Psychological approaches and new therapies to the choices of the Morris syndrome patient

Abordagens psicológicas e novas terapêuticas perante as escolhas do paciente portador da Síndrome de Morris

DOI:10.34119/bjhrv5n6-260

Recebimento dos originais: 14/11/2022
Aceitação para publicação: 22/12/2022

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ABSTRACT
Introduction: Complete Androgen Insensitivity Syndrome (SIAC) is an X-linked recessive disorder in which the patient has a female-phenotype XY karyotype. This is due to the insensitivity to androgens, including testosterone and DHT, by the abnormality or absence of androgen receptors.Objective: This study aims to address new therapies in the face of current choices in patients with Morris syndrome. Methods:The bibliographic survey was carried out between March and April 2021 from materials such as scientific articles and publications of the Brazilian Federation of Gynecology and Obstetrics Associations (Febrasgo), Revista Bioética, KargerPublishers, Publisher of Open Access Journals (MDPI), Unicamp's Repository of Scientific and Intellectual Production and Scielo's database. 17 articles were selected that corresponded to the proposed criteria for carrying out the work.Results:Due to male pseudohermaphroditism, the patient presents external female sexual organs, but internally, will have testicles. In addition, changes in external genitalia, breasts, stature, and significant hormonal changes can be seen. In short, the diagnosis is based on clinical presentation, laboratory and imaging tests in a woman with karyotype 46, XY, and may be confirmed by means of an analysis of the AR gene. During the choice of treatment, the main approach will be in relation to attribution of sex, adequate or not to external genitalia, hormone replacement, psychosexual outcome, ideal time for gonadectomy and genetic counseling. However, after diagnosis, psychological follow-up has a primary role in supporting patients and family members, as all the issues involved need to be addressed in clear dialog.Conclusions:Current patient choices bring us great challenges, especially when the choice is to take on the male karyotype. When one assumes the feminine one seems simpler, but the psychological question is also very challenging. This indicates that new strategies and a lot of multidisciplinary attention are needed for the treatment of these patients.

Keywords: androgen resistance syndrome, sexual development disorders, amenorrhea, gonadectomy.

RESUMO
Introdução: A Síndrome de Insensibilidade aos Andrógenos Completa (SIAC) é uma doença recessiva ligada ao cromossomo X, na qual a paciente possui cariótipo XY com fenótipo feminino. Isto se explica devido à insensibilidade aos andrógenos, incluindo testosterona e DHT, pela anomalia ou ausência dos receptores de androgênio.Objetivo: Este estudo tem por principal objetivo abordar as novas terapêuticas perante as escolhas atuais em paciente portadores da síndrome de Morris. Métodos:O levantamento bibliográfico foi realizado entre

Março e Abril de 2021 a partir de materiais como artigos científicos e publicações da Federação Brasileira das Associações de Ginecologia e Obstetrícia (Febrasgo), Revista Bioética, KargerPublishers, Publisher of Open Access Journals (MDPI), Repositório da Produção Científica e Intelectual da Unicamp e base de dados Scielo. Foram selecionados 17 artigos que correspondiam aos critérios propostos para execução do trabalho.Resultados:Devido ao pseudo-hermafroditismo masculino, o paciente apresenta órgãos sexuais externos femininos, porém, internamente, terá testículos. Ademais, podem ser percebidas alterações na genitália externa, nas mamas, na estatura e alterações hormonais significativas. Em suma, o diagnóstico é baseado na apresentação clínica, exames laboratoriais e de imagem em uma mulher com cariótipo 46, XY e poderá ser confirmado por meio de uma análise do gene AR. Durante a escolha do tratamento, a principal abordagem será em relação a atribuição de sexo, adequado ou não a genitália externa, reposição hormonal, resultado psicossexual, momento ideal para gonadectomia e aconselhamento genético . Contudo, após o diagnóstico, o acompanhamento psicológico tem função primordial no apoio ao paciente e familiares, pois é necessário abordar em diálogo claro todas as questões envolvidas.Conclusões:As escolhas atuais dos pacientes nos trazem grandes desafios, principalmente quando a escolha é para assumir o cariótipo masculino. Quando se assume o feminino parece mais simples, mas a questão psicológica também é muito desafiadora. Isto indica que são necessárias novas estratégias e muita atenção multidisciplinar para o tratamento destas pacientes.

