A COMBINED FORM OF EATING DISORDER DURING PREGNANCY—A CASE REPORT

Darina Naydenova, Dimitar Marinov

Department of Hygiene and Epidemiology, Faculty of Public Health, Medical University of Varna

ABSTRACT

Introduction: *Eating disorders (EDs) are most common in women of childbearing age, incl. during pregnancy. The available data show that ED increases the risk of miscarriage, premature birth, low birth weight, as well as psychopathological and socio-emotional problems in the child's development.*

Materials and Methods: *We present a case from the practice of a medical specialist in nutrition and dietetics. The patient is a woman, pregnant at 26 GW with a combined form of ED (new-onset pregorexia on the background of long-term bigorexia). A set of clinical methods were used to assess the nutritional assessment: detailed nutritional history, dietary intake, clinical examination, anthropometry, and laboratory methods.*

Results and Interpretation: *The therapeutic approach included motivating the patient to achieve adequate dietary carbohydrate intake and professional advice on choosing appropriate alternatives. The young woman agreed to meet with a specialist in cognitive behavioral therapy and managed to overcome the self-imposed dietary restrictions. Whole grains and some types of legumes were successfully included in her diet. Her pregnancy reached full term and she delivered a healthy child. This clinical case demonstrates that in some instances of ED there can be a lack of significant deviations in biochemical tests, which complicates the diagnostic process. Thus, a correct diagnosis requires a careful approach while taking the patient's medical history and in-depth conversation about the patient's behavior and habits. Scientific data strongly suggests there are both short- and long-term negative health consequences for the children of mothers suffering from ED during pregnancy. It is important to offer professional advice to pregnant women with ED about the possible effects of their eating patterns on the health of the child.*

Keywords*: eating disorder, pregnancy, bigorexia, pregorexia, pregnancy outcome*

INTRODUCTION

The incidence of eating disorders (EDs) in women of childbearing age is the highest of all age groups, and it has been steadily increasing in recent decades. Little is known yet about the effects of ED during pregnancy and the impact on the health of babies born to women with ED. The results of studies published so far show that both anorexia nervosa and bulimia nervosa can lead to unfavorable pregnancy outcomes. A history of pre-pregnancy or new-onset ED during pregnancy is associated with a higher risk of miscarriage, premature birth, fetal malnutrition, and low birth weight (2). A retrospective study (3) found a higher incidence of eating disorders amongst women giving birth to small-for-gestational-age (SGA) infants. A study of more than 300 pregnant women with ED and more than 900 healthy expectant mothers showed women with ED are at twice the risk of having a baby with low birth weight (9). The risk of premature birth and the birth of SGA infants (i.e., malnourished) is 70 and 80%, respectively. A prospective Swedish study among 59 pregnant women with ED and 68 healthy women found similar data, as well as a significantly higher risk of microcephaly in newborns: 8% in the ED group versus 2.5% in the general population, ($P<.05$) (6). To exclude the influence of confounding factors, smokers were excluded from the study (smoking is known to limit intrauterine growth.

The exact causes of low birth weight, small head circumference, and higher risk of microcephaly in children born to mothers with ED are not entirely

clear. On the other hand, the physiological changes in weight and body shape in pregnant women with ED are commonly a cause of depression, stress, and unpleasant experiences (4,7). Inadequate nutrition combined with impaired self-esteem is thought to cause high levels of stress in pregnant women with ED. Women with anorexia nervosa have elevated plasma cortisol levels, which are associated with fetal cortisol concentrations and brain development, respectively (5). The available data indicates that children born to mothers with ED are at an increased health risk regarding their future eating behavior (1). Psychopathological and socio-emotional problems are more common amongst these children and they are more likely to be described as people with difficult temperament (8, 10). The mother's ED has an impact on the child's psychology, cognitive abilities, and eating behavior and may contribute to the development of ED later on in the offspring.

