CASE REPORT

Complete Androgen Insensitivity Syndrome: Diagnosis and Psychological Impact in Two Adolescents, A Case Report

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ABSTRACT

This case report illustrates two cases of complete androgen insensitivity syndrome (CAIS) which is a rare form of sexual development disorder. Both presented with primary amenorrhea at the age of 18 and 19 years old. The hormonal profiles ruled out hypothyroidism, hyperprolactinemia, and primary ovarian failure. Magnetic resonance imaging of both patients showed the absence of uterus, fallopian tubes, ovaries, but the presence of proximal 1/3rd of the vagina. There is a single testis in the left inguinal region with unknown status of spermatogenesis. Women with CAIS are vulnerable to various psychological conditions caused by the appalling fact of being genotypically male when they have been raised female all their life. The gender confusion, reproductive issues, and how others perceive them require sensitive support. Hence, accentuate the need to explore and address the emotional, psychological, and psychiatric vulnerabilities, religious and spiritual beliefs in issues of relationships, infertility, and conception.

Keywords: Primary Amenorrhoea, Infertility, 46 XY Female, Complete Androgen Insensitivity Syndrome, Psychological impact

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INTRODUCTION

Androgen Insensitivity Syndrome (AIS) is a condition due to the mutation in the androgen receptor gene causing deficiency in the action of androgens and hence incomplete masculinization. (1,2) CAIS is the rare form of disorders of sexual development (DSD), which has a complete female phenotype but an XY karyotype, formerly known as testicular feminization (TF) (1,2). The prevalence of CAIS is low that only isolated cases are reported. (1,3) In Malaysia, up to date, there were only two cases of CAIS reported in the literature (3).

Patient with CAIS presents at late adolescent age with female secondary sexual characteristics such as normal breast and vagina development but has absent or sparse pubic and axillary hair with primary amenorrhoea and primary infertility (1,2). This is due to excessive aromatization of androgens of the oestrogen-dependent secondary sexual characteristics (2). Thus, the diagnosis will only be known after they have been sexually reared and socially accepted as a female (4).

Diagnosis disclosure to either the patient or parent currently causes a marked impact in acceptance of the karyotype discrepancy with the phenotype (4). Emotional reaction towards this gender identity confusion may lead to significant psychological distress (5). Patients with CAIS will then be faced with the ultimate consequences of major psychological problems if they are unable to accept the irreversible facts of having to change their sexual life, the impossibility of conception, and infertility (4,5). There is a need for vigilance to identify psychiatric morbidities due to gender dysphoria in women with CAIS such as depression and anxiety (5). The importance of increasing clinical awareness among healthcare professionals is to comprehensively manage the physical diagnosis as well as the psychiatric vulnerability of these patients (5).

CASE REPORT

Case 1

A 20-year-old woman who is otherwise well presented with primary amenorrhoea. She is tall, slim, and has a normal arm span. She has poorly developed breasts, pale areola (Tanner stage 2), absent axillary hair, scanty pubic hair (Tanner Stage 1,) labial folds lacked subcutaneous fat, and hypoplastic clitoris. The thyroid, follicle-stimulating hormone, and prolactin were

normal. MRI of the pelvis confirmed the absence of the uterus, fallopian tubes, ovaries, and upper third of the vagina (Figure 1). Only the lower 2/3rd of the vagina is present and appears normal. A single internal testis was identified at the lower abdomen and pelvis along the left inguinal region. Chromosomal analysis was male karyotype-46, XY.

Case 2

Case 2 is the sister of case 1. She is an 18-year-old who has not attained menarche. Thyroid, follicular and luteinising hormones were normal, but oestrogen level was low at <18.35 with high total testosterone at 3.8 (0.3-1.7). Her abdominal and pelvic MRI showed that she has a blind-ended 3cm vagina with an absent uterus and ovaries (Figure 2). A single undescended testis is suspected from a soft tissue structure in the left pelvic region. Her chromosomal analysis showed 46, XY indicating she is also genotypically a male with the diagnosis of CAIS.

These patients were referred to the adolescent gynaecologist specializing in androgen insensitivity for further treatment. They however refused referral to a urologist to locate and remove their undescended testes.

