Care of the Child with the Desire To Change Gender – Part I

Bethany Gibson, Anita J. Catlin

Hot Topic! What do you think? Send your comments about this topic to pnjrnl@ajj.com. This article discusses a sensitive issue that is complex and provocative, and will undoubtedly stimulate a variety of opinions. The opinions and assertions contained herein are the private views of the contributors and do not necessarily reflect the views of Pediatric Nursing or the publisher.

This article is the first in a three-part series describing the nursing and medical care of a child wishing to change genders. Part I will depict the psychological and hormonal treatment for children who express a desire to change genders. Part II will describe surgical treatments and nursing care for gender reassignment from female to male. Part III will present the surgical needs of transition from male to female.

This is Part I of a three-part series on children and young adults who desire to live as a gender different from which they were born. The series depicts the psychosocial, medical, and surgical components of transitioning from one gender to another. The medical and psychosocial issues of transgender change are complex, and ethical questions may be raised by those who would challenge these choices. Pediatric nurses will be best able to care for these patients with awareness of the multiple dimensions of these procedures and the ramifications of caring for these children and their families.

In May 2007, Barbara Walters aired a television program on 20/20 called “My Secret Self.” This program, still available in five parts on YouTube, depicts the lives of two young children who from birth informed their parents that they had the wrong genitalia for the gender that they were. Both Jessica and Riley, born with male external genitalia, were by two years old choosing to dress and live as girls. They clearly told their parents that “God had made a mistake” and that they were girl children. Another 16-year-old adolescent on the show, born as a girl, at 14 wrote his parents a letter and told them that he was absolutely in the wrong body and planned to begin to live as the young man that he was. Barbara Walters interviewed these children and their parents with dignity. The Walters special is a good accomplishment to this series of articles, which will inform the readers of Pediatric Nursing on the health care needs of the transgender child. This three-part series will discuss the current status of the transgender child and hormonal treatments used to suppress and transition gender. Parts II and III will discuss transgender surgeries and the barriers transgender individuals face in obtaining health care.

The Condition

“Transgender” is an umbrella term that literally means to cross gender lines (Selekman, 2007). These children describe feeling trapped in the wrong body and born with the wrong genitalia. They may choose to have surgery to remove organs related to one gender and constructed to resemble the other. The term gender identity disorder (GID) is the diagnostic category used to describe these children by the American Psychiatric Association, diagnostic code 302.2. To meet this diagnostic code, there are four components to GID or dysphoria.

- There must be persistent other gender identification: the desire to be or the insistence that one is of the other sex.
- There must be evidence of persistent discomfort about one’s assigned sex or a sense of inappropriateness in the gender role of that sex.
- The individual must not have a concurrent physical intersex condition (such as androgen insensitivity syndrome or congenital adrenal hyperplasia).
- There must be evidence of clinically significant distress or impairment in social, occupational, or other important areas of functioning.

Pediatric Ethics, Issues, & Commentary focuses on exploring the interface between ethics and issues in clinical practice. If you have suggested topics or cases for consideration in the column, please contact Anita J. Catlin, DNSc, FNP, FAAN, at catlin@sonoma.edu
Figure 1.
A Summary of Risky Behaviors Reported by Trans-Identified Youth

<table>
<thead>
<tr>
<th>Mental Health and Well-Being</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Thoughts of suicide</td>
<td></td>
</tr>
<tr>
<td>Attempted suicide</td>
<td></td>
</tr>
<tr>
<td>Sexually assaulted or raped</td>
<td></td>
</tr>
<tr>
<td>Engaged in sex work</td>
<td></td>
</tr>
<tr>
<td>Self-mutilation</td>
<td></td>
</tr>
<tr>
<td>Body Modifications</td>
<td></td>
</tr>
<tr>
<td>Engage in body modification</td>
<td>88%</td>
</tr>
<tr>
<td>Engage in hormone therapy</td>
<td></td>
</tr>
<tr>
<td>Received silicone injections</td>
<td>25%</td>
</tr>
<tr>
<td>Intend to acquire hormones and/or undergo surgery in the future</td>
<td>33%</td>
</tr>
<tr>
<td>Alcohol and Substance Use</td>
<td></td>
</tr>
<tr>
<td>Alcohol use</td>
<td>75%</td>
</tr>
<tr>
<td>Binge drinking</td>
<td>21%</td>
</tr>
<tr>
<td>Illegal drug use</td>
<td>79%</td>
</tr>
<tr>
<td>Sold drugs</td>
<td>21%</td>
</tr>
<tr>
<td>In recovery programs for substance abuse</td>
<td></td>
</tr>
<tr>
<td>Sex under the influence of alcohol</td>
<td>96%</td>
</tr>
<tr>
<td>Sex under the influence of illegal drugs</td>
<td>75%</td>
</tr>
<tr>
<td>HIV and STIs</td>
<td></td>
</tr>
<tr>
<td>Reported being HIV-positive</td>
<td>13%</td>
</tr>
<tr>
<td>Reported an STI</td>
<td>17%</td>
</tr>
<tr>
<td>Reported no being at risk for HIV</td>
<td></td>
</tr>
<tr>
<td>Engaged in unsafe behaviors in the past year that placed them at risk</td>
<td>63%</td>
</tr>
</tbody>
</table>

Source: Used with permission from the National Gay and Lesbian Task Force.

The issue of transgender children is a silent one. Caring appropriately for the child wishing to change gender and teaching others about this condition may be more critical than pediatric nurses know. These children are at risk, whether by decisions of their own making or in danger from others. Statistics provided by Dean and colleagues (2000) and printed in the document “Lesbian, Gay, Bisexual, and Transgender Youth: An Epidemic of Homelessness” (Ray, 2008, p. 62) show the level of risky behaviors in these youth (see Figure 1).

Psychological Issues for Transgendered Children

Transgender individuals are often perceived to have mental illnesses, but “researchers have found no correlation between non-normative gender identification and mental illness” (Shield, 2007). Research has found that individuals who have consistently expressed cross-sex identification from early childhood (toddler age) onward develop psychological problems resulting from the pain of pubertal physical changes, including depression, anorexia, social phobias, and suicidality (Cohen-Kettenis, Delemarre-van der Waal, & Gooren, 2008). Furthermore, transgender youth frequently report verbal and physical harassment, assault, and a lack of feeling safe at school (Roughgarden, 2004; Shield, 2007). These children are at risk of bullying and violence from others. An example of this is the death of 14-year-old Lawrence King. King, a gender non-conforming boy who dressed as a girl at school, was shot to death in 2008 during school by a classmate at his California junior high (see Figure 2).

“While lethal violence like Lawrence’s murder is rare, anti-LGBT [lesbian, gay, bisexual, transgender] bullying and harassment are pervasive problems in our schools, and effective responses are crucial to prevent escalation” (Jennings, 2009). In the 2005 National School Climate Survey, nearly one-fifth (17.6%) of LGBT students reported being physically assaulted at school in the past school year because of their sexual orientation and over a tenth (11.8%)
because of their gender expression. Nearly two-thirds of LGBT students (64.3%) said they felt unsafe in school because of their sexual orientation and two-fifths (40.7%) because of their gender expression (Jennings, 2009). Ken Jennings, director of the Gay, Lesbian and Straight Education Network, recommends schools develop policy and education against bullying related to gender choices.

Responses to Gender Identity Disorder/Dysphoria

Historically, there have been two philosophical responses to children who clearly desire to live in the alternative gender. The first response is with acceptance, using mental and physical health measures to ease the transition, and waiting to see what develops in the future. Research from the Netherlands reports that some children change their minds before adolescence and no longer pursue a gender change. An alternative response is to consider these feelings as a treatable disease and to attempt to treat the child by reprogramming, as depicted by Joseph Nicolosi and colleagues at National Association of Research and Therapy of Homosexuality (NARTH) (http://www.narth.com/menus/officers.html). Dr. Nicolosi has foresaw the idea of reparative therapy, or therapy that will teach children to accept their birth sex, practice heterosexual, and reject any alternative lifestyle. This article will discuss the first response of acceptance.

Research

The most prevalent research in the area of youth with GID has been done by researchers Cohen-Kettenis and colleagues in the Netherlands. In 1987, Dr. Peggy Cohen-Kettenis started the first outpatient clinic in Europe for children and adolescents with gender problems and intersex conditions. Cohen-Kettenis and colleagues (2008) state that 80% to 95% of prepubescent children with GID will resolve their GID prior to reaching adolescence. However, according to recent research, children who continue to experience GID into adolescence will pursue sex reassignment treatment and/or surgery (Shield, 2007). Therefore, a lengthy diagnostic process, including psychological screening and therapy, are important for children who express a persistent gender dysphoria in early childhood. Many believe that teens who have demonstrated persistent and unwavering identification with the opposite gender may be helped via early gender reassignment treatment.