MATERIALS AND METHODS

We present a case from the practice of a medical doctor, a specialist in nutrition and dietetics. The case is a pregnant woman with a mixed form of ED: pregorexia and bigorexia. A set of clinical methods were used to assess the nutritional status: detailed nutritional history, examination, anthropometry, laboratory methods, food diary method.

RESULTS

The patient was a 28-year-old woman, with the initials E.P., dentist, pregnant in 26th gestational week. She was referred to a specialist in nutrition and dietetics by her obstetrician. The reason for the referral is ultrasonographically established slow intrauterine growth of the fetus. The doctor supervising the pregnancy had serious concerns about the delay in the growth of the fetus and lack of adequate linear growth corresponding to the gestational age of the pregnancy.

Results of the somatoscopy, examination, and anthropometric measurements of E.P.: A young woman with athletic body shape, strong muscles of the shoulder girdle, thighs, and hips. Enhanced definition of the subcutaneous veins on the wrists and forearms of both hands which is usually typical for men with well-developed, well-trained muscles and a very low percentage of body fat. The physiological subcutaneous fat deposits in the area of the hips, thighs, abdomen, and chest, which are typical for a pregnant woman, are missing. There are no stretch marks or increased abdominal pigmentation (linea nigra). On a remark related to her elegant body shape, she replies that she is unhappy with her appearance because she has almost lost the definition in her abdominal muscles. The patient shares about her passion for fitness which has last for almost 10 years. She reports that periodically she gets in very good shape when preparing for a competition, but unfortunately, she can't maintain it for long. Since she is pregnant, she has seriously reduced her training because during a session she feels weakness and nausea. The fact that she does not exercise as much as before pregnancy worries her and is one of the reasons why she reduces her food intake. The patient reports that she is very careful not to eat too many carbohydrates. All of her carbohydrate sources include 1–2 times a week boiled rice or sweet potatoes as a side dish for lunch and sometimes—2–3 dates or a raw cereal bar when she gets a craving for something sweet. She does not eat soups and dishes with sauce, prefers "clean" foods (i.e., with few components). She drinks mostly water (with soaked chia seeds), decaffeinated coffee, kefir, and matcha tea. Her bodyweight before the pregnancy was 56 kg at a height of 173 cm (BMI = 18.5 kg/m2) and for the first six months she gained only 3 kg. She states that her goal is to gain no more than 4–5 kg for the whole pregnancy. According to her, this is the weight of the baby and amniotic fluid and it is not necessary for her to "accumulate excess fat". The only ailments for her so far have been related to nausea in the first 5–6 weeks of pregnancy, especially when she was exercising and reports reduced endurance during training. She currently follows a "lighter" training program, 5 sessions a week with a personal trainer. She takes folic acid, magnesium, and probiotics. There are no deviations in her laboratory parameters. Her food diary is presented in Table 1:

The therapeutic approach towards the patient included explaining and providing scientific resources justifying the need for carbohydrates during pregnancy as well as advice on choosing appropriate alternatives in the daily diet. The young woman readily accepted the advice provided and agreed to meet with a specialist in cognitive behavioral therapy (experienced in the field of eating disorders). She managed to overcome the self-imposed food restrictions. Her diet was improved by including spelt bread, more often rice, pasta, and buckwheat, as well as some legumes. Her pregnancy reached full-term and the total weight gain for the entire pregnancy of 6 kg. She gave birth to a healthy baby girl which had 2.550 kg weight and 48 cm height. Currently, she successfully breastfeeds her child (3 months old).

Table 1. Food diary of E.P.