Palavras-chave: síndrome de resistência a andrógenos, distúrbios do desenvolvimento sexual, amenorréia, gonadectomia.

1 INTRODUCTION

Androgen Insensitivity Syndrome (SIA) is an X-linked genetic condition and is considered to be the most common cause of Sexual Development Disorders (SDD) in individuals with genotype 46, XY. This syndrome can manifest itself in three different ways, depending on the degree of insensitivity to androgens: complete SIA (SIAC), in which the external genitalia is completely female; partial SIA (PAIS), with variable phenotype, which may be predominantly female, predominantly male, or ambiguous genitalia; and mild SIA (MAIS), characterized by male external genitalia associated with pubertal virilization affected[1].

Virilization of the external genitalia depends on the proper functioning of the AR gene and the sufficient presence of androgens. That said, individuals 46, XY who have mutations in their androgen receptors, as occurs in the full form of AIS, develop female external genitalia, including clitoris, large lips, small lips, and a blind-bottomed vagina, but do not have ovaries, fallopian tubes, and uterus. Associated with these characteristics, they have normally developed testicles that produce testosterone, which can be located in the abdomen, in the inguinal region or be sublabial1.

Diagnosis can be made as early as childhood, when an inguinal hernia is investigated in a girl and the testes are discovered. However, the most common is that the diagnosis is made during puberty, when the primary complaint is primary amenorrhea. When the diagnosis is not

made during childhood and this girl grows up with the testicles, she will develop breasts and female body contour normally, in addition to the possible presence of pubic and axillary hair, even if drains and sparse, these developments, which will be given by the peripheral aromatization of testosterone in estrone. Therefore, it is only when the primary amenorrhea condition is established that a person with SIAC will discover that they are carriers of syndrome[2].

Starting from this diagnosis, some questions are put into perspective: should one or not submit to a gonadectomy, to carry out the removal of the gonads? If the option is to keep them, is there a risk of developing cancer? How do I follow up and how often? Furthermore, what are the psychological implications of such a diagnosis? Remain female or change gender? All these questions permeate a person's life when faced with such a diagnosis.

The present work brings a vision of articles on the subject, focusing on what is most current about gonadectomy, arguments for and against its realization, if there is a greater risk of developing malignant neoplasia while maintaining the gonads and how would the conduct be, if the option is to maintain them. In addition, it was sought to reflect on the psychological implications when the person discovers the male sex, when it was inserted since its birth, both in the family context and in society, as being of the female gender.

2 METHOD

It is a systematic review based on research based on the reading of materials such as scientific articles and publications of the Brazilian Federation of Gynecology and Obstetrics Associations (Febrasgo), Bioethics Magazine, Brazilian Journal of Plastic Surgery, Brazilian Society of Plastic Surgery, Integrated Nucleus of Head and Neck Surgery, KargerPublishers, Publisher of Open Access Journals (MDPI) and Unicamp's Scientific and Intellectual Production Repository[1]. Additionally, information has been removed from the Scielo database and the Virtual Library on Health (VHL).

Thus, key words were used to obtain the publications: "Androgen Resistance Syndrome", "Morris Syndrome", "changes in sexual development", "psychological consequences", "diagnosis" and "reconstructive surgical procedures". This search and selection of articles took place in March and April of the year 2021.

As a criterion for exclusion, articles that were not in Portuguese or that did not have the option of translation into Portuguese were adopted, those that referred to case reports and focused only on the pathophysiology, without addressing psychological aspects and treatment options.

In this way, 23 articles were selected for reading and abstract, being excluded those that were not within the purpose of the systematic review and were excluded mainly those that addressed only the pathophysiology of the Syndrome of Insensitivity to Androgens.

After reading the abstracts, 19 articles were selected that corresponded to the criteria proposed for carrying out the work.

3 RESULTS AND DISCUSSION

Complete Androgen Insensitivity Syndrome (SIAC) is an X-linked recessive disorder in which the patient has a female-phenotype XY karyotype. It is one of the most common causes of sexual development disorders (SDD) in individuals 46, XY, with incidence from 1/20,000 to 1/64,000[1,2,3,4].

