

Elective cesarean section on psychiatric indications – the phenomenon analysis, report of two cases and psychiatric clinical recommendations

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Summary

Introduction. In Poland, no guidelines concerning the mode of delivery in patients with psychiatric disorders have so far been developed. The most common psychiatric diagnosis discussed in the Polish literature in the context of the indications for the elective caesarean section is tokophobia. It was confirmed in recent studies that intense fear of childbirth, requiring medical interventions is an important predictor of postpartum depression. Other studies have shown that emergency delivery causes long lasting posttraumatic stress disorder symptoms.

Aim. The aim of this paper is to discuss the different mental disorders, which may determine psychiatric indications for elective CS.

Material and methods. A literature review and analysis of two cases. Review of the literature was made via MEDLINE and based on such a keywords as: mental health, mode of delivery, caesarean section, psychiatric indications for CS. In the analysis, papers based on population studies and essential because of the potential clinical decisions concerning psychiatric indications for CS were taken into account first.

Results. Psychiatric indications for the preferred type of delivery are determined individually. They are mainly based on the ability of the psychiatric patient to cooperate with obstetric staff during vaginal delivery. The second area of psychiatric indications is a strong fear of labour that results in the need for psychiatric consultation in the last trimester of pregnancy or the perinatal period.

Conclusions. Antenatal care of women with mental disorders requires close cooperation between the obstetricians and psychiatrists specialised in the mental disorders due to somatic state. Such cooperation should lead to preventing both obstetric and psychiatric complications during the pregnancy and labour in women experiencing symptoms of mental disorders.

Key words: elective caesarean section, psychiatric indications

Introduction

Many epidemiological studies show that the frequency of cesarian section, both in Poland and worldwide, is gradually increasing. In Poland in 1999, the percentage of CS was 18.1% while in 2012 it reached up to 37% [1, 2]. Also, the United Kingdom CS rates have increased from just over 9% in 1980 to 20–25% in recent years [3]. According the OECD (Organization for Economic Co-operation and Development) estimation the number of performed CS in member countries increased by 4.3% between 2000 and 2011 [4, 5].

Data based on a Swedish cohort study showed that the increasing number of CS might be the effect of a higher maternal age, lower fertility and higher body mass index (BMI) of pregnant women [6]. Some authors studying the obstetricians' opinion concerning the CS procedures, point out that the approach of doctors to this method is changing in many countries which may have a direct impact on the growing rate of this mode of delivery [7]. Another important reason is the preferences of pregnant women who want a CS, as it was proved on the Swedish population [6, 8]. Among the reasons given by those women are: anxiety about the birth process, the previous negative or traumatic experiences of vaginal delivery, previous obstetric complications (e.g. emergency C-sections) [6]. It was shown on the Swedish population study that one of the most common reasons for choosing CS a method of labour is phobia of vaginal delivery, also called tokophobia [9]. In the Norwegian population study it was proved that choosing CS correlated with the anxiety and depressive symptoms, low self-esteem and history of sexual abuse [10]. In a meta-analysis concerning the preferences for CS, it was shown to be preferred by 15.6% of the studied women. The highest percentage of preferring the elective CS is among Latin American women – 24.4%, while the lowest (11%) is among women from European countries [11]. It was proved in the study on Swedish women (N = 64,834), that women who, between 2002 and 2004 had CS by request, had a more frequent history of mental illnesses than other parturients [6]. Anxiety disorders, stress-related disorders, somatoform disorders, and mood disorders were the most common maladies found.

According to the medico-legal solutions adopted in some countries, CS is allowed on maternal request (cesarian section on maternal request – CSMR). In Poland CSMR has not been approved by the Polish Gynecological Society yet, but it is performed in Polish private gynecological-obstetric clinics. In contrast, Polish hospitals which have a contract with the National Health Fund (Narodowy Fundusz Zdrowia – NFZ) act in accordance with the Polish Gynecological Society guidelines.

The current Polish Gynecological Society statement concerning the indications for CS delivery defines “Caesarean section” as “obstetric surgery, intended to complete the pregnancy or delivery if waiting for natural delivery causes a danger to the mother and/

or child” [12]. In the above recommendations the indications for cesarean section were divided into four groups depending on the urgency of the surgery: elective (planned), urgent, pressing and emergency [12, 13].