Roughgarden (2004) wrote that gender dysphoria can occur in early childhood, with treating psychologist Mildred Brown reporting that 85% of her clients recognized their gender identity was different from their physical gender before grade school. Prepuberal gender dysphoria has also been documented by Dutch researcher Gooren (1999). The majority of transgender panelists at the Northern California Transgender Health and Wellness Conference expressed conscious recognition of their gender dysphoria prior to puberty as well (Gibson, 2008).

Psychological Assistance

Therapy can assist the adolescent who has chosen sex reassignment in managing and coping with social problems, such as peer and/or family conflict, completing developmental tasks on schedule, and coping with the resultant changes and stresses. Acceptance and understanding of their true gender identity is of critical importance, and therapy can greatly help with this process as well (Shield, 2007). Finding clinicians with adequate training, understanding, and experience can be facilitated through the use of transgender and transsexual resources, such as online discussion groups. Communication with others who have already begun treatment can 1) reveal clinicians who are compassionate, experienced, and knowledgeable; 2) provide referrals to medical centers that specialize in and/or treat transgender; and 3) direct young people to look for health information provided by the World Professional Association for Transgender Health (WPATH), formerly the Henry Benjamin International Association for Gender Dysphoria (HBIGDA).

WPATH (www.wpath.org) is the oldest interdisciplinary professional association of this specialty and consists of over 300 physician, psychologist, social scientist, and legal professionals involved in research and/or clinical practice dedicated to understanding and treating transsexual or transgender individuals. The organization published their sixth version of the Standards of Care for Gender Identity Disorders, which outlines their consensus regarding the stepwise psychiatric, psychological, medical and surgical management of gender dysphorias. The Standards of Care for Gender Identity Disorders states that the goal of treatment (psychotherapeutic, endocrine, and surgical) is “lasting personal comfort with the gendered self in order to maximize overall psychological well-being and self-fulfillment” (Meyer et al., 2006, p. 1). WPATH recommends finding a mental health professional who has been trained in childhood and adolescent developmental psychopathology, has a master’s degree or equivalent in a clinical behavioral science field, has special training and competence in the assessment of DSM-IV and ICD-10 sexual disorders, has documented and supervised training in psychotherapy, and has education and experience treating gender issues (Meyer et al., 2006).

Hormones

Pediatric nurses are aware that all children face social, emotional, and physical changes as they enter puberty and adolescence. These changes are difficult for many, and the usual problems faced by adolescents are compounded for youth who have chosen to dress as and assume the identity of an alternative gender. Many transgender children experience great stress as their bodies begin to change in ways that conflict with their sense of gender identity (Cohen-Kettenis et al., 2008; Roughgarden, 2004). Testosterone and estrogen cause secondary sexual characteristics to develop. Transgender teens living as boys develop breasts and begin to menstruate, and transgender teens living as girls have their voices deepen, grow facial hair, have enlarged Adam’s apples, and become taller than many women. In addition, a previously small penis begins to grow and become capable of erections. Many of these children wish to have something medical and/or permanent done to prevent these changes.

Informed consent laws prevent minors from consenting to their own medical treatment until the age of 18, which prevents transgender adolescents from utilizing sex reassignment treatments, such as hormones and sex reassignment surgery, unless they have the consent of a parent or...
Pubertal Delay

The primary goals of hormone use for those children who believe they need sex reassignment are twofold. The first is to eliminate, to the degree possible, the hormonally induced sex characteristics of the birth-assigned gender, and secondly, to induce those of the desired gender (Gooren, 1999). Discussion of the first goal, suppression of the puberty-induced secondary sex characteristics of natal sex, will be discussed in this section. According to the Netherlands protocol, adolescents diagnosed with GID who “have suffered with extreme lifelong gender dysphoria, are psychologically stable and live in a supportive environment” are considered eligible for puberty suppression (Delemarre-van de Waal & Cohen-Kettenis, 2006, p. 132). A letter of recommendation from a psychiatrist outlining the adolescent’s identifying characteristics, gender and/or other psychiatric diagnoses, length of psychotherapeutic relationship, verification of eligibility criteria for hormone therapy and/or sex reassignment surgery, and whether the client has followed recommendations from the organization is required to initiate endocrine treatment (Meyer et al., 2006).

The suppression of puberty using gonadotropin-releasing hormone analogs ( GnRHAs) may be prescribed for adolescents aged 12 to 16 years old who have 1) fulfilled the criteria mentioned above, 2) reached Tanner stage 2 or 3, and 3) reached pubertal levels of sex hormones (Delemarre-van de Waal & Cohen-Kettenis, 2006). Early hormonal treatment can reduce the amount of invasive surgical procedures that may be required with later sex reassignment because irreversible physical development secondary to puberty can be avoided. Female-to-male transitions might avoid the need for mastectomy, and male-to-females might avoid the need for reduction thyroidoplasty and voice modification therapy. Initiating pubertal delay at an early age will “most certainly result in high percentages of individuals who will more easily pass into the opposite gender role than when treatment commenced well after the development of secondary sexual characteristics,” which will likely result in better quality of life and perhaps decreased reports of post-operative regret due to poor functioning (Delemarre-van de Waal & Cohen-Kettenis, 2006, p. 133).

As previously discussed, puberty in the birth-assigned gender can cause the transgender adolescent significant distress and discomfort, potentially leading to many negative emotional and psychological outcomes. While initial administration of GnRHAs results in increased levels of circulating luteinizing hormone (LH) and follicle-stimulating hormone (FSH), continuous administration results in decreased secretion of LH and FSH from the pituitary gland to levels of a castrated man or menopausal woman (Skidmore-Roth, 2007). Inhibition of LH and FSH inhibits the gonadal production of the sex hormones testosterone and estrogen. GnRHa administered prior to puberty will completely prevent puberty, and when administered after the start of puberty will halt the progression of puberty, effectively putting it on hold (Brill & Milazzo, 2008; Cohen-Kettenis & van Goorzen, 1998; Cohen-Kettenis et al., 2008). Other drugs, such as progestins, antiandrogens (males only), and luteinizing hormone-releasing hormone (LHRH) agonists, may also be used to suppress the physical changes of puberty (Cohen-Kettenis & van Goorzen, 1998; Cohen-Kettenis et al., 2008; Gooren, 1999; Meyer et al., 2006).

Patients born as girls will experience a weakening of breast tissue, which may disappear completely, while those born as males will have a reduction in testicular volume. If this treatment is begun later in pubertal development, changes such as later stage breast growth in girls and deepening of the voice and facial hair growth in boys will recede, although not completely, while any further progression of puberty will be halted (Delemarre-van de Waal & Cohen-Kettenis, 2006).

This treatment is fully reversible, and cessation of the GnRH analog will result in the adolescent resuming puberty in their birth-assigned gender (Cohen-Kettenis et al., 2008). Pubertal delay can provide respite for the psychosocial pain of the transgender adolescent while simultaneously allowing time for the therapist and adolescent to further explore their gender identity and wish for sex reassignment, contributing to greater diagnostic precision (Cohen-Kettenis & van Goorzen, 1998; Cohen-Kettenis et al., 2008). This can serve to satisfy any doubts the parents and doctor may have about proceeding with sex reassignment treatment, allow time for parents/family to get counseling and support as needed, notify and educate school personnel, and explore the full range of treatment options.

Clinics in Boston, Gent, Oslo, and Toronto, all very experienced in treating gender dysphoric youth, have begun providing these interventions and/or referrals prior to 16 years of age as long as hormonal puberty has progressed to at least Tanner stage 2 (Cohen-Kettenis et al., 2008). Other criteria noted for initiation of GnRHa therapy include persistent GID since early childhood, exacerbated GID following early pubertal development, no comorbid psychiatric issues that impede diagnosis or treatment, parental consent, and a social support network throughout the treatment. Additionally, the adolescent can use this time to learn about the effects of sex reassignment treatment, as well as the social consequences of that course, including GnRH analogs, cross-sex hormones, and surgery (Cohen-Kettenis et al., 2008).