3.1 PATHOPHYSIOLOGY

Regardless of chromosomal sex, up to the sixth week of gestation, the embryos have bipotential primordial gonads, undifferentiated external genitalia, and two types of internal genital ducts, the Wolff ducts and Müller[5] ducts. From the sixth embryonic week onward, the differentiation of the gonad begins, being commanded by the testicular determining factor, the SRY gene (located in the short arm of the Y chromosome), triggering the differentiation of the gonads in testicles[3,6].

Afterwards, from week 9, fetal Leydig cells secrete testosterone, and differentiate Wolff ducts into epididymis, deferent canal, and seminal vesicle[6]. At the same time, the differentiation of the male external genitals (penis, scrotal pocket and penile urethra) is initiated, caused by the androgen dihydrotestosterone (DTH), produced by the transformation of testosterone by the enzyme 5-alpha reductase into target tissues[3.6]. At the same time, the anti-Müllerian hormone (AMH) is produced by Sertoli cells, causing the regression of the female gonads (uterus, fallopian tubes and upper third of the vagina)[6].

If testosterone and dihydrotestosterone concentrations are insufficient, there will be no development of the male external genitalia, so female phenotype occurs, with formation of clitoris, large lips, small lips and lower portion of the vagina, or varying degrees of genital ambiguity[3.6].

In order for testosterone and DHT to perform their functions in the differentiations for male characters, they need the presence of functional androgen receptors. Therefore, any problem with the production or action of androgens in a 46,XY fetus between the 9th and 13th

weeks of gestation will cause incomplete masculinization, generating in male pseudohermaphroditism[3].

As in Morris syndrome, the individual is insensitive to androgens, including testosterone and DHT, by the abnormality or absence of androgen receptors, even with the 46,XY karyotype, will have external female sex organs and internally will have testicles[3.6].

3.2 CLINICAL MANIFESTATIONS

The most common clinical presentation of Morris syndrome is primary amenorrhoea, which can only be seen at puberty, with the third-largest cause leading to this symptom [3,5,6,7].

Also, at and after puberty, female external genitalia can be observed, with absence or rarefaction of pubic hair, vagina in the blind background and absence of uterus[1,2,3,7]. Thus, there is absence of menstrual cycles, because the production of the anti-Müllerian hormone in the embryonic period impedes the development of the uterus, cervix and proximal vagina[1,2].In the physical examination, a shortened vagina, approximately 2,5 to 8 cm, with blind background[2,7] should be evidenced. This part of the vagina is still present because it has no control of the anti-Müllerian hormone[1].The presentation of normal or enlarged breasts shows normal levels of estradiol in the male range, demonstrating that the lack of androgenic action is the driving factor of breast development in these individuals, instead of the increase of estrogen[1,2,3,7]. Female body contour and absence of acne should be observed, which occurs by peripheral aromatization of testosterone and production of estrogen by the testicles [3,4,6].Final stature above the female normal average, but even lower than men, due to the action of the growth controlling gene, found in the Y chromosome[1,2,4,6].Regarding the hormonal profile, in SIAC, it is characterized by a high level of luteinizing hormone (LH) above the normal reference range, while the level of follicle stimulating hormone (FSH) is usually usual, probably due to gonadal inhibin regulation 1,2,4,62. In addition, testosterone baseline results are typically within the normal male range but increased relative to the female range, while estradiol level is normal referring to the male range, but in the lower range for females[1,2,4,6,8].As described, most of the symptoms of SIAC can only be perceived at puberty, so the most common is that the diagnosis is made during this period5,8.

3.3 DIAGNOSIS

Except in cases of family inheritance, SIAC can be diagnosed in three scenarios: in fetal life: when sex determination revealed karyotype 46, XY in fetus with female external genitalia; in infancy: in a girl with bilateral masses, which may be inguinal, sublabial, and intra-

abdominal; or in puberty: in women with primary amenorrhea. Therefore, the diagnosis can be made by:

- Magnetic Resonance Imaging: It is the method of choice, on account of its optimal resolution to evaluate soft tissues and internal anatomy. A great deal of attention should be paid to the T1 and T2 sequence, in which the absence of the uterus, vagina and location of the testicles (generally hypointense in T1 and hyperintense in T2)[4,6].