For these patients, accepting the diagnosis put them in a complete shock and dilemma as they were on the verge

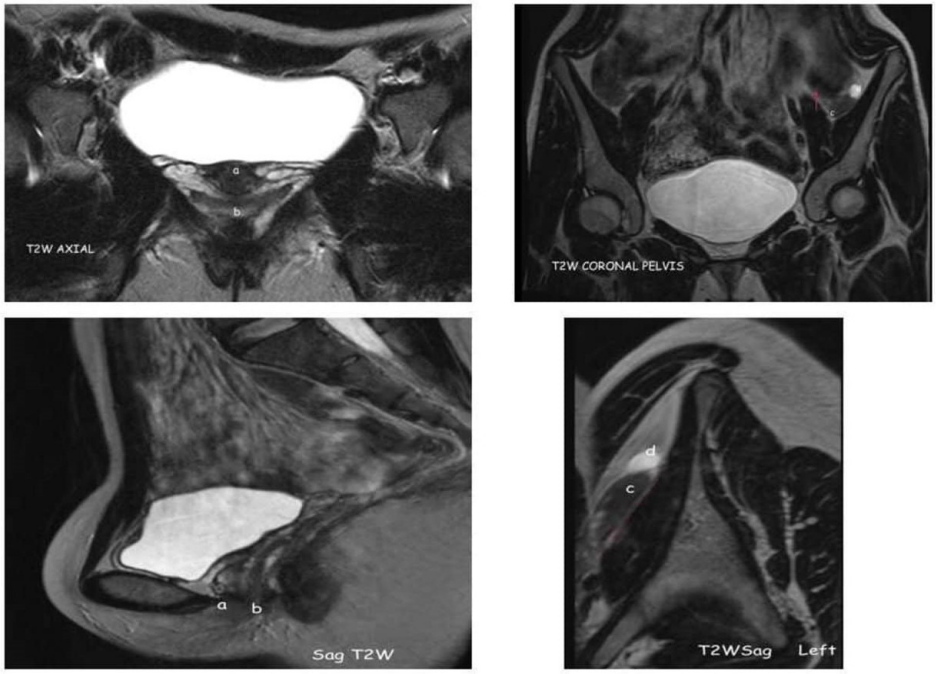

Figure 1: MRI: A 20-year-old female with CAIS syndrome. The axial and sagittal T2-weighted images show present of flattened lower vagina (b) and urethra (a). An axial and sagittal T2-weighted images of the lower abdomen and pelvis revealed left testis along the left inguinal region. The parenchyma shows heterogeneous low signal intensity(c) with paratesticular cyst (d).Testis measures 0.71 x 1.3(AP) x 2.0(wt) x 3.6(Ht) cm=6.55cm^2 The cyst measures 1.3 x 1.0cm. 209x297mm (200 x 200 DPI)

