prerequisites of reflex syncope and syncope due to orthostatic hypotension. Thus, the place of Holter ECG monitoring in determining the causes of syncope is mainly to detect arrhythmogenic syncope in patients with relatively frequent episodes of loss of consciousness. The diagnosis of arrhythmogenic syncope makes it possible to avoid iatrogeny in the case when anxiolytic and antipsychotic drugs are necessary for the treatment of concomitant pathology.

Keywords: Syncopal states; syndrome of prolonged QT interval; antipsychotic and anxiolytic drugs.

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КЛІНІЧНИЙ ВИПАДОК СИНКОПАЛЬНИХ СТАНІВ У 16-РІЧНОЇ ПАЦІЄНТКИ З СОМАТОМОРФНОЮ ВЕГЕТАТИВНОЮ ДИСФУНКЦІЄЮ, ДИСОЦІАТИВНИМИ СТАНАМИ ТА ВТОРИННИМ НАБУТИМ ТРАНЗИТОРНИМ СИНДРОМОМ QT НА ФОНІ РОЗУМОВОЇ ВІДСТАЛОСТІ ЛЕГКОГО СТУПЕНЯ

Анотація. Синкопальні стани є актуальною проблемою, оскільки втрата свідомості може відбуватися під час активності пацієнта та призвести до травматизації, загибелі. Синкопальний стан може виникнути внаслідок більш серйозного (зазвичай серцевого) захворювання з ризиком раптової смерті. Особливу увагу під час опитування та подальшого обстеження пацієнтів необхідно приділити диференціюванню синкопального стану з епілептичним нападом. Необхідним є проведення електроенцефалографії при обстеженні всіх пацієнтів із синкопальними станами. Значне місце в структурі синкопе посідає аритмогенне синкопе (11-14%), одним з різновидів якого є подовжений інтервал QT, який мав місце в нашої пацієнтки. Важливим моментом даного клінічного випадку є наявність у дитини в діагнозі дисоціативних станів та F 70, при яких призначаються антипсихотичні та анксіолітичні препарати, які протипоказані при подовженному інтервалі QT. Наведено клінічний випадок дівчини 16 років, яка поступила в Тернопільську обласну дитячу лікарню зі скаргами на втрата свідомості, судоми, неспокій, підвищення артеріального тиску до 150/80-130/90 мм рт.ст., головний біль, тремор, закочування очей. Звертала увагу багатогранність скарг: головний біль, страх втратити свідомість і така дивна скарга, як зубний біль. Слід зазначити, що судоми не описував жоден із лікарів, інформація про них була взята лише зі слів матері дитини. Дитині було невчасно діагностоване аритмогенне синкопе. Прояви кардіогенного синкопального стану матір’ю інтерпретувала як прояв епілепсії. Лікарі жодного разу не спостерігали цю дитину під час синокопального стану. Весь анамнез складено зі слів матері. Тому для діагностики аритмогенного непритомності більші можливості має холтерівське моніторування даних ЕКГ. З одного боку, тривалий моніторинг підвищує вірогідність реєстрації змін під час синкопального стану, з іншого –
Introduction. Syncopal states are a syndrome characterized by a short-term and sudden loss of consciousness, usually accompanied by a loss of muscle tone and a fall. According to the European Society of Cardiology, the annual prevalence of syncopal states in the general population ranges from 18.1 to 39.7‰. During the first two decades of life, approximately 15% of individuals experience at least one episode of syncope, and syncope is the chief complaint in approximately 1% of all pediatric cases [1; 2]. From the pathogenetic point of development of syncopal states, three main groups of syncope are defined: reflex syncope, cardiogenic syncope, syncope due to orthostatic hypotension [2]. Special attention during the interview and subsequent examination of patients should be paid to the differentiation of a syncopal state from an epileptic attack. The authors consider it rational to carry out electroencephalography during the examination of all patients with syncopal conditions. According to the Framingham study, in the general population, cardiogenic syncope is the third most common, but the first in terms of danger and unfavorable prognosis [3]. The causes of cardiogenic syncope are divided into three groups: heart rhythm and conduction disturbances (arrhythmogenic syncope); structural and functional abnormalities of the heart (congenital and acquired heart defects, cardiomyopathies, myocardial infarction, etc.); other reasons (thromboembolism of the pulmonary artery, dissecting aneurysm of the aorta, etc.). A significant place in the structure of syncope is occupied by arrhythmogenic syncope (11-14%) [4]. That is why the differential diagnosis of syncopal conditions should begin with the exclusion of cardiogenic syncope. Studies of the electrical activity of the heart are important in detecting arrhythmogenic syncope. The "gold standard" for the diagnosis of arrhythmogenic syncope is the establishment of a temporal correlation between the onset of symptoms and the detection of rhythm and conduction disturbances. This significantly reduces the diagnostic capabilities of conventional electrocardiography. They are reduced to cases of arrhythmogenic syncope during an ECG or an ECG immediately after the occurrence of syncope, until the disappearance of the paroxysmal rhythm disturbance [5].

