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SHORT COMMUNICATION

Somatic symptom disorder manifested as acute abdominal pain during pregnancy preceding perinatal depression: a case report

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Abstract
Somatic symptom disorder (SSD) occurring as abdominal pain during pregnancy can be very difficult to distinguish from physical diseases; prompt diagnosis and appropriate treatment are required. SSD can develop into perinatal depression, which may need intensive psychiatric intervention. Here, we present the first case report of SSD preceding perinatal depression. This case shows the clinical importance of SSD in obstetrics both as a cause of abdominal pain and as a precursor of depression.

Keywords Somatic symptom disorder · Postpartum depression · Perinatal mental health · Abdominal pain during pregnancy

Introduction

Abdominal pain during pregnancy is always a challenge for obstetricians (Sharp 2002). There are cases of acute abdomen, which has an incidence of 1 in 500–635 pregnancies and usually requires surgical treatment (Augustin and Majerovic 2007). Pain caused by threatened preterm labor or constipation is very common and relatively easy to manage, whereas pain caused by abdominal diseases not related to pregnancy such as appendicitis, cholecystitis, and malignancies can widely vary and be challenging (Table 1). There can be severe and advanced cases resulting in poor fetal and maternal outcomes; thus, it is important for obstetricians to consider as many diseases as possible in the differential diagnosis for abdominal pain during pregnancy. However, proper assessment of psychiatric diseases by doctors other than psychiatrists tends to be difficult. Therefore, pain that results from a psychiatric condition may be underestimated or even recognized as non-pathological.

A somatic symptom disorder (SSD), formerly referred to as a somatoform disorder, is a mental disorder diagnosed when a patient has severe disabling physical pain that cannot be sometimes explained by physical examination or attributed to any other mental disorder (American Psychiatric Association 2013). Somatization itself results from an interaction between the mind and body and is not necessarily pathological. Owing to its nature, its diagnosis and appropriate treatment are often very difficult; it can be associated with or influenced by other psychiatric diseases such as depressive and anxiety disorders (Kelly et al. 2001). Although medications such as painkillers and antidepressants and approaches such as cognitive behavioral therapy have been applied, there is no established treatment yet. SSD can occur in pregnant women, and it can become a serious issue. Few reports have indicated an association between somatization and postpartum depression (Bergink et al. 2011; Caparros-Gonzalez et al. 2017). However, to the best of our knowledge, there has been no report focusing on SSD during pregnancy.

Here, we report the detailed clinical course of a case of SSD during pregnancy. This case shows the clinical importance of SSD in obstetrics both as an antecedent disease to postpartum depression and as an important differential diagnosis for acute abdomen during pregnancy.

Case report

A 37-year-old nulliparous Japanese woman without any psychiatric history achieved pregnancy with the support of clomifene and human chorionic gonadotropin. After finding out about her pregnancy, she visited a local obstetrician for severe squeezing pain in her lower abdomen. No other symptoms such as diarrhea or vomiting were noted. Her pain

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Table 1 The differential diagnosis for acute abdomen during pregnancy

Obstetrical
Miscarriage, ectopic pregnancy, threatened preterm labor, uterine rupture, placental abruption
Gynecological
Pelvic inflammatory disease, rupture/torsion of ovarian tumor, ovarian bleeding, degeneration/torsion of uterine fibroid, malignant tumors
Others
Gastroenterological
Appendicitis, cholecystitis, diverticulitis, gastritis, enteritis, pancreatitis, gastrointestinal perforation, gastrointestinal tumor, intestinal obstruction (ileus), constipation, irritable bowel syndrome, malignant tumors
Urogenital
Urolithiasis, renal infarction, pyelonephritis, malignant tumors
Hematological
Acute porphyria, thalassemia, leukemia
Vascular
Mesenteric arterial embolism, dissection of the aorta/superior mesenteric artery
Trauma in the abdomen
Hematoma in rectus abdominis muscle
Extra-abdominal
Acute coronary syndrome, pulmonary embolism, pneumonia
Psychiatric
Somatic symptom disorder, major depression disorder/perinatal depression, conversion disorder

worsened as her pregnancy proceeded. At 28 weeks of pregnancy, she was referred to our hospital, which is one of the tertiary perinatal centers in central Japan. At that time, she was afebrile, and her laboratory examination and obstetric ultrasonography showed no abnormal findings (cervical length of 34 mm). Ritodrine for tocolysis was started as a diagnostic treatment although tocogram showed only weak uterine contractions. Additionally, magnesium oxide and Daikenchuto as antiflatulent agents and acetaminophen for pain relief were administered, but there was no improvement. At 29 weeks of pregnancy, her pain became so severe that she called nurses very frequently and wanted to undergo delivery. Besides, she had suicidal feelings. Magnetic resonance imaging, gastroscopy, colonoscopy, and urological ultrasonography could not identify the cause of her pain. Acute porphyria, autoimmune disease, and urinary malignancy were excluded. Only the administration of olanzapine, which is one of antipsychotics widely used for schizophrenia and bipolar disorder, was effective and made her pain milder. A multidisciplinary conference was held, and her pain was considered to be associated with a pathological mental state that was expressed as a somatic symptom. She was diagnosed with SSD, which was more specifically associated with a sub-category of a pain disorder. Although she had extreme anxiety, she experienced some relief after receiving sufficient explanation about her condition, and she resumed follow-up in the outpatient obstetric department. Her psychiatric follow-up was performed in parallel on the same days as her prenatal check-ups. At 40 weeks of pregnancy, she was admitted because of the onset of labor, and she delivered a healthy boy weighing 3048 g.