GnRH analogs have long been used in medical treatment of precocious puberty in children, with the exact same purpose and effect, halting puberty (Skidmore-Roth, 2007). GnRH analogs used for pubertal delay include leuprolide (Lupron® [subcutaneous injection]; 50 mcg/kg/day, may increase by 10 mcg/kg/day as needed] and Lupron® Depot [intramuscular injection; 15 mg every 4 weeks in children more than 37.5 kg or 22.5 mg IM every
3 months) and histrelin (Suppêlin® LA and Vantas® [yearly subcutaneous implant)] (Milazzo, 2008; Skidmore-Roth, 2007). LHRHa agonist depot triptorelin is a 3.75 mg intramuscular injection given monthly (Skidmore-Roth, 2007) that has been safely used with good results in Dutch clinics (Cohen-Kettenis & van Goozen, 1998). Spironolactone (up to 100 mg twice daily, if tolerated) is a diuretic with antian- drogenic properties that has been used to suppress the effects of testosterone effectively (Gooren, Gilltay, & Bunck, 2008; Milazzo, 2008). Cypionate acetate (initial dose of 50 mg twice daily, reduced to 50 mg daily when testosterone levels are effectively suppressed) is a progestosterone with antiandrogenic properties and is the most widely used drug for this purpose in Europe (Gooren, 1999; Gooren et al., 2008). Medroxyprogesterone acetate (5 to 10 mg daily) may be used if cypionate acetate is unavailable, although it has been found to be less effective (Gooren, 1999; Gooren et al., 2008). Finasteride (1 mg) is a 5-reductase inhibitor that can be used as well (Gooren, 1999; Gooren et al., 2008).

A follow-up protocol has been developed to investigate the efficacy and safety of GnRH therapy in adolescents suffering from gender dysphoria. Blood work should be done prior to the initiation of therapy to establish baseline levels of gonadotropins and sex hormones, and metabolic determinants, including fasting glucose, insulin, cholesterol, high and low-density lipoprotein levels, and renal and hepatic studies. Additionally, anthropomorphic measurements, such as height, weight, sitting height, hip and waist circumference, and Tanner pubertal stage can be recorded initially and re-evaluated periodically to ensure normal growth and development. Follow-up protocol includes appointments with psychiatrist or psychologist every three months and laboratory measurements of factors described above (Delemarre-van de Waal & Cohen-Kettenis, 2006).

**Living as the Alternative Gender**

The second phase of sex reassignment, following diagnosis, consists of the real-life experience (RLE) in the desired gender role, hormone treatment, and surgery (Delemarre-van de Waal & Cohen-Kettenis, 2006). Many adolescents who begin sex reassignment therapy early begin the RLE at this stage, although it is not a requirement during GnRH therapy. RLE requires living in the new or evolving gender role full time so as to gain understanding of the “familial, interpersonal, educational, and legal consequences” of changing gender (Delemarre-van de Waal & Cohen-Kettenis, 2006, p. 133). It is recommended that the RLE occurs for two years while continuing with education, employment, or volunteer work, that clients should provide evidence that others are aware of their new gender role, and that name and identity document changes are made during this period (Jain & Bradbeer, 2007; Meyer et al., 2006).

**Cross-Sex Hormone Therapy**

The next action for gender transitioning is the second goal of hormonal therapy – induction of the secondary sex characteristics of the desired gender. The physical changes to one’s outward gender expression necessitates that the RLE begins at this stage, if the adolescent client has not already begun living full time in his or her desired gender.

This second stage of physical intervention, cross-sex hormone administration (estrogen or testosterone) induces those masculinizing or feminizing characteristics, and the treatment is considered to be partially reversible (Delemarre-van de Waal & Cohen-Kettenis, 2006; Meyer et al., 2006). The HBGDA **Standard of Care**’s eligibility requirements include one letter from a mental health professional (who has been treating the client for at least six months) to the physician overseeing medical treatment, signifying that 1) the mental health clinician will work closely with the adolescent throughout hormone treatment and the RLE, 2) that the teen has reached a minimum age of 16 years, and 3) the teen preferably has consent by the parent or legal guardian, although it is not required (Meyer et al., 2006). The physician administering hormonal treatment and follow-up monitoring is not required to be an endocrinologist, but should be educated in the medical and psychological aspects of treating individuals with GID. The patient must have the “capacity to understand the risks and benefits of treatment, have his or her questions answered, and agree to medical monitoring of treatment” (Meyer et al., 2006, p. 17). A written informed consent document is mandatory. It is also recommended that the physician provides the patient with a written document stating the individual is under medical supervision, including hormone therapy, which the patient can carry at all times to prevent difficulties with the police or other authorities (Meyer et al., 2006).

A study by Cohen-Kettenis and colleagues (2008) found that adolescents selected using HBGDA eligibility requirements and beginning cross-sex hormone therapy between 16 to 18 years of age were no longer suffering from gender dysphoria and were both psychologically and socially “not very different” from their peers 1 to 5 years after sex reassignment surgery. Use of either sex steroid in high doses is contraindicated with serious liver disease, poorly controlled diabetes mellitus, serious cardiovascular disease, cerebrovascular disease, thromboembolic disease, and marked obesity (Gooren, 1999). The presence of a prolactin-producing pituitary tumor or a strong family history of breast cancer is a contraindication to beginning estrogen administration. Severe lipid disorders with cardiovascular complications are contraindicated to beginning testosterone administration (Gooren, 1999). Given that immobilization poses serious risks for deep vein thrombosis and that sex steroids increase that risk, hormone therapy should be discontinued 3 to 4 weeks prior to any elective surgical procedures. Treatment may resume once patients are fully mobile again (Gooren, 1999). It should be noted that suppression of the natal sex hormones combined with cross-hormone therapy will alter reproductive capacity in patients, so sperm storage for genetic males and cryopreservation of eggs for genetic females might be presented as an option to maintain the possibility of having their own biologic offspring later in life (Jain & Bradbeer, 2007).
Male-to-Female (MTF) Cross-Sex Hormone Treatment

Estrogen is prescribed in an increasing dose schedule to induce female sex characteristics and in addition to the GnRHa regimen, which has already rendered the patient hypogonadotropic (Delemarre-van de Waal & Cohen-Kettenis, 2006). Breast development will begin almost immediately upon estrogen administration, will proceed in a cyclical fashion, and will be as large as can be expected after approximately two years of treatment (Gooren, 1999). Gooren (1999) reports satisfaction in breast size by patients in 40% to 50% of cases, noting that size attained may not be proportional to the male chest and height dimensions, resulting in dissatisfaction with size of breasts in the remaining 50% to 60% of cases. Breast augmentation surgery may be desired later in these patients. Female body shape will also begin to develop with increased subcutaneous fat deposits and a loss of lean muscle mass (Delemarre-van de Waal & Cohen-Kettenis, 2006; Gooren, 1999), as well as softening of the skin, thinning of body hair, and a less firm erection (Jain & Bradbeer, 2007). Estrogen treatment will be required for the remainder of the patient’s life to prevent symptoms of hormone deprivation and osteoporosis (Delemarre-van de Waal & Cohen-Kettenis, 2006; Gooren, 1999).

Ethinyl estradiol is an oral preparation, administered in 50 to 100 mcg/day dose, and has been found to be an effective and inexpensive option. If there are concerns about thrombosis, oral 17β-estradiol valerate (2 to 4 mg/day) or transdermal 17β-estradiol (100 mcg twice weekly) may be used with less risk (Gooren et al., 2008). No evidence supports the use of progestagens to enhance the feminization process, and they have been found to cause venous varicosis and increase salt/water retention, thus raising blood pressure. Additionally, one-large scale study of the use of estrogens combined with progestagens in postmenopausal women revealed an increased incidence in breast cancer as well as cardiovascular disease in association with this hormone treatment (Gooren et al., 2008).

Female-to-Male (FTM) Cross-Sex Hormone Treatment

Testosterone is prescribed in addition to the GnRHa regimen to inhibit menses and induce male sex characteristics, or virilization of the patient’s body (Gooren et al., 2008). Specific changes include body and facial hair growth typical of males, coarser skin, muscle growth and male body shape, clitoral enlargement in varying degree, increased libido, thickening of the vocal cords, and potentially male pattern baldness if it runs in the patient’s family (Jain & Bradbeer, 2007). After 6 to 8 weeks of hormone treatment, deepening of the voice occurs and is irreversible (Gooren, 1999). Testosterone may be administered intramuscularly, as well as transdermally via a gel or transdermal patch. Intramuscular injections of testosterone esters (200 to 250 mg every 2 weeks) are the most common method (Gooren et al., 2008). Testosterone undecanoate (a 1000 mg IM depot injection) is administered every 10 to 12 weeks (available in some countries but not everywhere), and an androgen gel or transdermal patch have also been found effective at producing steady-state testosterone levels (Gooren et al, 2008). As with estrogen treatment, testosterone must be continued throughout life to prevent sex hormone deprivation symptoms and osteoporosis (Gooren, 1999).