Discussing the elective indications it was highlighted that this is a group of indications where the “Caesarean section is to be performed in a fixed term, where factors making vaginal birth impossible are known and there is no direct life-threatening conditions to mother or fetus, before the uterine contractions start. In such situations, some pregnancies can safely wait days or even weeks for C-section” [13]. The indications for elective CS might be: neurological, ophthalmic, orthopedic, hematologic, cardiologic and psychiatric. In these recommendations, however, it was not discussed which mental disorders are absolute or relative indication for caesarean birth.

There has been a lively discussion between Polish obstetricians last years about the reasons for increasing number of C-sections and about the possibility of reducing their frequency. In Polish psychiatric literature there are no indications specifying the kind of mental disorders or psychopathologic syndromes necessitating an adjustment in delivery methods for psychiatric reasons. Psychiatric indications for cesarean birth are determined on an individual basis, mainly on the patient-obstetric staff cooperation criteria. This subject has not been previously discussed in Polish psychiatric or obstetric literature, except the papers concerning the fear of childbirth (tokophobia) and psychological aspects for the C – section delivery.

Aim

In this work two goals were set. The first was to discuss the most important determinants of psychiatric pathologies which potentially lead to elective CS delivery. Another aim was to present and discuss two clinical cases when mental disorders appeared as an effect of problematic circumstances during labour.

Material and method

Review of the literature was made via MEDLINE and based on such key words as mental health, mode of delivery, caesarean section and psychiatric indications for caesarean section. In the analysis, papers based on population studies and essential (because of the potential clinical decisions concerning psychiatric indications for CS) studies were taken into account first. All mental disorders, which may determine psychiatric indications for elective CS, were divided into several categories: anxiety disorder, depression and post traumatic stress disorder, psychotic disorders and mental disorders associated with mental retardation.

Then two clinical cases were presented and discussed. In the first case a gradual development of tokophobia symptoms was observed. The symptoms diminished when indications for C-section delivery were confirmed by a psychiatrist. In the second case, in a patient who was not provided the preferred method of childbirth, the perinatal complications occurred during the labour and symptoms of post-traumatic stress disorder developed.

Anxiety disorders

One of the potential, and probably the most common psychiatric indications for CS delivery is tokophobia (Greek: Tokos – birth). It is a specific fear of pregnancy and giving birth. The pathological fear of childbirth is a psychopathological phenomenon, which has not been satisfactorily defined and characterised yet [14].

According to the National Institute of Health and Care Excellence the anxiety in antenatal period occurs in most women. In these standards tokophobia is defined as “pathological fear exceeding the level observed in majority of women in antenatal period, which forces women to resign from vaginal delivery and search for the possibility of CS” [3].

In one of the first modern papers concerning the characteristics and conditioning of tokophobia, several forms of the disorder were distinguished:

1. Primary tokophobia – when the fear and dread of childbirth predates pregnancy (onset usually occurring in adolescence);
2. Secondary tokophobia – which has developed due to the previous experience of traumatic birth and may be associated afterwards with the symptoms of postpartum PTSD or chronic postnatal depressive reactions (usually never diagnosed or treated);
3. Tokophobia coexisting with depression during pregnancy – is one of the symptoms of depressive disorders. Pregnant women with this form of tokophobia have obsessive thoughts regarding the belief that they are unable to have a child, or will die during the childbirth [14, 15].

Both in the ICD-10 and DSM-5, the specific diagnostic category concerning the fear of childbirth was not distinguished [16, 17]. On the basis of ICD-10 classification tokophobia symptoms might be coded in two categories – specific (isolated) form of phobia (F40.2) or mental disorders and diseases of the nervous system complicating pregnancy, childbirth, puerperium (O99.3).

In Polish literature the problem of tokophobia was discussed further in the works of Cekański, Bilert and Clement [18–20].

