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General Anaesthesia as a Factor Releasing Pseudomyasthenic Syndrome

Znieczulenie ogólne jako czynnik wyzwalający wystąpienie zespołu rzekomomiastenicznego

The term "myasthenia-like syndromes" refers to the complex of clinical and electrophysiological symptoms resembling myasthenia and accompanying some other, defined, basic disease.

Myasthenic or pseudomyasthenic symptoms (terminology is questionable here) occur in so many different diseases as: encephalitis, lupus, erythematosus, polymyositis, dermatomyositis, muscular dystrophy, neuropathy, endocrine syndromes — hyperthyroidism, diabetes hypoadrenia, hypophyseal chromophobic adenoma and malnutrition.

Finally, the syndrome noticed in bronchial cancer is the best studied now and it is worth mentioning that it can occur long before cancerous symptoms are observed.

Our presentation concerns the patients in which general anaesthesia and pharmacological muscular atony was the factor provoking myasthenic symptoms or releasing pseudomyasthenic syndrome.

CASE 1

Female patient C.D., 44 years of age, a clerk admitted to Neurology Clinic because of swallowing and speech disorders of dysarthia type progressing.

Complaints started three years earlier and the patient was ambulatorily treated by a psychiatrist for neurosis. USG of the thyroid revealed a slight thyroid gland enlargement whereas laryngological examination showed poorer mobility of the soft palate which was unable to reach the rear wall of the pharynx during phonation. In July, 1993 the patient underwent cholecystectomy under general anaesthesia. After the operation the patient had some trouble with coming out of sleep. Pronounced exacerbations in speech and swallowing have been occurring ever since.

In February 1994 X-rays of the base of the skull, nasopharynx, sinuses and sphenoidal sinus were performed. Apart from a slight smooth thickening of the rear pharyngeal wall and parietal thickening of the mucosa in the maxillary sinus no aberrations were reported in these examinations.

Afterwards EMG examinations were carried out: Electromyographic trial (n. VII) was positive. After administration of 1 mg of Polstigmin some clinical improvement was observed with no improvement in electrophysiological examination.

In March 1994 the patient was admitted to Neurology Clinic. Apart from irregularly enlarged thyroid gland no other aberrations were observed during general medical examination. Neurological examination revealed symmetrical deficiency in the soft palate mobility, palato-pharyngeal hyporeflexis, rhinolalia and dysarthia, and apokamnosic features of the bulbar muscles. Laboratory tests showed no aberrations. X-rays of the chest with a detailed description of the mediastinum, USG of the abdominal cavity, CT examination of the mediastinum and thymus revealed no pathology.

The above described case is a subject for discussion. It seems fundamental to consider whether general anaesthesia revealed previously existing myasthenic symptoms in their subclinical form or if general anaesthesia was the cause of myoneural conduction disturbances manifested by pseudomyasthenic syndrome.

CASE 2

Male patient M. Ż., 29 years of age, hospitalized in Neurology Clinic because of headaches, diplopia and protrusion of the left eyeball later on. MRI examination of the head revealed agnosia of the corpus callosus with the presence of a 4×5 cm lipoma at the site. Tiny fatty fragments were also localized in the central part of both lateral ventricles.

During the patient's 3-week hospitalization in Neurosurgery Clinic attention was paid to the appearance of a new symptom manifested by weakness of the muscle force which was described as globally weak. EMG recordings obtained at that time and conduction examinations suggested muscular process in the proximal muscles.

Poorer phonation, difficulties in swallowing solid food and extinction of tendinous reflexes appeared later on, the patient was assisted in his attemps to move. Frontal craniotomy with subtotal tumor removal was performed under general anaesthesia.

Histopathological examination confirmed the presence of the lipoma. It took quite a while to awake the patient after the operation and at first he was unable to

open his eyes. On the next day myasthenia while swallowing increased and rhinolalia occurred.

After neurological consultation the patient was transferred to Neurology Clinic with the myasthenic syndrome suspected. After administration of Polstygmin and Dexamethason the patient's condition improved quickly: speech became clearer, there was no problem while eating, he was able to move without any help, no signs of fatigue were present. The repeated EMG examination brought a positive myasthenic trial in *m. orbicularis oris* range. Diagnostic examinations performed together with the CT examination of the mediastinum and specification of the level of the thyroid gland's hormones showed no aberrations. The patient was discharged from hospital in a generally good state with no aberrations present during neurological examination. He is ordered to take Polstigmin three times a day in 15 mg doses.

In case of the latter patient we have more doubts as far as specyfying of the cause of the disorders is concerned. Here one cannot probably think of some provoking influence of general anaesthesia in relation to pseudomyasthenic syndrome but rather of some releasing impact which was intensifying the symptoms occurring in the patient also before general anaesthesia. Short observation of the patient does not allow to draw final conclusions but diagnosing myasthenia in case of a 29-year-old man must be doubtful, the more so that his health improved radically shortly after the operation, with simultaneous introduction of Polstigmin but in very small doses. Follow-up examination of the patient, three months after falling ill, confirms his very good condition with no symptoms of myasthenia present.

In compliance with our intention to present both patients in whom apokamnostic symptoms occurred clinically after operations carried out under general anaesthesia and pharmacological muscular atony, it seems justified to pay attention to the disputable and ambiguous role of both the operation (smaller significance?) and general anaesthesia together with muscular atony (more probable impact) in the ethiopathogenesis of neuromascular conduction disturbance.

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STRESZCZENIE

W doniesieniu przedstawiono dwa przypadki pacjentów, u których znieczulenie ogólne i farmakologiczne zwiotczenie mięśni było czynnikiem prowokującym objawy miasteniczne lub wyzwalającym zespół rzekomomiasteniczny.

Przypadek 1 jest niejednoznaczny, wymaga rozważenia, czy obserwowane objawy są wynikiem zastosowania znieczulenia ogólnego w czasie zabiegu cholecystektomii z następowym ujawnieniem miastenii o przebiegu subklinicznym, czy też bezpośrednim powodem powstania zaburzeń przewodnictwa nerwowo-mięśniowego. Przypadek 2 dotyczy pacjenta, u którego zastosowane znieczulenie ogólne w trakcie zabiegu usunięcia tłuszczaka miało wpływ wyzwalający i nasilający objawy istniejące już przed zastosowaniem narkozy.

Omówienie tych przypadków miało na celu zwrócenie uwagi na niejednoznaczną rolę zabiegu znieczulenia ogólnego i farmakologicznego zwiotczenia mięśni, jeżeli chodzi o etiopatogenezę zaburzeń przewodnictwa nerwowo-mięśniowego.