Wednesday	Chia in water (about 400 mL) Decaffeinated coffee, clean *Breakfast:* Pancake made of an egg, almond flour, almond milk 1 apple *Second breakfast:* Kefir 2% fat *Lunch:* Chia in water Pan-fried turkey meat + iceberg lettuce with avocado and olives *Snack:* Skyr (Icelandic yogurt) 150 g with 3 dates *Dinner:* Chia in water Grilled skinless sea bream fillet + stewed vegetables „Imperial mix" (broccoli, cauliflower, peas, carrots) *Before sleep:* Protein shake (without carbohydrates)
Thursday	Chia in water (about 400 mL) Decaffeinated coffee, clean *Breakfast:* Smoothie with avocado, cucumber, pineapple, and pea protein *Second breakfast:* 2 tangerines *Lunch:* Chia in water (about 400 mL) Omelet with 2 eggs, cottage cheese, and grated zucchini Boiled brown rice *Snack:* Chia in water (about 400 mL) Mozzarella cheese with a few cherry tomatoes *Dinner:* Chia in water (about 400 mL) Beef burger with beet salad and a carrot 1 apple *Before sleep:* Protein shake (without carbohydrates)

DISCUSSION AND CONCLUSION

The presented case demonstrates a combined form of ED, including long-term bigorexia (muscle dysmorphia) and new-onset pregorexia. Furthermore, this clinical case demonstrates that in some instances of ED there can be a lack of significant deviations in biochemical tests, which complicates the diagnostic process. Thus, a correct diagnosis requires a careful approach while taking the patient's medical history and in-depth conversation about the patient's behavior and habits. Scientific data strongly suggests there are both short- and long-term negative health consequences for the children of mothers suffering from ED during pregnancy. It is important to offer professional advice to pregnant women with ED about the possible effects of their eating patterns on the health of the child.

REFERENCES

1. Arnold C, Johnson H, Mahon C, Agius M. The effects of eating disorders in pregnancy on mother and baby: a review. Psychiatr Danub. 2019 Sep;31(Suppl 3):615-618. PMID: 31488801.
2. Bulik CM, Sullivan PF, Fear JL, Pickering A, Dawn A, McCullin M. Fertility and reproduction in women with anorexia nervosa: a controlled study. J Clin Psychiatry 1999;60:130–7.
3. Conti J, Abraham S, Taylor A. Eating behavior and pregnancy outcome. J Psychosom Res 1998;44:465–77
4. Fogarty S, Elmir R, Hay P, Schmied V. The experience of women with an eating disorder in the perinatal period: a meta-ethnographic study. BMC Pregnancy Childbirth. 2018 May 2;18(1):121. doi: 10.1186/s12884-018-1762-9. PMID: 29720107; PMCID: PMC5932857.
5. Glover V. Maternal stress or anxiety during pregnancy and the development of the baby. Pract Midwife 1999;2:20–2.
6. Koubaa S, Hällström T, Lindholm C, Hirschberg AL. Pregnancy and neonatal outcomes in women with eating disorders. Obstet Gynecol. 2005 Feb;105(2):255-60. doi: 10.1097/01.AOG.0000148265.90984.c3. Erratum in: Obstet Gynecol. 2008 May;111(5):1217. Kouba, Saloua [corrected to Koubaa, Saloua]. PMID: 15684148.
7. Makino M, Yasushi M, Tsutsui S. The risk of eating disorder relapse during pregnancy and after delivery and postpartum depression among women recovered from eating disorders. BMC Pregnancy Childbirth. 2020 May 27;20(1):323. doi: 10.1186/s12884-020-03006-7. PMID:
8. Martini MG, Barona-Martinez M, Micali N. Eating disorders mothers and their children: a systematic review of the literature. Arch Womens Ment Health. 2020 Aug;23(4):449-467. doi: 10.1007/s00737-020-01019-x. Epub 2020 Jan 14. PMID: 31938867; PMCID: PMC7368867
9. Sollid CP, Wisborg K, Hjort J, Secher NJ. Eating disorder that was diagnosed before pregnancy and pregnancy outcome. Am J Obstet Gynecol 2004;190:206–10.
10. Watson HJ, O'Brien A, Sadeh-Sharvit S. Children of Parents with Eating Disorders. Curr Psychiatry Rep. 2018 Sep 17;20(11):101. doi: 10.1007/s11920-018-0970-3. PMID: 30221306.

Address for correspondence:
Darina Naydenova
Faculty of Public Health
Medical University of Varna
55 Marin Drinov St
9002 Varna
e-mail: dary_nay@mail.bg