Tokophobia is more often diagnosed in women suffering from other psychiatric disorders and in women who received psychiatric treatment [21, 22]. In a study

evaluating the reasons for fear of childbirth, performed on a group of 1,200 Finnish women it was proved that this fear is observed in nulliparas and women who experienced the emergency CS or vacuum extraction (VE). Higher level of anxiety was observed in the later stages of pregnancy, compared with the initial [23]. Also, it was observed, that the strong fear of childbirth was correlated with CS delivery preference. Similar results were obtained in the study of Nieminen et al. This study examined the relationship between the level of tokophobia and the preferred method of delivery in 1,635 Swedish women in 2006 [24]. Preference for CS delivery correlated with the severity of tokophobia (OR 11.79, CI 6.1–22.59 for nulliparas and OR 8.32, CI 4.36–15.85 for women who have given birth). Also, higher level of fear of childbirth between multiparas was combined with previous VE, CS or forceps delivery (OR 2.34, 1.02–5.34) [22].

In a recently published study of Polish women in the early postpartum period it was observed that in women with higher level of anxiety (measured by Spielberger Questionnaire) the probability of completing the pregnancy by CS was higher [25]. The Scandinavian study showed that woman who looked for help because of fear of birth tended to be more anxious – with intense fear of delivery and labour pain and differ also in personality as compared with the control group. They have a higher level of psychasthenia and lower tendency for socialisation [26]. The authors of this study noted the role of psycho-educational intervention in antenatal period to reduce the risk of negative experiences of delivery. According to many authors, this kind of interventions decreases the severity of tokophobia and surgical deliveries [27], thereby increasing patient's satisfaction.

On the other hand, the method of tokophobia treatment in pregnant women, accepted by the medical and scientific groups, has not been developed yet. In the Brockington and Hofberg study it was found that in pregnant women with tokophobia symptoms who have been denied their preferred method of delivery, the higher severity of psychopathological symptoms was observed, if compared with pregnant women with tokophobia who can deliver in the way chosen by themselves [28].

Because of controversy in Poland concerning CS delivery for psychological reasons Pomorski et al. compared the early complications after vaginal and surgical deliveries [29]. The authors expressed the view that because of no differences between the number of early complications after CS and vaginal delivery “the mental state of pregnant women may be the only indication for choosing CS delivery”. However, it is worthy to note that the long-term complications after CS and vaginal delivery and the impact on later problems with pregnancies and deliveries were not taken into account in that work [30, 31]. However, because of decreasing fertility in modern women, who often do not plan more than one or two children, the issue of the subsequent pregnancies may not be so important.

Depression, posttraumatic stress disorder and the mode of delivery

According to the most important classification systems and latest DSM – 5, postpartum depression is not a separate category of mental disorders, but constitutes a special case of depressive disorders that appear in up to 4 weeks after delivery [17].

Traumatic birth, completed with induced labour procedures, such as forceps or vacuum extraction has been classified as one of the potential risk factors for postpartum depression. However, studies carried out so far provide as yet no firm conclusions. In his study, Goker et al. (N = 318), showed that the method of delivery (i.e. emergency or elective CS, spontaneous vaginal labour) had no effect on the level of postpartum depression symptoms [32]. The Malaysian cohort study (N = 250) showed that postpartum depression was observed two times more often in women after emergency surgical deliveries compared with women who had elective CS [33]. The largest study concerning the predictors of postpartum depression was conducted on Finnish women who delivered between 2002 and 2010 (N = 511,422) [34]. In the above work it was documented for the first time on the basis of such a large group that fear of childbirth is an independent predictor of postpartum depression. The strongest predictor of depression in postpartum period was history of depression. However, in women who had not been diagnosed with depressive disorder previously the fear of childbirth so intense as to require medical intervention had the strongest correlation with depression.

The anxiety in antenatal period and fear of labour pain is evolutionary, but in times of increasing medical procedures during delivery or in the cases of deliveries with complications, may contribute to the development of post-traumatic stress symptoms. The Iranian cohort study (N = 400) showed that almost one third of the women who have experienced a traumatic childbirth revealed the PTSD in a period of 8 weeks and it was also connected with the mode of delivery [35]. However, an earlier Swedish study (N = 1,640) showed that post-traumatic stress symptoms related to the last birth are observed in much lower percentage of women (about 2% of respondents) [36]. They were connected with experiencing negative cooperation with obstetric staff and negative assessment of childbirth process. The direct connection with the method of delivery was not studied.