In puerperium, her physical course was good, but her mental course was poor. On the seventh day after delivery, her husband called us for help because she had shut her room, seemed out of energy, and said that she did not want to be with her son or even look at her son's face. She was taken to a psychiatrist at our hospital. She complained of insomnia, restlessness, mild continuous abdominal pain, and negative feelings toward her son. Finally, she was diagnosed with severe perinatal depression. She was prescribed mirtazapine (an antidepressant, 15 mg/day) and lorazepam (an anxiolytic, 0.5 mg, according to request) in addition to olanzapine (already prescribed), which was gradually tapered off and discontinued at 10 weeks postpartum. Mirtazapine was replaced with escitalopram oxalate (an antidepressant) and eszopiclone (a hypnotic) on her request because of weight gain at 36 weeks postpartum, and eszopiclone was replaced with trazodone hydrochloride (an antidepressant) because of the side effect of headache at 45 weeks postpartum. Her depression needed long-term follow-up, which ended at 19 months postpartum with her depression in a remission state.

Discussion

The present case highlights two points of clinical importance. First, SSD should be considered in the differential diagnosis of

abdominal pain during pregnancy. Second, SSD can progress to perinatal depression.

SSD has an estimated prevalence of 19% in adults (American Psychiatric Association 2013), and they could occur with acute abdominal pain during pregnancy, as in the case of our patient. Although their prevalence during pregnancy has not been reported, it is believed to be higher than that in the general population, considering multiple physical burdens associated with pregnancy (Otchet et al. 1999) and a possible sex difference in the pathophysiology of SSD (Bitzer 2003). Abdominal pain during pregnancy can sometimes be difficult to diagnose. In most cases, it is due to common pregnancy complications such as threatened preterm labor, which would be relieved by tocolysis, and constipation. It may involve obstetrical emergencies and non-obstetrical acute abdomen, which require prompt diagnosis and treatment. Placental abruption and uterine rupture are obstetrical emergencies that threaten the lives of both the pregnant woman and her baby, and obstetricians are always alert with regard to these issues. On the other hand, acute abdomen is often very difficult to accurately diagnose and properly manage. It is mainly because imaging studies such as ultrasonography and computed tomography (CT) may not be appropriate owing to a distended uterus and unavailability of contrast agent. CT imaging might be rejected by pregnant women for fear of possible harm to their babies, and doctors may be reluctant to perform possibly unnecessary examinations or treatments in pregnant women (Augustin and Majerovic 2007). When imaging and laboratory examinations fail to explain abdominal pain, the situation can become very confusing, and the condition might be judged as "nothing particular." It is very difficult to know whether the pain originates from some organic abnormality or some inappropriate mental state such as SSD. SSD should be included in the differential diagnosis of unexplained abdominal pain during pregnancy to avoid possibly adverse unnecessary examinations or treatments, including enhanced CT imaging, medication trial, and exploratory surgery, for the safety of both the pregnant woman and her child.

SSD develops into or is followed by depression because somatic symptoms themselves are important risk factors of depression. Thus, obstetricians should be careful of the development of perinatal depression secondary to or complicating SSD. The relationship between SSD and depression has not been established till date, partly because of their overlapped patient population and transition of the SSD definition. However, SSD and the increasing mental burden of pregnancy, delivery, and childbearing can synergistically induce a depressive state, as was noted in our case. Bergink et al. (2011) reported that the Edinburgh Depression Scale has high validity with somatization subscales in the Symptom Checklist 90. Caparros-Gonzalez et al. (2017) reported that somatization, especially in the first and second trimesters of pregnancy, can predict postpartum depression. SSD can be so severe that it may drive patients to attempt suicide without clear expression of their emotional disturbances (Kampfer et al. 2016). To date, there has been no standard intervention for mental disorders during pregnancy, including SSDs and perinatal depression. However, antipsychotics and other psychotropic drugs can be effective for treatment as in our case, and a recent meta-analysis suggested that cognitive behavioral therapy, body-oriented therapy, and acupuncture may be effective approaches (van Ravesteyn et al. 2017). When SSD is followed by perinatal depression, the situation can become very complicated, and close coordination is essential among obstetricians, psychiatrists, and other associated co-medical workers. In addition, infertility treatment might have had some influence on the pathogenesis of SSD and perinatal depression in our case. However, the association is yet controversial; some papers are in favor of (Monti et al. 2009) and others are against it (Gressier et al. 2015).

In conclusion, our case showed that SSD should be recognized as an important cause of acute abdominal pain during pregnancy and that it is a possible precursor of perinatal depression. SSD should be kept in mind not only by psychiatrists but also by obstetricians and obstetrical care providers.

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Compliance with ethical standards

Conflict of interest The authors declare that they have no conflicts of interest.

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