- Ultrasound: It is important to locate the gonads and the absence of the mullerian ducts. It is a first-choice method, as there is no exposure to ionizing radiation, accessible and safe, however, it has decreased sensitivity when the testes are located above the inguinal canal[4.6].

- X-ray: in which the pelvic anatomy will be analyzed, location of the gonads, which will usually be fibrosed, atrophic and with small dimensions[4,6].

- Computerized Tomography: it is little used, but it can be an alternative when it fails to carry out magnetic resonance[4,6.]

In short, the diagnosis is based on clinical presentation, laboratory and imaging tests in a woman with karyotype 46, XY, and may be confirmed by means of an analysis of the AR[1] gene.

3.4 TREATMENT

After the diagnosis, the first important step in this syndrome is how to reveal it. In the past or when the diagnosis is made before the age of majority of the patient, it is often omitted by doctors and family members, which clearly has an even more negative impact on the life of the person and goes against the ethical principles and norms of benefit to the patient, autonomy and justice [1,2,5].

Individuals with SIAC have complex issues, including functional, sexual, and psychosocial aspects. Attribution of sex, adequacy of the external genitalia for the social gender, hormonal replacement, psychosexual result, ideal moment for gonadectomy, infertility and genetic counseling, are questions that need attention in the treatment. All require flexible, sensitive and individualized procedures to achieve good results[1,2,5].

With respect to treatment, there is no method yet to correct the androgen receptor deficit present in Morris syndrome, but other interventions may be performed. The important thing is to always maintain a clear dialog with the patient so that he has autonomy in deciding which treatment course he wants to choose, because even the majority of people who present the SIAC identify with the female gender and choose to live their life as women, some can identify with

the male gender, so it is up to the specialist to give safe options so that he can live as a man and feel good with his own body [1,2,5].

The first decision to be considered in a patient with SIAC is the ideal moment of bilateral gonadectomy, which is done to avoid the development of an invasive testicular germ cell tumor (TGCT), which frequently affects individuals with Androgenic Insensitivity Syndrome, mainly after puberty. To date, gonadectomy is performed at an early age and when performed before puberty, estrogen hormone replacement is necessary to induce the development of female secondary sex characteristics[1,2,7,9].

However, because there are no parameters for detecting early malignant changes and the risk of tumor before puberty is very low, gonadectomy can be delayed to allow for spontaneous puberty and patient involvement with important decisions affecting their body.

In addition, it is important to note that for women with SIAC who wish to maintain their gonads, a biannual screening program is proposed for follow-up, which includes: gonadal images by ultrasonography or magnetic resonance, depending on the size and location of the gonads; determination of tumor markers (alpha-fetoprotein, beta-HCG, LDH and, optionally, PLAP - isoenzymes of placental alkaline phosphatase - in non-smokers); and endocrine evaluation (LH, FSH, testosterone and inhibin B)[1,2,7,9].

As part of the treatment of SIAC, hormone replacement therapy (HRT) is important. In patients who have undergone bilateral gonadectomy, HRT becomes mandatory to prevent symptoms of hypoestrogenism. In patients who have had surgery before puberty, replacement will aid in inducing pubertal development, and in patients who have subsequently had gonadectomy, therapy will work by maintaining the already developed secondary sexual characteristics[1,2].

For patients with SIAC, classical HRT is based on estrogen therapy in both its oral and transdermal form.

A decision for patients with SIAC, which must be made after much conversation and attention from a multidisciplinary team with psychologist, psychiatrist and social worker, is related to the choice in maintaining the female external sex organs and carrying out procedures that improve their functionalities or proceed to gender change and carry out various procedures to become phenotypically similar to a man[2,5,10,11].

Patients with SIAC have a vagina that is less deep than normal, and may prevent penetrating sexual intercourse and therefore cause various sexual problems. Thus, reconstruction of the vagina in patients with SIAC who wish to maintain the female phenotype is well indicated. Vaginoplasty is done to create or enlarge a vagina, which can provide

satisfaction with its appearance and function, promoting the well-being of the patient. However, it should only be indicated if the first choice nonsurgical technique, dilation, is not effective [1,2,5,7,10,11,12,13].

