

A case of chronic anorexia nervosa with child-bearing by *in vitro* fertilization necessitating comprehensive team support

Shigeru Toki, Eri Hashimoto, Masayuki Masuda, Akihiko Machino and Shigeto Yamawaki

Department of Psychiatry and Neurosciences, Graduate School of Biomedical Sciences, Hiroshima University, Hiroshima 734-8551, Japan

Corresponding author: Shigeru Toki. Email: shitokigeru@gmail.com

Lesson

Generalists should be aware of the issues surrounding pregnancy in patients with anorexia nervosa and discuss well with patients and their families before *in vitro* fertilization.

Keywords

anorexia nervosa, *in vitro* fertilization, team practice

Case report

The patient was a middle-aged Japanese woman with chronic anorexia nervosa who had visited psychiatric clinics only twice. She had no family history of mental illness. She reported that she began restricting her diet to draw attention for being thin, and developed anorexia nervosa at age 14. Her body mass index dropped to 16.6, resulting in amenorrhea. Her psychiatric symptoms included fluctuating anorexia, stomach pain and malnutrition. At age 27, she married and became a full-time housewife. She has two older sisters, both of whom are married and had a child. However, the patient did not become pregnant in spite of regular intercourse.

At the age of 40, willing to change herself by being a mother, she received *in vitro* fertilization after ordinary screening and became pregnant at a fertility clinic. Although she was underweight, she, her parents and husband hoped that she would have a baby in consideration of her age. After becoming pregnant, her body mass index dropped from 15.4 to 11.7 due to appetite loss. There was progressive worsening of anorexia. She was admitted to an obstetrical section of a hospital because of a hypoglycemic attack caused by excessive exercise. The malnutrition did not alleviate even with nasogastric feeding. At that time, she denied having a body image disorder and ascribed her emaciation to hyperemesis. Being informed about the risk, she and her family promised to monitor her behaviours at home, and she was discharged.

After several months, intensive care was required for the treatment of thrombocytopenia and intrauterine growth retardation, and she was referred to the psychiatric unit of our hospital. Because of poor insight, she was hospitalised by alternative consent given by her husband for medical protection. A comprehensive approach was started, including individual and familial psychotherapy, a dietician's nutritional care and a midwife's perinatal guidance. Because she was conscious of her wanting to be a mother, through assistance with midwives and her family, we started to practise infant care with Ms. A using a baby infant simulator. During the sessions, she received information related to child-bearing and shared worries about it with her family relieving her anxiety. Although she sometimes vomited and hid food, her mental and nutritional status gradually improved. At the 39th week, an emergent caesarian birth was performed because of acute infection in the patient. The baby weighed 2.2 kg, and the Apgar scores were in the normal range. After the caesarean wound was healed, she was discharged and appreciated all of the support provided by the medical team.

After the delivery, she realised that she could neither care for her baby's nutrition nor carry the baby in her arms because of muscle weakness. She and her family consulted with staff at a child consultation centre. The grandparents of the baby were ill, and they could not take care of the baby. Considering the circumstances, the committee of the child consultation centre, consisting of persons engaged in duties relevant to the welfare of children, decided that the baby should be transferred to an infant home according to the Child Welfare Act. Afterwards, as the patient's awareness deepened, she joined a self-help group and inpatient program for anorexia nervosa voluntarily. She told us that she wanted to stroll with her child in the Peace Memorial Park, and also confessed that she had difficulty in abandoning the symptoms of anorexia nervosa, with which she had

lived for nearly 30 y. After two years, because the baby had grown and her mental and physical states improved, she, her husband and her baby started to live together. She became aware of healthy eating habits, preparing balanced meals for herself and her child. Under adequate care, the child was healthy without developmental problems. She expressed her deep affection for the child and her joy when strolling together in the park.