In the study conducted by Rowlands and Redshaw (N = 5,332) the effect of the method of delivery on the mother's well-being was thoroughly evaluated. The methods were categorised as: birth without complications, forceps delivery, VE and elective CS) [37]. The lowest well-being was observed in mothers who had the forceps delivery, as compared to women who gave birth vaginally, or who underwent elective CS. Also the symptoms of post-traumatic stress most often occurred in women after forceps delivery. The symptoms tend to persist for several months of follow-up.

Mental impairment and the mode of delivery

Mental retardation is, according to the ICD-10, “a condition of arrested or incomplete development of the mind, which is especially characterised by impairment of skills manifested during the developmental period, skills which contribute to the overall level of intelligence, i.e. cognitive, language, motor and social abilities” [16]. The mental retardation in pregnant women can raise the question about the possibility for cooperation between patient and medical staff during vaginal delivery and the patient’s ability to understand and interpret the instructions given during the delivery. Little is known about the determinants of pregnancy and labour between women with mental retardation. One of the few Australian cohort studies show that children of mothers with mental retardation have a lower birth weight (28%), were likely to be born prematurely (22%) and required neonatal care (2.3%) compared to healthy women children. They did not differ in Apgar score [38]. However, in a Swedish cohort study (N = 340,620), where the group of 326 mentally retarded women was distinguished, it has been shown that miscarriages and perinatal complication occurs more often in those women when compared with control group (1.2 % vs. 0.3% and 1.8% vs. 0.4%) [39], and their children are born by CS more often and with lower Apgar score (Apgar <7 in the fifth minute – 3.7% vs. 1.5%). But it is not clear from the above studies, whether the CS performed in this group were elective or emergency, and what were the reasons for the worse state of the newborn. However, the authors concluded that women with mental disabilities are at risk of serious perinatal complications and require increased obstetricians’ vigilance [39].

Psychotic symptoms, psychotic disorders and the mode of delivery

In a recent study concerning the reproductive patterns in patients with mental disorders, conducted on Danish population, it was observed that the more severe mental disorders were connected with the lower fertility [40] and the lowest fertility occurred in people with psychotic disorders. Little is known about the delivery experiences between people suffering from psychosis, their cooperation during labour and the impact of drugs used in labour induction and labour action on severity of psychotic symptoms in the postnatal period. It is known, however, that psychotic symptoms are more common in women giving birth for the first time, (it occurs at 1/500 to 1/1000 parturients) [17]. In addition, it has been proved that deliveries in group of women with history of psychosis are more often complicated than in control group [41]. Also the hypothesis that unexpected psychotic behaviour during childbirth may determine its course is confirmed by the results of study of Sacker et al. It has been shown that the risk of obstetric complications was higher when the mother suffered from schizophrenia than when child’s father suffered from this illness

[41]. Very important conclusions can be also drawn from the analysis of research on the Australian cohort [42]. In a study of women (N = 222) with severe mental illnesses (including psychosis) it was shown that induction of labour was much more frequently used in this group of women if compared to control group. This procedure was used in schizophrenic patients more often because of obstetric, not psychiatric reasons (40% vs. 15%). There is no data concerning how many women in Poland with history of psychotic disorders or bipolar disorders deliver yearly. It is also unknown what mode of labour is most common in this group of patients. It seems, however, that due to the increased risk of developing psychotic symptoms in the postnatal period, it is important to prevent both perinatal complications, and development of mental disorders.

The role of oxytocinergic system and changes in oxytocin concentration (hormone usually used to induce the labour) in the development of psychotic symptoms are still not clarified. Because of that, it is advised to avoid using the oxytocin receptor ligands in women with a history of psychotic disorders [43]. The infusion of oxytocin during perinatal intervention causes the rapid increase and then the cascade decrease of this substance in the plasma. In the early postpartum period the rapid increase of corticotropine releasing factor (CRF), estrogen and progesterone creates a hormonal risk for developing a psychotic disorder [44].