Thus, surgical processes are an option for patients who have not succeeded with dilation techniques or for patients who have actually opted for surgery. Among the surgical forms, is the creation of neovagine by intestinal graft, being the surgical method of greatest choice by the patients, for presenting excellent esthetic results and with low complications. In this method, skin grafting and/or amniotic membrane covering the rubber vaginal mold is used, which should be kept for days at the new site of the vagina until these new tissues inserted into the viscorectal space produce a layer that adheres to and leads to the epithelialization of the neovagine. In addition, dilation maneuvers are necessary to prevent shortening and vaginal stenosis [1,2,5,7,10,11,12,13].

However, although the graft is the method of greatest choice, the method by the use of the sigmoid-rectum segment, where it is fixed between the bladder and rectum is the best choice for providing an adequate vaginal size, and although at first the secretions are abundant, until the third month there is a normalization and from then on the vaginal canal will have a spontaneous lubrication ensuring normal sexual relations. Complications in this case are of low occurrence, but may be abdominal abscess, vaginal prolapse, and dyspareunia. In addition to these techniques, there is the construction of the vaginal neocanal by the skin of the larger lips of the vulva, but the vagina is positioned more previously, having its direction different from the normal [1,2,5,7,10,11,12,13].

Furthermore, hormone replacement with estrogen is indispensable in these cases in which the patient wishes to maintain gender, she will act maintaining the secondary female sexual characteristics already developed, which is essential for the patient to recognize herself and accept herself in her female body and overcome the doubts and anxieties that arise with the discovery of SIAC[1,2].

However, as has already been discussed, the person with SIAC may not identify with the female gender, and may wish to make a sex change, but since it would not respond to hormone replacement with testosterone, other solutions must be applied so that this alteration of sexual physical characteristics can be done in a satisfactory manner. To initiate sexual reassignment, the patient must be aware that it is a long, painful, expensive process that requires multidisciplinary follow-up with psychiatrist, psychologist, endocrinologist and surgeon[14].

For the correction of the external sexual organ, masculinizing genitoplasty can be performed, and neopaloplasty is indicated, which is a complex and expensive method. In this technique, grafts of skin, muscles, blood vessels and nerves from another location of the body,

such as the forearm or thigh, are used to create a new genital organ with a larger size and volume. In addition, scrotoplasty can be performed with insertion of testicular prostheses, giving a more natural view to the new organ[14,15].

As an option to give penis functionality, a penile prosthesis may be suggested, which is an implant placed inside the penis to produce an erection, made with a semi-rigid, inflatable or articulable prosthesis, and will allow the patient to maintain sexual relations. Also, to make the body of this patient as masculine as possible, mastectomy-amasculinizing surgery can be advised, which is plastic surgery done to give male appearance to a woman's chest, involving the removal of breast tissue with or without reduction of the skin and repositioning of the areolar complex of the nipple, minimizing the scar[16,17].

One difficulty in sexual reassignment of patients with SIAC is in acquiring secondary sexual characteristics, such as hair distribution, beard, voice change (thicker and more severe), and muscle development, because normally in a transsexual patient hormone replacement with testosterone is done leading to the appearance of these characters. However, in patients with this syndrome, the use of testosterone would not generate an effect, since the patient shows androgenic insensitivity. Because of this, some procedures may be recommended to achieve male characteristics as close as possible[14].

For hair distribution, one option is hair transplantation, which consists of removing follicular units (structure containing 1 to 4 threads, the root or hair follicle, sebaceous glands, and pylus erector muscle) from an area not affected by baldness, usually the occipital region (nape), and placing the units in the area that the hair desires, such as in the beard region. Various techniques can be used, requiring the guidance of a plastic or dermatological surgeon to analyze which is the best option for each case. To thicken or make the voice more severe, therapy with a speech therapist specialized in voice may be indicated, and depending on the case, also the option of thyroplasty surgery type 3, in which the removal of a segment of the laryngeal cartilage is carried out, leaving the vocal folds less tense and consequently leaving the voice thicker[18,19].