Patient presentation. We present a clinical case of 16-year-old girl who was admitted to the Ternopil Regional Children’s Hospital with complaints of loss of
consciousness, convulsions, restlessness, increased blood pressure up to 150/80-130/90 mm Hg., headache, tremor, eye rolling. Attention was drawn to the multifaceted nature of the complaints: headache, fear of fainting, and such a strange complaint as toothache. It should be noted that the convulsions were not described by any of the doctors, information about them was taken only from the words of the child's mother. Medical history: complaints of increased blood pressure bothered her for two years, when she was diagnosed with hypothalamic syndrome, for which she was examined and treated as an inpatient. According to the mother, the child's first loss of consciousness occurred when the child was frightened by a knock on the window at night, the child was conscious during hospitalization and lost consciousness already in the ambulance when a flashlight was shone on it. The child was sent to the diagnostic department. Life anamnesis: a child from the 2 - nd pregnancy, which was uneventful, 2 independent births. She was born at 38 weeks: body weight - 3500 g, height - 58 cm. In the process of communicating with the girl, her childishness attracted attention. According to her mother, she plays with dolls at the age of 16, reads picture books, does not want to study at the lyceum, constantly seeks medical help, has many absences. In the lyceum, the girl, according to her words, is insulted, she does not keep up with her studies. Objectively: the general condition is satisfactory. Physical development is disharmonious (body weight - 80 kg, height - 171 cm, body mass index - 27.3 kg/m2). The structure of the body is hypersthenic, proportional. Pale stretch marks are visualized on the thighs. Breathing over the lungs is vesicular. Heart sounds are sonorous, rhythmic, tachycardia - heart rate 100-90/min. The liver is enlarged by 2 cm, the edge is elastic, not sensitive to palpation. Stool once a day, designed without pathological impurities. Urination is not disturbed. Neurological status: conscious, oriented in place, time and personality. There are no meningeal signs. The face is symmetrical. Taste and hearing are not impaired. Swallowing is preserved. Muscle strength is preserved in the limbs. Muscle tone is satisfactory. No sensitivity disorders were detected. The girl has paroxysmal conditions in the form of increased systolic blood pressure - up to 140-160 mmHg., which were accompanied by convulsions with blue lips and biting of the tongue and turning of the head and eyes to the left. A previous diagnosis was: «Hypothalamic syndrome of the pubertal period with episodes of increased pressure. Somatomorphic disorder, dissociative states». To clarify the cause, the court conducted an encephalography, during the recording of which permanent movement artifacts were detected, as the child moved his eyes, eyelids, and lips. Since there were episodes of increased blood pressure, an examination of the cardiovascular system was carried out. Echocardiography revealed a transverse chord in the left ventricle. An electrocardiogram (ECG) revealed sinus tachycardia, right ventricular overload, myocardial hypoxia. During daily monitoring of blood pressure, daytime systolic blood pressure corresponds to age - 120 mmHg, daytime diastolic pressure - 70 mmHg, nighttime blood pressure was not measured properly, as the girl's condition, according to her mother, worsened in the background sound
