

Monozygotic Twin Concordant Female-to-Male Gender Dysphoria with Different temperament Characteristics

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Abstract

We report seventeen-year-old twins which suffering from gender dysphoria. The first pair twin despite having similar characteristics of gender dysphoria, had apposite temperament. While temperament has been considered to be genetically inherited, the incidence of gender dysphoria in our cases with different temperament raises the question about this paradox.

Introduction:

Gender Dysphoria (GD) is defined as a marked incongruence between one's experienced/expressed gender and assigned gender that the individual feel a strong desire for having the sex characteristics of the other gender(1). In the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), the prevalence for male-to-female gender dysphoria is reported between 5 and 14 per 1000 adult males and 2 and 3 per 1000 adult females for female-to-male gender dysphoria(2). Twin review literature on GD supports the role of genetics in the development of gender identity with a higher GD concordances in Monozygotic (MZ) (37.5%) versus Dizygotic (DZ) (0%) twins; however this concordance in MZ (37.5%) twins found to be less than their discordances (62.5%) among the total of MZ twin pairs(3). Taking the limited number of twin samples and genetic studies in GD, more twin studies could be helpful in making decisive conclusion on the contribution of genetics in GD over environmental factors. In this study we report a monozygot (MZ) female twins that are concordant for GD with surprisingly different temperament features.

Case presentation:

Sisters M.K and F.K are 17-year-old twins. The second pair twin sister; F.K had got divorced recently and attended to our clinic for psychiatric evaluation. She was deeply uncomfortable with her gender to the point that she was disgusted by her first name and had request for Sex Reassignment Surgery (SRS). Furthermore, she liked to act the same as men whether in talking in a masculine manner or wearing men cloths. She was interested in having friendships with males. Instead she was sexually attracted to females. She declares her desire to have a male gender has nothing to do with benefits or grants a man could have in the society. And the only reason she wants to be a man is about her experienced gender which is male identity. She had had cross-gender behaviors since her early childhood (at the age of 3). She would have preferred playing with boys and joining them in the games for boys, like playing football. She used to demand for having hair styles of the opposite sex and since the age of nine she began liking her female cousin very much and having sexual relationship with. She avoided the obligation to sit with girls in the same classroom at school. Going through puberty, it was very problematic for her and her menstrual cycle were lasting for sixteen days. Her

parental rearing and behavior were never masculine and sometime to emphasize on an appropriate feminine attitude they would ridicule her. She then had suicidal idea but for the sake of her mother she did not have any plan or act accordingly.

She got married at the age of 15; had hatred feeling for her husband and disliked the sexual relationship with him. After her parents knew about their daughter problematic behavior, they attended to psychiatrist and Gender Dysphoria revealed as the diagnosis for her. Finally after two years of marriage she got divorced.

She was a baby of unintended pregnancy from 15-year-old mother and she was result of caesarian section delivery within 8th months of gestational age. She has a 4-year-old brother and she mentions that something is always missing in her life. She loves her parents, but no love for her husband; she had a history of depression and suicidal idea and now is working as a waitress in a restaurant.

In mental state examination, thought content was not delusional and there were no other thought disorders including thought form or perceptual disorders. As a result schizophrenia and somatic delusion of transsexualism were rule out.

Intelligence Quotient (IQ) were within normal range. When compared to her twin sister; M.K looked thinner with more feminine appearance. She (the first pair twin sister) also had the same desire to change her gender to opposite sex but this tendency were more intense with more distress in F.K sister. M.K also disliked to be a girl and had a request for SRS. Her IQ and education were similar to the second pair without any mental problem. Although twins had concordant desire regarding their gender identity, their temperament features found to be completely discordant. F.K was a kind of rigid and introverted person while M.K was a flexible and sociable one.

However, in both twin sisters, the physical examination confirmed normal uterus, ovaries and external genitals. Female Secondary sex characteristics were also evident. Skull radiography, adrenal and genitalia sonography were normal and the karyotype chromosomal analysis for both were "46 XX". Psychological tests with different questionnaire including Freiburger Personality Inventory Beck Depression Inventory (BDI); State-Trait Anxiety Inventory showed slightly elevated depressive tendency without any other psychiatric disorders.

Hormonal studies; Testosterone, free testosterone, E2 estradiol, sexual hormone binding globulin, FSH, LH, cortisol, 17- hydroxyl progesterone before and after ACTH stimulating test were within normal range. Molecular genetic analysis with 15 microsatellite for confirming monozygotic showed % ? Probability.

Discussion:

We introduced a monozygot (MZ) female twins with normal physical, mental, hormonal evaluations which were concordant for GD. Within different severity of GD in each pairs, paradoxical temperaments features were also detected between them.

It is speculated that the development of gender in accordance with its anatomical sex in childhood could be directed by children's temperament and their dynamic relationship with parents(4). However, the etiology of GD encompasses complicated biopsychosocial factors; including congenital adrenal hyperplasia or androgen insensitivity syndrome, utero exposure to phthalates in plastics and polychlorinated biphenyls, maternal toxoplasma infection, and in individuals with psychiatric illnesses or with childhood abuse, neglect, maltreatment, and physical or sexual abuse is more prevalent. Neuroanatomical links mostly regarding defects in embryonic development and differentiation in hypothalamic networks and variations in amygdala connectivity and hemispheric ratios according to gender have been also found to be associated with GD. Higher prevalence of GD in monozygotic twins than dizygotic twins has been an indicator of heritability and familiarity of GD in genetic studies. Some alleles (CYP17 and CYP17 T-34C) have also been found to have an association (not causation)(5)(6).

According to multifactorial etiology of GD, alongside genetics other factors may play role in navigating the gender identity. As a result, GD in many children do not continue into adolescence and adulthood(7). In

this case, we need to follow the twins to check if this concordance for GD is going to be consisted and persisted. Then we will be able to better compare their shared temperament characteristics with GD. There is not sufficient papers to evaluate GD by genetics and twin studies and thereby it is not clear the exact contribution of genetics, familial rearing and environmental factors in the formation of GD. Some other questions also raises like; is it possible that the idea of having SRS shaped as a shared belief between them? Could it be a form of sympathetic reaction that the other pair used to cope situation? How does their concurrent decision for SRS influence the situation? Is it going to be more deteriorating or more acceptable for the parents to get on with? Is this concordance facilitate the pain they have for their gender identity?

Conclusion: In this study we presented twins having concordance GD. It could emphasize the genetic role in GD inheritance but when it came to their different temperaments we assumed this disorder need to be followed up. On the other hand, concordancy in monozygotc twins is still questionable for temperament and gender dysphoria. More twin studies in the future with follow-up will enable us to answer these questions

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We appreciate the twins and their family cooperation in this study.

Conflicts of Interest:

None

Authors' Contribution:

MN visited the patient and referred to RB. RB visited the patient and had comprehensive psychiatric interview with patients, RN collected the accessory data from patient and her family. FD wrote the manuscript.

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