In addition, androgens are involved in obtaining peak bone mass and bone mineral density. Therefore, patients with CAIS have a reduction in dual-energy x-ray absortometry (DXA), and are at increased risk of developing osteoporosis as adults due to lack of androgenic function. Also, patients who underwent gonadectomy had the bone mineral density more impaired (decreased) than those who kept the gonads intact. Therefore, it should be directed to people with WHARF who undergo an evaluation of body composition, cardiovascular risk and metabolic status. In addition, it is important to control BMI and exercise along with calcium

and vitamin D supplementation, with bisphosphonate therapy being an option only for patients with very low bone mineral density, considered severe, and/or in cases of fractures. And for follow-up, adults with SIAC should have a bone densitometry test every five years[1.5].

Finally, psychological support is established as an important pillar. After the diagnosis, the period of psychological distress, not overcome in some patients, is begun, which questions about the proportion and meaning of the syndrome, mainly because its treatment does not involve the correction of many problems, such as infertility. Thus, there can be problems related to self-esteem, fear of rejection and avoidance of relationships. In addition, the patient's family experiences uncertainty, insecurity, impotence, and guilt. In this way, individual or group psychological support is fundamental and should be extended to family members who often have doubts about how to approach the subject with the child (a)[2,4,5,15].

On the part of the doctor, the important thing is always to maintain a very clear dialog with the patient, so that he has autonomy in deciding the course of treatment that he wants to choose. It is worth emphasizing that psychological support should be prioritized regardless of the patient's gender choice[2,3,4,15].

In short, individuals with Morris syndrome should, as a treatment, have access to psychological support and follow-up and, if necessary, treatment to maintain bone mineral density. As for gonadectomy, the alternatives for maintaining sex or changing sex should be analyzed with specialists and with multidisciplinary follow-up, so that the intervention is the most appropriate and indicated, provided that it coincides with the patient's will[1,2,5,7,9,10,11].

4 CONCLUSION

Therefore, androgen insensitivity syndrome is one of the main causes of sexual development disorders in individuals 46, XY.

When it comes to treatment, there is still no method that is fully effective and able to intervene in the alterations of the androgen receptors present in Morris syndrome, but there are options of reconstructive surgical procedures, prophylactic gonadectomy and hormone replacement therapy, there are great advances today, with new techniques used for treatment when the patient decides to keep the male sex, since in the old days, almost all of these patients opted for or were oriented to opt for the female sex, where the treatment was more comprehensive.

We must emphasize that we must continue researching and improving better treatments for these patients, always prioritizing the psychological and multidisciplinary accompaniment of this individual.

REFERENCES

1. Lanciotti L, Cofini M, Leonardi A, Bertozzi M, Penta L, Esposito S. Differentclinicalpresentationsand management in complete androgeninsensitivitysyndrome (CAIS). Int J Environ Res Public Health 2019;(16)

2. Batista RL, Costa EMF, Rodrigues Ade S, Gomes NL, Faria JA, Nishi MY, et al. Androgen insensitivity syndrome: A review. Arch Endocrinol Metab. 2018;62(2):227-35.

3. Melo KFS, Mendonça BB, Billerbeck AEC, Costa EMF, Latronico AC, Arnhold IJP. Androgen insensitivity syndrome: clinical, hormonal and molecular analysis of 33 cases. ArqBrasEndocrinolMetabol. 2005;49(1):87-97.

4. Solari DA, Groisman B, Bidondo MP, Cinca C, Alba L. Complete androgen insensitivity syndrome; diagnosis and clinical features. ArchArgentPediatr. 106(3): 260-268.

5. Gon EL. Esequiel Laco Gonçalves Psychological Implications Of (in) Fertility In Women With Female Phenotype And Esequiel Laco Gonçalves Psychological Implications Of (in) Fertility. 2006

6. Serrado MA, Castanha G. Androgen Insensitivity Syndrome Complete: Clinical Case and Bibliographic Review. Portuguese Radiological Act. 29(1): 49-52.

7. Cools M, Looijenga L. Update on the pathophysiology and risk factors for the development of testicular germ cell malignant tumors in androgen insensitivity syndrome complete. 2017; 11:175-181.