Clinical cases

Case 1

32 year-old patient, married, no children, trying to get pregnant for a long time, in the 26th week of her first pregnancy came to a psychiatrist because of fear of childbirth. She had no previous psychological problems. Because she worked in multidisciplinary hospital, she often listened to stories about the dramatic course of childbirth and pregnancy-related complications. In addition, her friend had long and very painful childbirth. From the beginning of pregnancy she wasn't thinking of happiness associated with having a baby but about the circumstances of birth, the pain and possible complications for her and her child. As time passed, these fears grew. She shared it with a gynecologist, but he claimed that there is nothing to worry about. The doctor spent a lot of time evaluating her physical state, but did not discuss the subject of delivery, saying that most women have a fear of childbirth, but there is nothing to worry about. Around the middle of pregnancy the patient began to discuss the possibility of performing CS which would allow her to avoid problems associated with vaginal birth and possible complications for the baby. The gynecologist said that the pregnancy is going well and there is no indication for CS.

It resulted in a significant increase in patient anxiety. She complained she could not stop thinking about delivery, had difficulty sleeping, was inactive during the day, felt anxiety and was often crying. Her husband tried to comfort her, distracted her attention from the subject, helped her with the housework. The patient reported her condition to gynecologist asking for drugs to “calm down”, but the doctor refused. Because all the above symptoms increased, the patient went to a psychiatrist for help. She was diagnosed with anxiety disorder, but due to pregnancy, no pharmacological treatment was recommended. The interview posited that the main source of her anxiety was primarily the fear of discomfort (mainly pain) associated with the birth and the feeling that no one would take seriously her request to perform CS. She asked if she could get a certificate from a psychiatrist that due to the state of her health it is recommended to deliver by CS. Psychiatrist assured the patient that her problems are treated very seriously, that at this moment it is too early to decide on the necessity of CS but if her condition requires so, she will get such a certificate. Also he recommended to start cognitive-behavioural psychotherapy and planned the next consultation after a month. At that time the patient’s complaints were significantly less severe, but she still wanted to receive a certificate. This also resulted from a conversation with a gynecologist, who still questioned the necessity of CS, although he did not deny completely such a possibility. Four weeks before the expected term of birth, the patient went to a psychiatrist, who confirmed the persistence of anxiety and fear of childbirth (although in much lower level) and gave her a certificate that due to her medical condition, the possibility of CS should be considered. After receiving a certificate from a psychiatrist the patient did not show up for follow-up consultation, so probably her problem has been solved.

Case 2

33 year-old patient, married, a university degree, treated with SSRI antidepressant because of depressive reactions observed because of mobbing in the workplace. She was diagnosed and treated for infertility since she was 30. In diagnostic laparoscopy she was diagnosed with endometriosis and fallopian tubes obstruction. Eventually she became pregnant as a result of in vitro fertilisation procedure (intracytoplasmic sperm injection – ICSI). Pregnancy, till 33 weeks, went without complications. Then she was diagnosed with pregnancy induced hypertension and treated typically with methylodopa with a good control of blood pressure. Proteinuria occurred in the 36th week of pregnancy. Due to worsening of the fetal welfare parameters in the subsequent days, the decision to induce the labour in 37th week of gestation was made. The patient was convinced that CS delivery would be safer for her and her child, and asked the doctor to perform that procedure. However, controlled pregnancy induced

hypertension has not been interpreted by doctors from Department of Pathology of Pregnancy as an absolute indication for CS delivery. Obstetrics decided to induce the vaginal labour. At this time anxiety and insomnia increased in the patient. However, it was interpreted as a physiological situation, with anxiety occurring in last days before birth. She was not consulted by a psychiatrist due to the lack of such consultant in that hospital. Birth proceeded with complications and was completed with forceps because of the risk of premature detachment of placenta and the lack of progress of labour in the second stage of labour. The baby was born with signs of moderate birth asphyxia (Apgar score – 5 points). The infant stayed for a couple of weeks in the Neonatal Intensive Care. After discharge the infant remained under the neurologist care and from 8 weeks of age was rehabilitated physically. Since the birth the patient gradually developed the symptoms of anxiety, depressed mood, difficulty sleeping. The patient was concerned about the health of the child, was afraid of the consequences of perinatal hypoxia and the final assessment of the neurological state of the infant. She felt that the medical staff did not perform well during the labour phase. She planned to sue the staff for medical malpractice and ask for compensation. She wished she had been more assertive towards staff in demanding CS. She blamed herself that she had trusted the personnel more than her own intuition. Due to the worsening of depression, anxiety and insomnia the escitalopram therapy was started and the patient had discontinued breastfeeding. She was also put at supportive psychotherapy. Over the next several months after delivery she repeatedly experienced anew all the circumstances of her stay in the pregnancies pathology ward, doctors' refusal to perform CS, and the lack of due diligence during the vaginal delivery. Content related to the events from the delivery room repeatedly returned to the patient's dreams and become ruminations. In addition, in circumstances reminding of the traumatic birth the panic attacks appeared. She also avoided the area in which that maternity hospital was placed. She had difficulty sleeping. Over the next few years she was treated with the diagnosis of depressive syndrome first, then with posttraumatic stress disorder. She received antidepressants, SSRIs, first escitalopram in a dose of 10 mg, and from the second year of treatment sertraline in maximum dose of 100 mg/day. PTSD symptoms tended to disappear in 3–4 years after the delivery.