Side Effects of Cross-Sex Hormone Treatment

A retrospective, descriptive study of 10,152 transsexual patients (816 MTF and 293 FTM) who received cross-sex hormone treatment from a knowledgeable physician demonstrated that this is an acceptably safe practice in the short and medium term. While there are side effects, as with any pharmaceutical therapy, mortality was not higher than a comparison group of age- and gender-adjusted Dutch citizens (Gooren, 1999; Gooren et al., 2008). In an effort to increase the body of medical knowledge regarding long-term side effects of cross-sex hormone treatment, Gooren and colleagues (2008) have established a Web site for reporting side effects that can be provided to both patients and clinicians (http://www.wpath.org/resources_transgender.cfm [click on transgender information: resource links]).

GnRHa administration will create a hypogonadotropic state that in girls will suppress menses due to lack of estrogen and in boys will block the development of fertility due to lack of testosterone (Delemarre-van de Waal & Cohen-Kettenis, 2006). Specific to adolescent patients is the issue of growth. Pubertal growth spurt will be inhibited by hormone treatment, while the fusion of the growth plates in long bones will be delayed (Delemarre-van de Waal & Cohen-Kettenis, 2006). This is not a problem for MTF patients because women are approximately 12 cm shorter than males on average, so the progressive closing of the epiphyses during estrogen treatment results in a shorter than normal male, but an acceptable height for a woman. Alternatively, administration of growth stimulating drugs to FTM patients can assist in achieving an acceptable male height (Delemarre-van de Waal & Cohen-Kettenis, 2006). GnRHa treatment may interfere with accumulation of bone mass normally seen during puberty due to sex hormone exposure; however, studies have demonstrated that these levels increase to normal values during cross-sex hormone treatment and preserve bone mineral density (Delemarre-van de Waal & Cohen-Kettenis, 2006; Gooren et al., 2008). More studies are needed to determine if discontinuing cross-sex hormones later in life would significantly increase risks of osteoporosis and bone fractures.

Dutch researchers (Gooren et al., 2008) report extensive study of the effects of cross-sex hormone therapy on cardiovascular disease risk factors over the last 15 years. Studies of MTF transsexuals on estrogen and GnRHa treatment revealed a statistically significant increase in weight, total body fat, and visceral fat (Gooren et al, 2008). There was also a statistically significant decrease in insulin sensitivity, which is believed to be caused by androgen deprivation. Blood pressure increased slightly, and there was also a slight increase on arterial stiffness; however, neither was a statistically significant change (Gooren et al., 2008). Studies on FTM transsexuals on testosterone and GnRHa treatment also resulted in a statistically significant increase in body weight and body mass index (BMI), as well as an increase in visceral fat that was not statistically significant. Other statistically significant changes that negatively affect cardiovascular health in FTM transsexuals are increased HDL cholesterol, triglycerides, and decreased insulin sensitivity (Gooren et al., 2008). The researchers contend that these negative changes may be attributable to increased body weight and fat. It should be noted, however, that overall cardiovascular mortality and morbidity in both MTF and
FTM transsexuals was not elevated (Gooren et al., 2008). Gooren and colleagues (2008) recommend advising transsexual patients to maintain a healthy lifestyle and dietary behaviors to prevent cardiovascular disease and metabolic syndrome.

Research has found that “hormone-dependent tumors are practically not occurring in hormonally treated FTM and seem a rare occurrence in MTF transsexuals” (Gooren et al., 2008, p. 23). For those who begin cross hormones as adolescents, exposure is greatly increased over the course of a lifetime. Therefore, the lack of prevalence of hormone-related tumors in the transsexual population should not be considered irrelevant nor warrant reduced surveillance. Gooren et al. (2008) have documented several cases of prolactinoma (lactotroph adenoma) following high-dose estrogen treatment in MTF patients with normal serum prolactin levels prior to therapy, as well as the formation of a pituitary microprolactinoma in a patient on normal-dose estrogen for 14 years. Therefore, Gooren et al. (2008) recommend long-term monitoring of serum prolactin levels in MTF patients on estrogen. Two cases of breast carcinoma in MTF patients on estrogen treatment have been reported, as have breast fibroadenomas (Gooren et al., 2008). However, out of approximately 2,200 MTF patients with over 30 years of treatment in the Dutch clinic, no case of breast cancer had been observed until recently, when one case was reported (Gooren et al., 2008). Despite these statistics, Gooren and colleagues (2008) maintain that these subjects have had varying exposure to estrogen (from 1 to 25 years), which prevents one from drawing firm scientific conclusions about the risk of breast cancer with long-term estrogen exposure. In addition, breast cancer has also been reported in a FTM transsexual post-bilateral mastectomy while on testosterone treatment. Therefore, MTF transsexual patients should be advised to do breast self exams and have mammograms as recommended for women, and FTM patients should have axillary lymph nodes examined as well (Gooren et al., 2008; Jain & Bradbeer, 2007; Sobralske, 2005).

Orchidectomy (surgical removal of the testes) prior to 40 years of age has been found to prevent the development of benign prostate hyperplasia and prostate cancer (Gooren et al., 2008). The ovaries of FTM transsexuals receiving testosterone treatment look similar to polycystic ovaries, which are more likely to develop malignancies (Gooren, 1999; Gooren et al., 2008). Oophorectomy (surgical removal of ovaries) is recommended in Dutch clinics once patients are eligible for surgical sex reassignment (Gooren et al., 2008). While not without risks, cross-sex hormone treatment has been shown to be acceptably safe by Dutch researchers at clinics that have been administering these treatments since the 1970s. Data should continue to be collected on adverse effects that present with long-term use to determine if long-term treatment with cross hormones is reasonably safe with lifetime usage, beginning in adolescence, or if the treatment should be discontinued at a certain age (Gooren et al., 2008).

Parts II and III of this series will feature medical and nursing care for sex reassignment surgeries for female to male transition and then male to female transition.

References


Care of the Child with the Desire To Change Genders – Part II: Female-to-Male Transition

Bethany Gibson

This is Part II of a 3-part series on children and young adults who desire to live as a gender different from which they were born. The series depicts the psychosocial, medical, and surgical components of transitioning from one gender to another. The medical and psychosocial issues of transgender change are complex, and ethical questions may be raised by those who would challenge these choices. Pediatric nurses will be best able to care for these patients with awareness of the multiple dimensions of these procedures and the ramifications of caring for them and their families.

After a child has made clear his or her intentions to adopt another gender, the process includes psychological and hormonal therapies. As described in the January/February 2010 issue of Pediatric Nursing (Gibson & Catlin, 2010), the child will dress and behave as the chosen gender, and take hormones both to delay puberty features of birth and to adopt puberty features of the chosen gender. All of those processes are reversible should the adolescent wish to change his or her mind. However, sex reassignment surgery (SRS) is irreversible and requires greater consideration and discussion. This article will discuss the very complex surgical procedures that female adolescents undergo when they are certain of their wishes to change both internal and external genitalia, and complete the transition to the opposite gender.

Sex Reassignment Surgery (SRS)

For adolescents and young adults diagnosed with transsexualism or profound gender identity disorder (GID), sex reassignment surgery, in addition to cross-sex hormone treatment and the real life experience (RLE), has been found to be a medically indicated treatment (Meyer et al., 2006). Sex reassignment surgery involves surgical procedures to change an individual’s genitals and/or secondary sexual characteristics. SRS is considered to be an irreversible treatment that requires careful evaluation of the patient, especially an adolescent. The World Professional Association for Transgender Health (WPATH) has published both eligibility and readiness standards of care for an individual to begin these surgeries (Meyer et al., 2006). Eligibility for SRS requires that the teen must have:

- Reached legal age of adulthood in patient’s country (16 years old in many countries, but 18 years of age in the U.S.).
- Had one year of continuous cross-sex hormonal treatment.
- Had one year of successful continuous RLE in the other gender.
- Provide two letters of recommendation by mental health professionals.
- Have the ability to demonstrate knowledge of the cost, required surgeries, lengths of hospitalizations, likely complications, and post-surgical rehabilitation requirements of various surgical approaches.

Bethany Gibson, BSN, is a Registered Nurse, Hospice Case Manager, and Research Assistant, Sonoma State University, San Francisco, CA.

Acknowledgment: The author wishes to acknowledge assistance from column editor, Anita Catlin, with the writing of this article.
Readiness for the surgeries is different from eligibility. Readiness requires that patients demonstrate:

- Gains in consolidating their gender identity.
- The ability to deal with familial, occupational, and interpersonal issues in a manner that results in a better mental health state.
- Control of previously identified problems, such as substance abuse or suicidal ideation (Meyer et al., 2006).

WPATH standards of care state that these are not rigid rules, but a set of guidelines that may be adjusted in individual cases due to a patient’s “unique anatomical, social, or psychological situation, an experienced professional’s evolving method of handling a common situation or a research protocol.”