8. Silva ACJSR, Nácul AP, Carvalho BR, Benetti-Pinto CL, Yela DA, Maciel GAR, et al. Primary Amenorrhea - the role of the karyotype. 16 March 2018 (quoted on 5 October 2021). In: Febrasgo [Internet]. Available at: https://www.febrasgo.org.br/pt/noticias/item/419-amenorreia-primaria-o-papel-do-cariotipo?highlight=WyJzaW5kcm9tZSIsImRhIiwiaW5zZW5zaWJpbGlkYWRlIiwiYW5kcm9nXHUwMGVhbmljYSIsImNvbXBsZXRhIiwic1x1MDBlZG5kcm9tZSBkYSIsImluc2Vuc2liaWxpZGFkZSBhbmRyb2dcdTAwZWFuaWNhIiwiaW5zZW5zaWJpbGlkYWRlIGFuZHJvZ1x1MDBlYW5pY2EgY29tcGxldGEiLCJhbmRyb2dcdTAwZWFuaWNhIGNvbXBsZXRhIl0=

9. Döhnert U, Wünsch L, Hiort O. Gonadectomy in Complete Androgen Insensitivity Syndrome: Why and When? Fri Dev. 2017; 11:171-174.

10. Aristizábal-Duque JE, Piedrahíta-Mejía JC. Seguridad y eficacia de la vaginoplasty de vecchietti en agenesia vaginal: estudio de cohorte, en medellín, colombia, 2007-2012. Rev. Colomb. Obstet. Ginecol. [Internet]. 30 September 2019 (cited 13 October 2021);70(3):165-73. Available at: http://www.scielo.org.co/scielo.php?script=sci_arttext&pid=S0034-74342019000300165&lng=en&nrm=iso&tlng=es

11. Oliveira LJF, Cardinelli DM, Pennisi MF, Cordeiro TNR, Nunes VN. Bioethical and legal aspects of male pseudohermaphroditism. Bioethics Magazine. 2005; 13(1): 11-18.

12. Piazza MJ. Neovaginoplasties: a review of the various methods of treatment. FEMALE. May/June 2014; 42(3):122-127.

13. Santos DF. Androgen Insensitivity syndrome. Scientific Repository of Open Access of Portugal, SIBUC, General Study University of Coimbra. 2015; 1-82.

14. Federal Medical Council. CFM Consultation Process 6/2019 - CFM Opinion No 25/2019. Surgeries used in the process of gender reaffirmation FTM (female to male): total phalloplasty and methidioplasty. Official Journal of the European Union. Brasília-DF, 30 September 2019.

15. Quinta A, Zenha H, Azevedo L, Rios L, Cardoso A, Costa H. Faloplasty with Radial Antebrachial Free Flap. Urological Act. 26(3): 25-29.

16. Count CHR. Strap JPT, Pinto EBS, Rock PAC, Puhl RC, Daher JAC. Mastectomy-vasculizer technique (MTF) - Personal interpretation. RevBrasCirPlast. 2019; 34(Supl. 1): 45-47.

17. Cavalcanti MT.When to think of penile prosthesis?.Technical Responsible: Dr. Marco Túlio Cavalcanti — CRM: 136,030 | RQE: 56669(quoted on 13 October 2021). In: https://www.drmarcotuliourologista.com.br/[Internet] São Paulo - SP. Brazil. Available at: https://www.drmarcotuliourologista.com.br/tratamento/protese-de-penis/?gclid=Cj0KCQjwse-DBhC7ARIsAI8YcWJ0gdLNiU7FhT0pJGnimSaec0QHhKSXzgQc67fBS62nYSgUSwhIZNYaAlzNEALw_wcB

18. SBCD [Internet]. Capillary Transplant or Follicle Unit Transplant. Brazilian Society of Dermatological Surgery [cited October 6, 2021]. Available at: https://www.sbcd.org.br/procedimentos/cirurgicos/transplante-capilar/.

19. Santos GP. Thyroplasty: types, indications and benefits [Internet]. Integrated head and neck surgery core [cited December 2, 2020]. Available at: https://www.nicap.com.br/tireoplastia-tipos-indicacoes-e-beneficios.