Discussion

Whereas there are some reports of pregnancy in patients with anorexia nervosa,¹ few cases of pregnancy by *in vitro* fertilization in anorexia nervosa patients have been documented. Patients with anorexia nervosa have some difficulties with reproduction, including exacerbation of anorexia nervosa symptoms and preterm birth, as well as infant malnutrition.² Thus, early detection and intervention through team practice are warranted.³ However, although patients with severe anorexia nervosa may have infertility problems,⁴ anorexia nervosa symptoms are often under-recognised at fertility clinics.⁵ In the present case, since the previous history had been scarce and Ms. A had denied her symptoms at first, intensive care was started after worsening of her physical status during pregnancy. Generalists should be cautious about the factious nature of anorexia nervosa pathology.

Mothers with anorexia nervosa generally do not maintain infant's nutrition⁶ and do not have good interacting affections with infants.⁷ Our patient wanted to change herself by being a mother but her motivation for child-bearing fluctuated. Although a higher level of anxiety was reported in women who became pregnant via *in vitro* fertilization, there was no difference in mother-fetus attachment between women who conceived naturally and those who conceived through *in vitro* fertilization.⁸ An increase in mother-fetus attachment was noted in both groups during the late phase of pregnancy. Our patient's pathology initially magnified her anxiety. However in the late phase of pregnancy, enhancing maternal adjustment through team practice was useful for creating a therapeutic alliance for our patient.

Recently, the American Society for Reproductive Medicine addressed the importance of assessing the child-rearing ability of women who seek fertility services.⁹ In the statement, it was recommended that we should reconcile the interests of the offspring, infertile person and provider of fertility services. Several studies revealed that motherhood provided self-esteem for anorexia nervosa patients and emotional support from children.¹⁰ Further studies are warranted,

so that clinicians can know what they should discuss with patients with anorexia nervosa and their families before *in vitro* fertilization, and support them through the entire course of pregnancy.

Declarations

Competing interests: None declared

Funding: None declared

Ethical approval: Written informed consent for the publication of this case study was obtained from the patient. The patient saw the manuscript in the process of obtaining informed consent.

Guarantor: ST

Contributorship: All authors contributed to the writing of the case study.

Acknowledgements: The authors would like to acknowledge the participation and interest of the subject about whom this case report is written.

Provenance: Not commissioned; peer-reviewed by Rahul Bhattacharya

References

1. Manzato E, Zanetti T and Gualandi M. Pregnancy in severe anorexia nervosa. *Int J Eat Disord* 2009; 42(1): 84–86.
2. Ward VB. Eating disorders in pregnancy. *BMJ* 2008; 336(7635): 93–96.
3. Chizawsky LL and Newton MS. Eating disorders: identification and treatment in obstetrical patients. *AWHONN Lifelines* 2006; 10(6): 482–488.
4. Brinch M, Isager T and Tolstrup K. Anorexia nervosa and motherhood: reproduction pattern and mothering behavior of 50 women. *Acta Psychiatr Scand* 1988; 77(5): 611–617.
5. Freizinger M, Franko DL, Dacey M, Okun B and Domar AD. The prevalence of eating disorders in infertile women. *Fertil Steril* 2010; 93(1): 72–78.
6. Micali N, Simonoff E and Treasure J. Infant feeding and weight in the first year of life in babies of women with eating disorders. *J Pediatr* 2009; 154(1): 55–60.e51.
7. Koubaa S, Hällström T and Hirschberg AL. Early maternal adjustment in women with eating disorders. *Int J Eat Disord* 2008; 41(5): 405–410.
8. Hjelmstedt A, Widström AM and Collins A. Psychological correlates of prenatal attachment in women who conceived after *in vitro* fertilization and women who conceived naturally. *Birth* 2006; 33(4): 303–310.
9. Ethics Committee of American Society for Reproductive Medicine. Child-rearing ability and the provision of fertility services: a committee opinion. *Fertil Steril* 2013; 100(1): 50–53.
10. Papadopoulos FC, Karamanis G, Brandt L, Ekblom A and Ekselius L. Childbearing and mortality among women with anorexia nervosa. *Int J Eat Disord* 2013; 46(2): 164–170.