Finding the right physicians is essential. Surgeons, who may include gynecologists, urologists, plastic surgeons, or general surgeons, should be board certified by nationally known associations, in addition to being experienced and competent at genital reconstruction techniques. It is best that surgeons are knowledgeable in more than one technique so consultation with the patient allows for a choice of the best possible technique for the individual. Surgeons should have an interactive relationship with the patient’s mental health provider and the physician prescribing and overseeing hormone therapy. Surgeons must be advocates for the treatment plans and consult with the transsexual adolescent at length so that they personally understand the benefits of surgical treatment to the patient (Meyer et al., 2006).

A recent meta-analysis, performed by Sutcliffe and colleagues (2007) of the British Association of Plastic, Reconstructive and Aesthetic Surgeons, searched six electronic databases in an attempt to retrieve the available literature published since 1980 concerning the surgical treatment for persons undergoing gender reassignment surgery. This analysis provides all levels of evidence available (which was limited) and covers the “core” surgical procedures for both male-to-female (MTF) and female-to-male (FTM) individuals, but did not include any research on clients below the age of 18 years. The “core” surgical procedures identified for MTF transsexuals are clitoroplasty, labiaplasty, orchidectomy, penectomy, and vaginoplasty (Sutcliffe et al., 2007). The “core” surgical procedures outlined for FTM transsexuals include hysterectomy, mastectomy, metoidioplasty, phaloplasty, salpingo-oophrectomy, scrotoplasty/placement of testicular prostheses, urethroplasty, and vaginectomy (Sutcliffe et al., 2007). It is noted by Sutcliffe and colleagues (2007) that very little randomized, controlled evidence exists, and there is a need for greater control group comparison; blinding; consistent referral, diagnosis, assessment, and selection processes; consistent and validated outcome measures; and long-term follow up in future studies of reassignment procedures.

According to Bowman and Goldberg (2006), cross-sex hormone treatment must be discontinued two to four weeks prior to any surgical intervention to reduce the risk of thromboembolism during the period of relative immobility following surgical procedures. Additionally, drugs that interfere with clotting should be discontinued seven to 10 days prior to surgery. Patients should be advised to stop smoking, if applicable, as it negatively affects skin quality, wound healing, and vascularity; in the case of free flap phalloplasty, this is an absolute requirement (Bowman & Goldberg, 2006).

Female-to-Male Sex Reassignment Surgery

Chest Surgery (aka “Top Surgery”)

Surgical alteration to assist the FTM adolescent in achieving a gender appearance congruent with the chosen gender identity usually begins with a mastectomy (Meyer et al., 2006). It is important to recognize this may be the only surgical treatment undertaken by some MTF transsexuals because it greatly increases the ability to pass as a man, greatly improving psychological and social functioning (Bowman & Goldberg, 2006). Mastectomy procedures involve the removal of breast tissue, excess skin, and the inframammary fold. The achievement of the best-appearing male chest and contour, with appropriate symmetry, proportion of structures, and full sensation is important (Bowman & Goldberg, 2006; Brownstein, 2008).

Dr. Michael Brownstein, a plastic surgeon specializing in gender-related surgery for approximately 30 years, gave a lecture on FT chest reconstruction at the Northern California Transgender Health and Wellness Conference on October 11, 2008. He outlined two types of mastectomies, the bilateral mastectomy with nipple and areola reconstruction and the subcutaneous mastectomy. Approximately 90% of his patients undergo the bilateral mastectomy, which is an outpatient surgery unless medical conditions require a hospital stay, and it takes from two to three hours to perform, depending on amount of skin and symmetry of the nipples (personal lecture notes from Dr. Brownstein taken October 11, 2008). Bowman and Goldberg (2006) recommend an overnight stay following full mastectomy for observation. An incision is made inferior to each breast to remove skin and the subcutaneous breast tissue, sometimes utilizing liposuction. The patient’s existing nipple and areola tissue is resized and grafted to the appropriate position (determined by chest proportion) to create a male-appearing nipple/areola segment (Bowman & Goldberg, 2006) (personal lecture notes from Dr. Brownstein, October 11, 2008). This operation has the benefit of more accurate sizing and positioning of the nipple and areola complex, but has disadvantages as well. Disadvantages include extended bilateral inframammary (along inferior border of the breasts) scars, potential for “dog ear” deformities at the lateral and medial margins of the scar related to sagging, and the potential for permanent loss of erotic sensation in the nipple and areolar grafts. “Dog ear” deformities resulting from excess skin and subcutaneous tissue are the leading cause for surgical revisions, according to Brownstein (2008). Weight loss prior to and following surgery can improve this outcome. Nipple necrosis and mastectomy flap necrosis are potential complications that may be treated with immediate wound care and dressing changes, but may require additional surgery to repair later (Bowman & Goldberg, 2006).

The subcutaneous mastectomy, also known as the “keyhole” mastectomy, can be done as an outpatient procedure. It involves a small, concentric periareolar incision (along the skin areola border) to remove underlying breast tissue, does not require skin grafts, and results in less scarring than with bilateral mastectomy. This is an option for patients with smaller breasts and good skin elasticity (little sagging), and cup size B or smaller (Bowman & Goldberg, 2006; Brownstein, 2008). These patients are less likely to require revision later to have an aesthetically acceptable result. According to Brownstein, an additional benefit of this procedure is reduced risk of lost erotic sensation. Risks and possible complications include hematoma (which requires removal for safety and good aesthetic outcome), infection, poor scarring, impaired tissue sensation, graft failure, seroma (requires aspiration), contour abnormalities, nipple asymmetry, and need for additional surgery (Bowman & Goldberg, 2006).

There is a much higher likelihood of later revision in patients who are obese because of excessive fatty tissue extending under the arms and towards the back, which is dif-
Hysterectomy and Salpingo-Oophrectomy

A complete hysterectomy is the removal of the uterus and cervix, while salpingo-oophrectomy is the removal of the fallopian tubes and the ovaries, respectively. These interventions are often performed simultaneously (Sutcliffe et al., 2007) and sometimes with genital reconstruction or mastectomy (Bowman & Goldberg, 2006). Bowman and Goldberg (2006) cite multiple reasons for requesting a hysterectomy and salpingo-oophrectomy, including reduction of gender identity dysphoria related to presence of the female reproductive structures, treatment of pre-existing gynecological conditions, prevention of menses in clients who are unable to tolerate testosterone treatment, or removal of the need for Pap examinations in clients so severely gender dysphoric that vaginal examinations are intolerable. Hysterectomy and oophrectomy procedures have the benefit of lowering the required dosage of testosterone, thus reducing the potential side effects of that treatment, in addition to removal of uterine and ovarian cancer concerns (Bowman & Goldberg, 2006). For FTM patients who have never had vaginal intercourse, and especially if there is atrophy of the vagina related to testosterone treatment, vaginal hysterectomy was found to be difficult in two studies noted by Bowman and Goldberg (2006). Fortunately, laparoscopic surgery is often utilized for hysterectomies and salpingo-oophrectomies with good outcomes, and is actually preferred in cases where the patient wishes to have a phalloplasty because the abdominal skin flaps are preserved for potential future revisions (Bowman & Goldberg, 2006).

Vaginectomy and Urethral Lengthening

Vaginectomy involves the removal of all or some of the vaginal mucosa, depending on whether the patient intends to have a phalloplasty or metoidioplasty. Vaginectomy and urethral lengthening are required for a phalloplasty but optional for a metoidioplasty. The vaginal mucosa is surgically removed, and the levator ani muscles are drawn together to excise the vaginal cavity. The vaginal tissue may then be used to create a urethral length sufficient to carry urine through the neophallus created by a metoidioplasty or a phalloplasty (Bowman & Goldberg, 2006). A rare but potential complication of vaginectomies and vaginal hysterectomies is laceration of the rectum. This is in addition to the risk of infection, post-operative intra-abdominal or retroperitoneal hematomas and/or recipient site seroma, and hypertrophic scarring common to all genital reconstructive surgeries (Bowman & Goldberg, 2006). Standard management of infections is antibiotic therapy, but in cases of multi-drug-resistant organisms, the surgeon should be consulted. Hematomas are generally evacuated in an operating room, while seromas are aspirated by the surgeon (Bowman & Goldberg, 2006).