Discussion and recapitulation

The two cases of mental disorders were presented above. Their development was directly connected with the circumstances and the type of delivery method.

In Case No. 1, symptoms of severe fear of childbirth, which can be classified as primary tokophobia in term of Hofberg [15] were presented. In that case the development of a pathological fear of delivery was associated with a particular type of

her profession. The patient for many years had been in contact with employees of multiprofile hospital where also gynecology and obstetrics ward was situated. She heard of various situations related to perinatal complications, and at the same time did not have enough medical knowledge to understand the clinical conditions of such complications. She interpreted deliveries as brutal events bringing tortures and unimaginable suffering.

Although she never gave a birth, she participated as a witness at many deliveries running with complications, resulting with neonatal disabilities. Because of that she revealed the anxiety symptoms suggesting PTSD. The anxiety exacerbated when she was expecting her own child. She was not concerned with physical pain and suffering associated with the labour but on perinatal complications that may lead to hypoxia or trauma of the baby. Cognitive-behavioural therapy as a way to reduce the anxiety before birth was not as effective as letting her choose the mode of delivery. Also the psychiatric indication for CS was decisive for therapeutic intervention.

In the second case the symptoms of anxiety of birth were not strong enough and patient did not insisted on the CS delivery. However, after experiencing the traumatic labour, she developed symptoms of depressive disorders, and then chronic PTSD.

The symptoms may be classified as a secondary tokophobia (in term of Hofberg) [15]. Because she had the history of depression it couldn't be excluded that the risk of postpartum depression would be increased. However, apart from depressive symptoms, the symptoms of PTSD were observed. Besides she had memories of trauma and experienced panic attacks in situations reminding the traumatic circumstances and the place of labour. The patient also blamed herself that she could not influence on the method of delivery. Further she thought that the medical treatment she got, led to health complications for the baby, which she could have prevented, if she had been more assertive.

Both cases illustrate the need to pay special attention to the fact, that fear of childbirth may be important indication for CS, even if there are no biological determinants for it. Refusal to perform CS may result in that fear of childbirth can cause specific biological consequences, such as increased risk of developing postpartum depression and perinatal medical complications. The largest study on that matter confirmed that fear of childbirth, the intensity of which required medical intervention, is an important predictor of the development of postpartum depression [34]. In the study by Hofner and Brockington it was also confirmed that if the patient is not allowed to participate in the decisions regarding the method of delivery and/or it was refused to perform a CS on her request, the risk of postpartum depression and PTSD increases [28]. It can be assumed that women experiencing such severe fear of childbirth should have the possibility to deliver by CS to prevent them from depressive disorder in the postpartum period.

The next issue are the biological consequences of tokophobia for the health of infants born from women with high level of anxiety (as a manifestation of tokophobia or other mental disorders). It has been shown that in women with tokophobia the first and the second stage of labour are extended for approx. 30 % [14]. Prolonged delivery can directly influence the fetus welfare and increases the risk of surgical procedures (VE or forceps delivery) or emergency CS, which increases the probability of perinatal injuries.

Based on those two cases and cited literature data, the psychiatric indications for the CS delivery can be divided into two groups.

