

## Case Report: Induced Lactation in a Transgender Woman

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### Abstract

**Objective:** Our report describes a case of nonpuerperal induced lactation in a transgender woman.

**Methods:** We present the relevant clinical and laboratory findings, along with a review of the relevant literature.

**Results:** A 30-year-old transgender woman who had been receiving feminizing hormone therapy for the past 6 years presented to our clinic with the goal of being able to breastfeed her adopted infant. After implementing a regimen of domperidone, estradiol, progesterone, and breast pumping, she was able to achieve sufficient breast milk volume to be the sole source of nourishment for her child for 6 weeks. This case illustrates that, in some circumstances, modest but functional lactation can be induced in transgender women.

**Keywords:** breastfeeding; gender dysphoria; induced lactation; transgender

### History of Present Illness

A 30-year-old transgender woman presented to clinic seeking help to achieve her goal of breastfeeding. She explained that her partner was pregnant but not interested in breastfeeding, and that she hoped to take on the role of being the primary food source for her infant.

The patient's medical history was significant for gender incongruence for which she initiated a feminizing hormone regimen in 2011. At the time of our first visit, she was taking spironolactone 50 mg po bid, estradiol 2 mg po bid, and micronized progesterone 100 mg po bid. Her medical history was also significant for panic disorder, for which she was taking occasional clonazepam, and insomnia, for which she was taking occasional zolpidem. She was otherwise known to be in good general health and reported no complaints. Apart from her use of oral estradiol, she had no known risk factors for thromboembolism. She did not have a personal or familial history of thromboembolism and was a nonsmoker.

Her surgical history was notable only for laparoscopic cholecystectomy. She had not had any gender-affirming surgeries such as breast augmentation, orchiectomy, or vaginoplasty.

On initial examination the patient was a pleasant, well nourished, well developed woman who appeared her stated age. Her breasts were noted to be Tanner stage V.

Her laboratory results from her initial evaluation included estradiol 119 pg/mL, progesterone 8.70 ng/mL, prolactin 9.5 ng/nL, sex hormone binding globulin 48 nmol/L, and total testosterone 256 ng/dL.

### Course

Previous investigators have reported the following basic framework for nonpuerperal induced lactation: (1) increased estradiol and progesterone dosing to mimic high levels seen during pregnancy, (2) use of a galactagogue to increase prolactin levels, (3) use of a breast pump with the speculation that it would increase prolactin and oxytocin levels, and (4) subsequent reduction in estradiol and progesterone levels, with the intention of mimicking delivery.<sup>1-6</sup>

The patient obtained domperidone from Canada, an antiemetic used off-label as a galactagogue internationally.<sup>7</sup> The patient was started on domperidone 10 mg po tid. The patient also was given instructions to use her breast pump for 5 min per breast TID.

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The patient's first follow-up visit occurred at 1 month. On physical examination, she was able to express droplets of milk. The domperidone dose was increased to 20 mg po qid, her micronized progesterone to 200 mg po daily, her estradiol to 8 mg po daily, and her breast pump use to six times daily.

At the 2nd month visit, her progesterone was increased to 400 mg po daily and her estradiol had increased to 12 mg daily.

Three months after starting treatment, 2 weeks before the baby's due date, the patient was making 8 oz of breast milk per day. Her estradiol regimen was shifted to a low dose patch (0.025 mg daily) and her progesterone dose was lowered to 100 mg daily.

Three and a half months after she had started the mentioned regimen, the baby was born weighing 6 lbs 13 oz. The patient breastfed exclusively for 6 weeks. During that time the child's pediatrician reported that the child's growth, feeding, and bowel habits were developmentally appropriate. At 6 weeks, the patient began supplementing breastfeedings with 4–8 oz of Similac brand formula daily due to concerns about insufficient milk volume. At the time of this article submission, the baby is approaching 6 months old. The patient continues to breastfeed as a supplement to formula feeding, and she continues to adhere to the medication regimen described earlier.