signals of the device at night, and therefore the mother arbitrarily disconnected the device from the child. Additional daily blood pressure monitoring is required in the future. At the time of failed monitoring, mild nocturnal systolic hypertension was recorded - 128 mmHg. and mild nocturnal diastolic hypertension – 85 mmHg. An increase (reverse dipping) of night systolic blood pressure was recorded: - 6.8%. An increase (reverse dipping) of night systolic blood pressure was recorded: - 6.8%. An increase (reverse dipping) of nighttime diastolic blood pressure was recorded: – 22.4%. Pressure variability is 11/13 mmHg. According to the results of daily monitoring of the electrical activity of the heart in 12 leads, the QT interval is 0.46 s. Exceeding the QT threshold by more than 0.45 s. recorded in 81% of cases. Thus, the child had a secondary acquired transient syndrome of prolonged QT interval. General blood analysis: hemoglobin – 132 g/l, erythrocytes – 4.42×10¹²/l, platelets – 137×10⁹/l, leukocytes – 8.79×10⁹/l, sedimentation rate of erythrocytes – 7 mm/h, rods – 5%, segmentonuclear cells - 54%, eosinophils - 14%, lymphocytes - 25%, monocytes - 2%. Blood sugar-4.3 mmol/l. General analysis of urine - moderate amount of mucus, protein - 0.039 g/l, leukocytes - 3-4 in the field of vision, erythrocytes - 0-1 in the field of vision, salts - amorphous phosphates, specific gravity - 1016. Biochemical blood analysis: potassium -3.44 mmol/l, sodium-141.6 mmol/l, protein - 74.5 g/l, bilirubin - 4.4 mmol/l, AST-74, ALT - 56, urea - 5.5 mmol/l, creatinine – 83.7 mmol/l. Rheumatic tests: antistreptolysin - 800 U/l, C-reactive protein - 0.41, rheumatoid factor - 60. Procalcitonin - 0.09. X – ray examination of chest – perivascular, peribronchial infiltration of lung tissue, the roots are expanded, the sinuses are free, the domes of the diaphragm are clearly contoured, the heart is dilated across. An x-ray of paranasal sinuses did not reveal any pathology. She was consulted by a neurologist, a psychoneurologist, a cardiologist, and an endocrinologist. A clinical diagnosis was established: «Secondary acquired transient syndrome of prolonged QT interval, circulatory failure 1 degree. Hypothalamic syndrome of the pubertal period with signs of arterial hypertension. Somatomorphic vegetative dysfunction, dissociative states. F 70». Due to neurological and psychiatric diagnoses, the child was prescribed eglonil and gidazepam at the beginning of treatment. The mother did not give these drugs to the child because she did not agree with the diagnoses. After the detection of the secondary acquired transient syndrome of prolonged QT interval and establishing it as the root cause of the child's sinocopal states, and not a seizure, as it was interpreted exclusively from the words of the mother and the child, a stage of 5 mg in the evening was prescribed, magnesium sulfate 5 ml intramuscularly for 5 days. All antipsychotic and anxiolytic drugs were withdrawn, blood pressure control, a repeat encephalogram after 2 weeks and daily monitoring of the electrical activity of the heart with daily monitoring of blood pressure after three months were recommended in order to resolve the issue of prescribing antiarrhythmic drugs in connection with the secondary acquired transient syndrome of prolonged QT interval.
Discussion. The peculiarity of this case was the presence of an undiagnosed syncope state in a child with a secondary acquired transient syndrome of prolonged QT interval on the background of somatomorphic autonomic dysfunction, dissociative states, F 70. Manifestations of cardiogenic syncope were interpreted by the mother as a manifestation of epilepsy. The doctors had never observed this child during the syncopal state. The entire anamnesis was based on the words of mother.

Conclude. Therefore, for the diagnosis of arrhythmogenic syncope, Holter monitoring of ECG data has greater possibilities. On the one hand, long-term monitoring increases the probability of registering changes during the syncopal state, on the other hand, the analysis of heart rate variability makes it possible to establish the state of the autonomic nervous system, which is important for diagnosing the prerequisites of reflex syncope and syncope due to orthostatic hypotension. Thus, the place of Holter ECG monitoring in determining the causes of syncope is mainly to detect arrhythmogenic syncope in patients with relatively frequent episodes of loss of consciousness. The diagnosis of arrhythmogenic syncope makes it possible to avoid iatrogeny in the case when anxiolytic and antipsychotic drugs are necessary for the treatment of concomitant pathology.

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