Metoidioplasty

Metoidioplasty, also called metadoioplasty in the literature, involves the creation of a neophallus using the hormonally enlarged existing clitoral tissue, which functions as the glans penis and is composed of erectile tissue analogous to penile tissue (Bowman & Goldberg, 2006; Sutcliffe et al., 2007). The clitoris is released from its surrounding tissue, and a flap of skin from the labia minora is then wrapped around to create a small phallus, which is sensate and carries urine to the distal end similar to a natural penis through the use of urethral lengthening (Bowman & Goldberg, 2006). It should be noted that this procedure is less complex than a phalloplasty, has fewer complications, and has the benefit of providing greater erogenous sensation, but is not often large enough to use in sexual penetration and may or may not allow for micturation while standing. The average size of the neophallus has been found to be 5.7 cm, with a range of 4 to 10 cm (Bowman & Goldberg, 2006; Sutcliffe et al., 2007). Sutcliffe and colleagues (2007) reported an average hospital stay of 11 days following the procedure, and complications...
in 32 FTM patients studied included one case of severe hematoma, two cases of urethral stricture, and three cases of urethral fistula. Urethral lengthening requires placement of a suprapubic catheter until the new urethra is patent, and is usually removed during the first week of post-operative hospitalization (Bowman & Goldberg, 2006). Bowman and Goldberg (2006) state that patients choosing not to have urethral lengthening are generally admitted the same day as surgery and released the next. Overall, the patients studied reported satisfaction with this procedure (Sutcliffe et al., 2007).

Phalloplasty

Phalloplasty is the creation of a neophallus and is a very complex surgical procedure done using a range of different methods requiring free tissue grafts. There are many different surgical options to this procedure, and the patient should be aware that dissatisfaction with the appearance or functionality of the resulting phallus is always a risk (Bowman & Goldberg, 2006). The goals of phalloplasty, as outlined in Bowman and Goldberg's (2006) review, are:

- The creation of a sensate and aesthetically acceptable penis with sufficient length and bulk to be viable for penetrative sexual intercourse (with the aid of a prosthetic erectile device).
- Extension of the urethra to the tip of the penis to allow voiding while standing.
- Preservation of orgasmic capability.
- Minimal scarring, disfigurement, and functional loss in the donor area.

The creation of the neophallus generally uses a flap of tissue from the forearm rolled into a tube to create the urethra, which is then rolled within a larger flap that includes fat and skin to make a “tube within a tube,” resulting in an adult-sized phallus that transmits urine. The ulnar side is generally used because of reduced hair growth. In cases where excessively hairy arms resulted from hormonal treatment, hair removal may be required prior to surgery to prevent hair growth in the newly constructed urethra and the penile shaft as well, for cosmetic reasons (Bowman & Goldberg, 2006). Alternative sites from which the flaps of tissue used to create the phallus have been harvested include the fibula, dorsalis pedis, tensor fasciae latae, groin, deltoid, anterolateral thigh, and lateral arm. In an attempt to preserve nerve function, and therefore erotic sensation, the pre-existing clitoris is often de-epithelialized and covered by the base of the newly created phallus. However, erotic sensation is often sacrificed for the achievement of a functional adult male phallus (Bowman & Goldberg, 2006).

Numerous studies cited in Bowman and Goldberg’s (2006) review assert that anatomic and functional stability of the neophallus requires a year, after which the erectile prosthesis may be inserted. Some FTM transsexuals also undergo tattooing of the neoglands six to eight months following phalloplasty to produce a visible delineation between the shaft and the glans. The meta-review of Sutcliffe et al. (2007) included 36 studies of phalloplasty, yet found limited data on important outcome measures, such as social integration, patient satisfaction, and physiological function. Sutcliffe and colleagues’ (2007) review notes several major complications, including vesicovaginal and urethrovaginal fistulas, urinary incontinence, and extensive scarring to the donor site. Additionally, Bowman and Goldberg (2006) recognize the requirement for dissection of the groin blood vessels and nerves, and often a vein graft from the leg, along with the removal of a significant amount of skin from the donor site and subsequent grafts among the multiple surgical procedures necessary, all of which have inherent risks associated with them.

General surgical risks include infection, deep vein thrombosis, pulmonary embolism, and death. Nurses may assist in the prevention of these risks through interventions such as sequential compression devices, management of intravenous hydration, turn, cough and deep breathing, close monitoring of patient status and medication regimen, and ambulation as ordered (Bowman & Goldberg, 2006).

A complication specific to phalloplasty is partial or complete flap necrosis, which often presents early in the post-operative course as a blanching erythema or skin mottling that becomes continually darker. The surgeon should be notified immediately if this is suspected because it can result in loss of the phallus. Bowman and Goldberg (2006) also report the occurrence of urethral fistulas in up to 45% of phalloplasty procedures, which is characterized by urine flow from sites other than the urethral opening. The surgeon should be notified, but urethral fistulas often resolve themselves after two to three weeks. Additionally, they should be kept clean and monitored during this period because fistulas that do not heal will require surgical revision by a urologist. Urethral stricture is characterized by a progressive inability to urinate and may be accompanied by fistulae. Correction requires dilation under anesthesia by a urologist, and if that is unsuccessful, surgical revision will be necessary (Bowman & Goldberg, 2006). Sensation and function are commonly impaired in the hand distal to the flap donor site and generally resolve within a few weeks. However, approximately 5% of patients require long-term physical therapy to fully recover, so nursing staff should monitor sensation and movement of the donor site (Bowman & Goldberg, 2006).

An extended hospital stay, averaging 10 to 14 days with prolonged bedrest was reported by Bowman and Goldberg (2006), with admittance one day prior to surgery and the standard bowel prep and nothing by mouth after midnight instructions common to major surgeries. Post-operatively the phallus is monitored hourly for temperature, color, turgor, pulse, and capillary refill by nursing and surgical staff for two days to assure that vascularity is maintained. Compromised vascularity requires immediate return to the operating room to preserve the tissue (Bowman & Goldberg, 2006). Additional medical interventions requiring nursing supervision include a suprapubic catheter placed during surgery that is usually removed during the first week of hospitalization, followed by a Foley catheter for the next two to three weeks; an occlusive dressing over the skin-grafted donor site for five days, followed by a sheet of gauze which assimilates into the eschar and may be trimmed as it peels up from the edges over the next two weeks; as well as patient-controlled analgesia, anticoagulants, and antibiotics for five days (Bowman & Goldberg, 2006). Patients should be educated about side effects for which they should seek immediate medical attention, such as painful, swollen, or warm legs; chest pain; ongoing dizziness; and shortness of breath (Bowman & Goldberg, 2006). Additionally, patients need to be informed that the new phallus will lack sensation for several months following surgery, but should gradually begin to increase starting at the base and extending to the tip throughout the course of the following year. Decreased erotic sensation is a potential risk of phalloplasty, but sexual satisfaction may remain despite impaired tactile and erotic sensation, with orgasmic capability reported by most patients (Bowman & Goldberg, 2006). Once the patient is discharged from the hospital, ongoing follow up is required. This generally consists of two clinic visits five to seven days after discharge, at which time the Foley catheter is removed and antibiotics may be discontinued if healing is adequate (Bowman & Goldberg, 2006). It is also important to inspect the phallus and scrotum (if done simul-
Scrotoplasty

Scrotoplasty is the surgical creation of a scrotum. A scrotum aesthetically enhances male-appearing genitals in underwear or swim suits, thus facilitating passage in the male gender role as well as the individual’s own aesthetic satisfaction. This assertion is supported by a survey of 200 FTM transsexuals undergoing SRS that found 96% or respondents desired scrotoplasty, as compared to 52% requesting a phalloplasty (Bowman & Goldberg, 2006). Bowman and Goldberg (2006) describe the neoscrotal skin as being very tight initially, but the weight of the implants eventually stretches the redraped labial skin, resulting in a more natural-appearing scrotum. The erectile prosthetic implant is often inserted at the same time as the testicular implants and should not be done until at least one year following the phalloplasty to allow adequate wound healing and functional stability to occur (Bowman & Goldberg, 2006). Risks specific to scrotoplasty, while rare, include implant ejection, rupture, or dislocation, which may require surgical removal and replacement later on (Bowman & Goldberg, 2006; Sutcliffe et al., 2007). The incision site should be monitored for increased drainage, visible extrusion of testicular prostheses or erectile prosthesis, as well as inflammation or changes in size and shape of the scrotum (Bowman & Goldberg, 2006).
Additional Masculinizing Surgical Procedures

Other surgical procedures some FTM transsexuals seek out to further masculinize themselves include rhinoplasty (plastic surgery of the nose), chin/jaw implantation, and calf or pectoral implantation. There is very little, if anything, written in the medical literature of these procedures specifically related to transsexuals, and finding surgeons who are experienced in performing them may be difficult (Bowman & Goldberg, 2006). Liposuction to remove excess fat from the buttocks, hips, and thighs is a more commonplace procedure. Plastic surgeons frequently and safely perform liposuction, so finding one who is experienced and willing will likely be much easier than other procedures listed above. Liposuction, unlike the other surgical interventions, is something that can probably be modified through a serious regimen of physical training and will also result in better health for the individual.