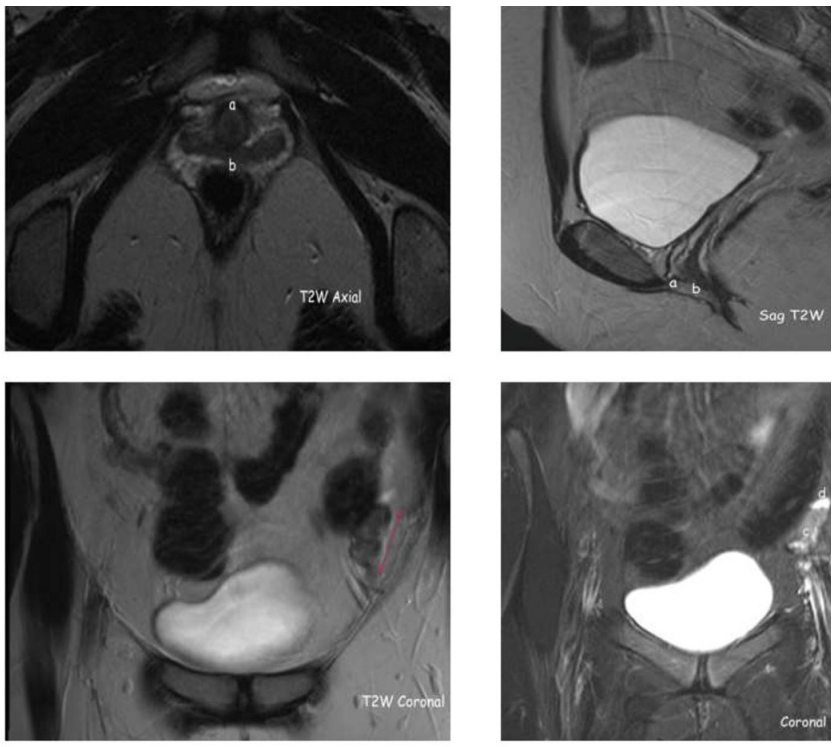

Figure 2: MRI: Similar findings of the younger sister age 18-year-old with CAIS syndrome. The axial and sagittal T2-weighted images show present of flattened lower vagina (b) and urethra (a). An axial and sagittal T2-weighted images of the lower abdomen and pelvic region revealed left testis along the left inguinal region. The parenchyma shows heterogeneous low signal intensity(c) with paratesticular cyst (d). Testis measures 0.71 x 1.35(AP)x 1.7(wt) x 3.8(Ht) cm=6.19cm^2.The cyst measures 1.2 x 0.9cm. 209x297mm (200 x 200 DPI)

of developing romantic relationships. Despite thorough explanations about their condition, they are still puzzled by the fact they are female but with a male genotype. The mother's primary concern on the other hand was her daughters' ability to conceive and start their own families in the future. This case report highlights the issues surrounding coping with the diagnosis of CAIS in adolescence.

DISCUSSION

The challenge of breaking the inevitable news of CAIS is equally difficult for the parents as well as for the index adolescents. Breaking bad news is best done by either a mental health professional or a psychiatrist. (4) The level of acceptance is unpredictable depending on the age of the affected index, their culture, and religious beliefs. (1) Unlike older adolescents, if the patient is a child, the disclosure of the diagnosis of their genetic constitution is debatable among healthcare professionals. The disagreement of the disclosure may prime to undesirable psychological harm to some children. The disclosure depends on the parents' agreement, needs to be age-appropriate, in combination with education about the underlying physiological condition (4).

Health professionals play an important role in explaining to CAIS patients and their parents that they are phenotypically, anatomically, legally, and socially female. It is important to handle gender assignment sensitively due to various factors; i.e. underdeveloped genitalia, family upbringing, and influence, cultural, religious, and social practices (5). Most CAIS patients choose to adopt the female gender role behaviour with heterosexual orientation as they are raised as phenotypically female (4,5).
Patients with CAIS also must face further issues of female reproductive life such as primary amenorrhoea, infertility, and inability to conceive which affects their life course (1). These impacts on sexual well-being contribute towards strong and long-lasting emotional reactions. Subsequently, CAIS patients are vulnerable to psychiatric conditions specifically depression and anxiety (4). Strong family support particularly from the mothers may help their daughters to cope emotionally and psychologically concerning infertility and sexual relationships. This is to aid patients to deal with CAIS in the long term (4,5).

Religion can guide CAIS patients in strengthening the decision-making of choosing gender identity and gender roles. Both patients' religious beliefs decree that patients of CAIS be treated as female in all matters on the religious law (3). These include the role as daughters, future wives and to be recognised as female as per their identification card. Religious beliefs and spiritual beliefs have significant overlap. Spiritual individuals are accepting of their fate in life as they have a more positive outlook on the perspective on life, death, and the nature of reality. Therefore, being spiritual helps in coping with the diagnosis.

CAIS patients need to have continuous support from health professionals from a multi-disciplinary team, involving a gynaecologist, paediatric endocrinologist, paediatric surgeon, urologist, psychologist, psychiatrist, and medical ethicist. This team benefits the patient in further explaining the details of CAIS and its prognosis in addition to managing their sexual well-being and other holistic treatment approaches (4,5).

In addition to care by a multidisciplinary team, psychosocial support networking is needed. This networking includes peer support groups, patient advocacy groups, CAIS support groups handled by non-government organizations or governmental organizations. These collaborations between patients, families, communities, health professionals, and voluntary groups are proven to be beneficial for patients with CAIS (2). The use of information technology via social media should be encouraged in support networks as it provides better acceptance in adolescents to communicate about their condition. Adaptation of information to the cognitive and emotional level of that particular adolescent has proven to better aid explanation. Patients from the middle adolescents' age group, for example, seem to prefer obtaining information via the internet as demonstrated by our patients (4).

CONCLUSION

In conclusion, CAIS is an important differential diagnosis in a patient presenting with primary amenorrhoea. Acceptance of the condition depends on age, upbringing, societal as well as religious background. The emotional and psychological effects may occur throughout the evolving female's life requiring support is important for the whole family in the short term as well as the long term for CAIS patients.

ACKNOWLEDGEMENTS

We would like to thank the patients and family for their cooperation in this case report.

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