The first group of indications may be a result of history of mental disorders, or direct observation of changing pregnant women's behaviour during the entire course of pregnancy or in antenatal period. Inadequate behaviour of patients with severe psychiatric disorders (e.g. psychotic or affective disorders, but also with mental retardation) can raise a question about the ability for cooperation during labour. In such a case, the psychiatrist's opinion mainly assesses that ability. The level of this cooperation depends on the type and severity of mental illness. In case of severe mental disorders (such as psychotic disorders, mood disorders, severe anxiety disorders) the CS delivery may result in improved control of the course of labour. It may also prevent the development of perinatal complications resulting from the extended labour which is the effect of poor cooperation during the labour or unexpected exacerbation of psychosis in perinatal period.

The second group of indications is the presence of a strong fear of labour (tokophobia). That type of anxiety appears usually in women with other types of anxiety disorders (e.g. generalised anxiety disorder, panic disorder) or as an anxiety occurring in the course of depressive disorders. The type of tokophobia whose symptoms may be reduced effectively by psychoeducation or psychotherapeutic intervention has not been characterised in the literature yet. In Polish schools of labour that kind of psychoeducational programs are offered. The most practical features of tokophobia, which show the absolute indication for CS delivery, were published in the National Institute of Health and Care Excellence (NICE) guideline in 2013 [3]. According to these clinical standards, every pregnant woman with symptoms of fear for delivery should be consulted by a specialist in the field of mental health of pregnancy and puerperium period. Before such a consultation she should be offered the consultation to discuss both methods of delivery and its medical consequences [3]. According to NICE guidelines the pregnancy should be completed by CS if pregnant woman with tokophobia after a series of psychoeducational sessions still do not agree on vaginal delivery [47].

There is no Polish data on preferred modes of delivery in women with serious mental illness (schizophrenia, or other psychoses or bipolar disorder). It has been

shown, however, that in women with schizophrenia the risk of complications of both pregnancy and childbirth is increased. It has also been proved that perinatal complications are one of the risk factors of schizophrenia [45]. It should be discussed if exposing women treated for psychosis for perinatal complications resulting from ‘medicalization’ of vaginal delivery (e.g. pharmaceutical induction of labour) does not increase the risk of psychosis in children born from those deliveries. Further, it has been proved, that women treated previously for psychosis has two times higher risk of complications of pregnancy and childbirth (as a premature birth or low newborn birth weight) [46]. Thus, patients with a history of psychosis, require increased attention from both psychiatrists and obstetricians. Further research is also required to find the influence of surgical deliveries or natural births complicated by serious infant state on postpartum mental problems in women who planned to deliver by elective CS, but were not qualified for it.

Conclusions and the proposal of psychiatric clinical recommendation for the elective cesarean section

1. Fear of the childbirth and psychological and psychiatric conditions associated with it, may be a very important issue related with choosing the method of delivery.
2. Pregnant women with mental disorders require close cooperation between the obstetricians and psychiatrists specialised in the subject of mental disorders associated with somatic state. Such cooperation should lead to preventing both obstetric and psychiatric complications during the pregnancy and labour in women experiencing severe symptoms of anxiety or other mental disorders.
3. In the case of pregnant women with a history of psychiatric disorders proposed decision about the type of delivery should be preceded by a psychiatric consultation.
4. In recent NICE guidelines elective CS is allowed in women with pathological fear of childbirth, who do not agree for vaginal delivery. The patients are obliged to attend a series of psychoeducational meetings during which they discuss vaginal and CS methods of delivery and its medical consequences [2, 43].
5. Severe tokophobia and history of depression treatment may be the risk factors for postpartum depression and PTSD. Therefore, the refusal of vaginal delivery by the patients seems to be an important psychiatric indication for elective CS.
6. In the case of pregnant patients with psychosis, elective CS may be a method of choice, assuming that the risk of perinatal complications during vaginal delivery may increase the risk of psychosis in the development of the children. Because the effect of oxytocin (used during labour) on exacerbation of psychosis is still unclear in women with history of psychosis, oxytocin should be avoided.

7. Pregnant patients with a diagnosis of mental retardation have the increased risk of perinatal complications. They require increased obstetricians' attention, and the diagnosis of mental retardation may be an indication for elective CS.

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