References
Care of the Child with the Desire To Change Genders – Part III: Male-to-Female Transition

Bethany Gibson, Anita J. Catlin

Hot Topic! What do you think? Send your comments about this topic to pnjrnl@ajj.com. This article discusses a sensitive issue that is complex and provocative, and will undoubtedly stimulate a variety of opinions. The opinions and assertions contained herein are the private views of the contributors and do not necessarily reflect the views of Pediatric Nursing or the publisher.

In Part I of this three-part article, the psychological and medical care of the child wishing to change gender was described. In Part II, preparation for surgery for young adults who were genetically female and undergo surgery to transition to male identity was presented. This third part presents the surgical treatments for gender reassignment procedures for a genetic male wishing to reassign as female. Discussion is included about how parents are responding to these wishes from their prepubescent and teenage children.

In the previous two parts of this series (Gibson, 2010; Gibson & Catlin, 2010), the placing on hold of puberty for youngsters who believe they are in the wrong body was discussed. By administering gonadotropin-releasing hormone agonist, a child can have time to think this through and be certain he does not wish to live as a man. The treatment is fully reversible; thus, if the preteen or teen then “outgrows” this desire, he may revert back to the externally male sexual development. Dr. S. Giordano, from the Manchester Institute of Science, Ethics and Innovation, states it is “not only not unethical to give these medications, [and] if it is likely to improve the child’s quality of life and even save his or her life, then it is indeed unethical to defer treatment” (Giordano, 2008, p. 580).

When a child takes these medications, dresses as the selected gender, and lives this life, school nurses, nurses in pediatricians offices, and hospital nurses will need knowledge to be supportive of this process (Vanderburgh, 2009). Additionally, teachers and other children in the schools may need guidance on how to be compassionate, since a boy wearing girl’s attire may create anxiety within the school system, more so than a girl who dresses masculinely (Benestad, 2009).

Parents’ Responses

Some parents struggle with their own feelings related to their child’s transgender identity and should be placed in touch with an appropriate support group. Parents may benefit from hearing the experiences of other parents with transgender children and receiving support from those who have faced similar challenges. This provides a sense of normalization of their experience, so they can be a better resource for their children and more effectively engage in honest and open dialogue (Morris, 2006).
Breast Surgery

Medical, Surgical, and Nursing Care

When a genetically born male teen or young adult has gone through the processes discussed in Part I of this series, and the decision is clearly made to transition surgically, the procedures may include some or all of the following: breast surgery, removal of male external organs, creation of female external genitalia, reduction of neck cartilage, and other procedures that minimize male secondary sexual characteristics.

Breast Surgery

Augmentation mammoplasty, also known as breast enlargement, is a surgical option for male-to-female (MTF) patients who are not satisfied with the maximum breast size achieved with estrogen treatment after 18 to 24 months (Bowman & Goldberg, 2006; Brownstein, 2008). This is an outpatient procedure, usually performed under general anesthesia, involving implantation of saline inflated or silicone gel breast prostheses (Brownstein, 2008). The most common method uses saline-filled implants placed below the pectoral muscle through an inframammary or periareolar incision (Bowman & Goldberg, 2006). There are different sizes and shapes of implants available, and patients must express their wishes and expectations with their surgeon so consensus can be reached on what is possible.

Dr. Brownstein’s Web site (Brownstein, 2008) discusses the pros and cons of three incision sites for inserting the implants. The periareolar incision hides scarring along the skin areola border, but it is only possible if the areolas are large enough to insert the prostheses. An inframammary incision provides easy access to the tissue for creating a pocket to place and inflate the implant, but the incision will be more noticeable because it is in regular skin. The third option is an axillary incision, which removes the scar from the breast area, but it also makes visualization of the surgical area and the control of bleeding more difficult (Brownstein, 2008). Because breast tissue is frequently underdeveloped, tight, and less fatty in MTF patients compared to non-transgender women, tissue expansion prior to placement of the implant may be employed to promote better outcomes (Bowman & Goldberg, 2006). It is important that patients be informed that implants cannot perfectly resemble natural adult breasts; the “nipple-areola complex frequently appears under-developed and lateralized even after years of hormone treatment,” and age-related natural breast features, such as ptosis and cleavage, are very challenging to create (Bowman & Goldberg, 2006, p. 139).

Post-operatively, the patient will need to leave dressings intact for three days, after which, dressings may be removed. However, the steri-strips should remain in position until they fall off, usually after 7 to 10 days. Showering is permitted, but the steri-strips should not be soaked and should be patted dry afterwards. The patient is instructed to wear an underwire bra or sports bra for compression and support of the breasts (Bowman & Goldberg, 2006; Brownstein, 2008). Erythema around the incision is normal but should not extend beyond 1 to 2 cm from the incision. Swelling is also normal and only cause for concern if it is an unusually large, one-sided mass (Bowman & Goldberg, 2006). Additionally, the suture knots may be visible or felt at the end of the incision and are no cause for concern. Suture knots may work their way to the surface of the skin, usually after three weeks, and may be clipped free. Patients are often comfortable one to two days following the procedure, but it is normal to experience shooting pains, burning sensations, and general discomfort during the healing process for which analgesics are prescribed. These feelings will eventually subside, and patients often return to normal routines within one to two weeks, except for avoidance of strenuous activity for three to four weeks. Patients are instructed to perform implant displacement massage beginning three to five days post-procedure (Bowman & Goldberg, 2006).

Risks are associated with breast augmentation as with any surgical procedure. Wound infection and post-operative bleeding/hematoma are common to all surgeries. Complications specific to breast augmentation include “capsular contracture-thickening and contracture of scar tissue that normally forms around breast implant; asymmetry of breast size, shape or position; asymmetry of nipple-areola complex; implant failure, extrusion, or infection” (Bowman & Goldberg, 2006, p. 145). Although there may be permanent loss of sensation in the nipple-areola complex, sensation loss is usually temporary and resolves after several weeks without intervention. Excessive scarring as well as skin wrinkling over the implant is possible, and techniques to minimize scarring, such as massage and sun avoidance, should be discussed with the patient (Bowman & Goldberg, 2006). The patient should be prepared for the possibility of future revisions to address potential complications. According to Bowman and Goldberg (2006), the most reasons for revision are implant replacement, patient desire to change size or type of implants, repositioning of implants, and scar revisions.

MTF Genital Reconstruction Surgical Procedures

The core surgical interventions for MTF transsexuals are phrenectomy, orchidectomy, vaginoplasty, labiaplasty, and clitoroplasty. Additional surgical procedures undertaken to assist in feminization may include lipoplasty, thyroid chondroplasty or other facial bone reduction, blepharoplasty or other face-lift procedures, and electrolysis (Bowman & Goldberg, 2006; Sutcliffe et al., 2007). As noted in the
female-to-male genital surgical discussion (Gibson, 2010), medical preparations should be made prior to surgical intervention. Cross-sex hormones must be discontinued two to four weeks prior to surgeries, drugs inhibiting blood clotting must be discontinued 7 to 10 days prior to surgery, and “bowel prep” and preventative antibiotics will be administered upon admission the night before vaginoplasty, along with nothing by mouth after midnight, which is common to most surgical procedures (Bowman & Goldberg, 2006). As previously noted, patients are recommended to stop smoking to promote skin quality, wound healing, and vascularity during the post-operative recovery (Bowman & Goldberg, 2006). Genital electrolysis referrals will be made to remove hair from the scrotum and base of the penis to prevent intravaginal hair growth in the new vagina because skin grafts are taken from the scrotal region for vaginoplasty (Bowman & Goldberg, 2006).

**Orchidectomy.** Orchidectomy (also called gonadectomy and orchiectomy) is the removal of the testes and is sometimes performed as a single procedure, without vaginoplasty, to reduce the necessary dosage of estrogen required to oppose endogenous testosterone production. This also reduces the risks and side effects of estrogen treatment (Bowman & Goldberg, 2006). The scrotal skin is preserved as much as possible if there is a desire for vaginoplasty/ labiaplasty in the future, but there is risk of damaging the skin or shrinking following the procedure. For this reason, some surgeons recommend performing the orchidectomy at the same time as the vaginoplasty (Bowman & Goldberg, 2006). Combining procedures also minimizes the risks associated with general anesthesia.

**Penectomy.** Occasionally, MTF patients who do not wish to have vaginal penetration in the future as adults seek penectomy, the removal of the penis, without vaginoplasty. Creation of a new urethral opening will allow micturation while sitting, and a small vaginal “dimple” is created, which will not require the dilation as with vaginoplasty procedures (Bowman & Goldberg, 2006). Patients who intend to have a vaginoplasty should not have the penectomy as a separate procedure because the penile tissue is commonly used in the construction of the neovagina (Bowman & Goldberg, 2006; Sutcliffe et al., 2007).

**Vaginoplasty.** Vaginoplasty is the creation of a vagina and usually includes several procedures undertaken to convert the pre-existing male genitals into female genitalia (Bowman & Goldberg, 2006; Spehr, 2007; Sutcliffe et al., 2007). Generally, a plastic surgeon will perform all procedures in one operative session, including bilateral orchidectomy, partial penectomy (penile dissection), vaginoplasty, labiaplasty, and clitoroplasty. However, it should be noted that some surgeons prefer a two-stage operation, performing the labiaplasty and clitoroplasty after the initial vaginoplasty has fully healed (Bowman & Goldberg, 2006; Sutcliffe et al., 2007). Bowman and Goldberg’s (2006) review of the literature outlines the primary goals of vaginoplasty as follows: “a) creation of a sensitive and aesthetically acceptable vulva-including clitoris, labia minora and majora, and vaginal introitus; b) shortening of the urethra, with creation of a urethral opening that allows a downward urinary stream; c) creation of a stable and sensate neovagina with adequate dimensions for penetrative sexual intercourse, ideally lined with moist, elastic, hairless epithelium; d) elimination of erectile tissue to avoid narrowing of the introitus and protrusion of the urethral meatus/clitoris during sexual arousal; and e) preservation of orgasmic capability” (Bowman & Goldberg, 2006, p. 140).

The new vagina, or neovagina, is most frequently made by inversion of the penis (Bowman & Goldberg, 2006; Sutcliffe et al., 2007). Most of the skin from the shaft of the penis is inverted to line the walls of the neovagina. Some patients have insufficient penile tissue to achieve this and require additional skin grafts from the abdomen or scrotum (Bowman & Goldberg, 2006); the buttocks-hip areas are sometimes used as well (Sutcliffe et al., 2007). Another option, although a more complicated technique, is to use a segment of the rectosigmoid colon if the others fail (Bowman & Goldberg, 2006; Sutcliffe et al., 2007). The female urethra is created from a preserved horizontal segment of the male urethra, and the neovagina is positioned posterior to the prostate, which is left intact during this procedure (Bowman & Goldberg, 2006). Sutcliffe et al. (2007) examined 32 studies and found that positive results were achieved, both aesthetically and functionally, in many studies. One study cited in that review reported 90% of patients were satisfied with both aesthetic outcome result and orgasmic capability as adults, although only 58% acknowledged sexual intercourse at that time.

Risks specific to penile inversion vaginoplasty include “infection, post-operative hematoma, recto-vaginal fistula, partial or complete flap necrosis, vaginal or urethral stricture or stenosis, prolapse of neovagina and unsatisfactory size/shape of neovagina, clitoris, or labia” (Bowman & Goldberg, 2006, p. 145). Patients who did not do electrolysis prior to surgery may experience hair growth in the neovagina. Hypertrophic scarring and impaired erotic sensation in adulthood are potential side effects. Several studies reported orgasmic capability ranging from 63% to 92% following vaginoplasty (Bowman & Goldberg, 2006). Researchers from one facility reported maintenance of sexual sensation in 98.6% and achievement of orgasm (at least occasionally) in 94% of 71 MTF transsexuals after an average of 4.2 years following vaginoplasty. Yet another study reported decreased orgasmic ability, but 75% more sex, resulting in high overall sexual satisfaction (Bowman & Goldberg, 2006). It should be noted that this information is based on studies of adult MTF transsexuals, not adolescents who are having sexual intercourse. However, the information may be of interest to older teenagers and their parents in making decisions that will significantly impact the young person’s life later.

Hospital stays for vaginoplasty average six to eight days, most of that time restricted to bed rest. Patient-controlled analgesics, antibiotics, and anticoagulants are often prescribed until mobility is achieved (Bowman & Goldberg, 2006). A Foley catheter is inserted prior to surgery and left in place until approximately five days following vaginoplasty. Additionally, a prosthesis is inserted into the neovagina during surgery to maintain side-to-side junction of the penile skin flap and any other skin grafts used to create the vaginal walls while also maintaining maximum vaginal dimensions. It is also removed approximately five days following surgery to teach the patient care of the neovagina (Bowman & Goldberg, 2006). The prosthesis will be maintained in the vagina, except for removal to perform daily douching initially, and then removed for progressively longer periods over the next eight weeks post-operatively. After eight weeks, the prosthesis is inserted once daily to maintain dilation and prevent stricture. A vibrator may also be used for this purpose, and Madecasol Crème 1% applied to the vibrator and massaged into the vaginal wall has been found to prevent scarring and shrinkage while keeping it smooth (Spehr, 2007).

Patient comfort is often greatly increased by the second week post-op. The patient should be monitored for partial or complete flap necrosis, which presents early in the post-operative course as non-blanching erythema or motting of the skin that becomes progressively darker. If this is suspect-
ed, the surgeon should be notified immediately (Bowman & Goldberg, 2006). If urethral stricture or stenosis occurs following the removal of the Foley catheter, it should be reinserted for an additional two to three days until urethral swelling subsides and the patient can void without problem. Urethral stricture or stenosis presents as dysuria, difficulty voiding, diminished stream, and/or increased time and effort to urinate. Patients should be educated regarding these symptoms and instructed to report them to the surgeon if they occur following discharge, since surgical revision may be required (Bowman & Goldberg, 2006). Urethral swelling or irregularities resulting in urine spray generally resolve several weeks following surgery but should be reported if persistent.

The patient will need to return periodically for follow up to monitor viability and patency of the neovagina and neoclitoris, quality of wound healing, and bowel and bladder function (Bowman & Goldberg, 2006). Due to the intact prostate gland, patients must be educated about the ongoing risk for prostate cancer and the need for screening. Spehr (2007) reports an occasional need for future correction of labia majora, shortening of the perineal space, and reforming of the mons pubis.

Labiaplasty and clitoroplasty. Labiaplasty and clitoroplasty are often performed in the same surgical event as the vaginoplasty, but some surgeons perform them during a second procedure following the healing of the vaginoplasty. The labia are constructed using existing male genital skin segments. The labia minora are fashioned from the prepuce, while the labia majora are created using scrotal skin (Bowman & Goldberg, 2006). There are multiple techniques noted in the literature for creation of
the neoclitoris. Most use a segment of the glans penis that remains attached to its dorsal nerve and blood vessels, known as the sensate pedicled clitoroplasty technique (Bowman & Goldberg, 2006; Spehr, 2007; Sutcliffe et al., 2007). Sutcliffe et al. (2007) reported positive results overall in a meta-review, with satisfactory aesthetic and functional outcomes in addition to few complications. Studies using the dorsal portion of the glans penis, still attached to the dorsal neurovascular bundle, resulted in lasting neoclitorides and most of those achieving sexual satisfaction as adults. High risk is associated to techniques in which resection of the dorsal portion of the glans penis, still attached to the dorsal neurovascular bundle was attempted (Sutcliffe et al., 2007).

Additional Feminizing Surgical Procedures

Blepharoplasty is the surgical reshaping of the eyelids, and rhinoplasty is surgical reshaping of the nose (Myers, 2006). Bowman and Goldberg (2006) discuss post-operative care for several plastic surgery procedures performed to assist the MTF transsexual in achieving feminization, including forehead surgery to advance the scalp, cheek augmentation, rhinoplasty, chin and jaw reduction, and lip augmentation. Swelling and often bruising are common side effects but usually resolve within 10 to 14 days unless significant bone work is done (jaw and chin reduction), which may take weeks to months to resolve.

Cultural Competence

Nurses are responsible for the assessment and implementation of interventions, and overall care of patients. They are ethically bound to do so with compassion and integrity while remaining non-judgmental. Experiences of ridicule, rejection, and lack of acceptance often prevent transgender patients from seeking medical care (Sobralske, 2005). Some tips for helping transgender patients feel comfortable and encourage a trusting relationship were discussed at the Northern California Transgender Health and Wellness Conference. These include addressing patients by their preferred name and pronoun, avoiding questions about their genitals, minimizing intimate examinations unless necessary to provision of care, and reminding other staff members of these basic courtesies and responsibility to confidentiality laws (B.G. Gibson, October 11, 2008).

Conclusion

Ethicist Eva F. Kittay provides an admirable summary for this series. In the text, Surgically Shaping Children, Technology, Ethics, and the Pursuit of Normality, she writes: “When we love and accept our children who deviate from standard norms, we exhibit that they are, in fact, valuable, valued, and desirable” (Kittay, 2006, p. 107). This series serves to educate pediatric nurses to be there for children and their families while modeling the empathy and support every child needs and deserves.

References


Gibson, B. (2010). Care of the child with the desire to change genders – Part II: Female-to-male transition. Pediatric Nursing, 36(2), 112-117.


Additional Reading