## Discussion

We believe that this is the first formal report in the medical literature of induced lactation in a transgender woman.

Breastfeeding offers immunological, metabolic, and psychosocial benefits for both mother and infant. Breast milk contains secretory IgA, anti-inflammatory agents, and other immunomodulators that give breastfed infants immunological advantages relative to formula-fed infants.<sup>8,9</sup>

Formula-fed infants are noted to have higher risk of rotavirus infection, otitis media, hospitalization for lower respiratory tract infections, sudden infant death syndrome, necrotizing enterocolitis, asthma, and childhood obesity relative to their breastfed counterparts.<sup>8–13</sup>

In addition, breastfeeding offers economic advantages by allowing families to save resources that might be devoted to formula and infant healthcare.<sup>14</sup> Women who breastfeed are noted to have lower rates of breast cancer and ovarian cancer than women who have never breastfed.<sup>9</sup>

Breastfeeding has been noted to facilitate mother-child bonding.<sup>15</sup> For this reason, there has been interest among adoptive parents in inducing lactation, and

there have been a number of published articles outlining protocols to that effect.<sup>1–6</sup>

One major difference between the induction of lactation in cis and transgender women is the need for androgen blockade in the latter group. Our patient continued to take spironolactone while breastfeeding for androgen blockade. A known metabolite of spironolactone, canrenone is excreted in human milk. This has been shown to be 0.2% of the maternal daily dose, which is thought to be clinically insignificant.<sup>16</sup> Spironolactone has been reported to have tumorigenic potential in rats, but according to the American Academy of Pediatrics, it is thought to be compatible with breastfeeding.<sup>17</sup>

Throughout this process, the patient used domperidone that was obtained from Canada, where it is commonly used off-label as a galactagogue. Domperidone is not currently available in the United States for gastrointestinal use due to the FDA's concern about its association with cardiac arrhythmias, cardiac arrest, and sudden death when used intravenously. The FDA has warned against domperidone's off-label use as a galactagogue due to its unknown risks on breastfeeding infants.<sup>7</sup> Although there is significant literature indicating that domperidone increases prolactin levels and milk volume,<sup>18–20</sup> it is uncertain whether this intervention was necessary to induce lactation. The patient used a breast pump, which likely increased her prolactin levels independently of domperidone.<sup>21</sup> It is not clear at

**Table 1. Patient's Estradiol, Prolactin, and Progesterone Levels at Each Clinic Visit**

	Estradiol (pg/mL)	Prolactin (ng/mL)	Progesterone (ng/mL)	Total testosterone (ng/dL)
Day 0 (first visit)	63	10	8	20.52
Day 17	No data	119	13	No data
Day 28	129	148	6	No data
Day 56	34	143	4	No data
Day 70	33	115	5	No data

Female reference ranges: prolactin (nongravid): 1.40–24.00 ng/mL; prolactin (gravid, lactating): no reference range available.

Estradiol (nongravid): follicular phase: 27–122 pg/mL; midcycle phase: 95–433 pg/mL; luteal phase: 49–291 pg/mL; postmenopausal female: <41 pg/mL.

Estradiol (gravid): first trimester: 188–2497 pg/mL; second trimester: 1278–7192 pg/mL; third trimester: 6137–3460 pg/mL.

Estradiol (lactating): no reference range available.

Progesterone (nongravid): midfollicular phase: 0.31–1.52 ng/mL; midluteal phase: 5.16–18.56 ng/mL; postmenopausal <0.08–0.78 ng/mL.

Progesterone (gravid): first trimester: 4.73–50.74 ng/mL; second trimester: 19.51–45.30 ng/mL; third trimester: 58.7–214.0 ng/mL.

Progesterone (lactating): no reference range available.

Total testosterone: female: 9–55 ng/dL; female (gravid, lactating): no reference range available.



this time whether all of the aforementioned components of the patient's medication regimen were necessary to achieve lactation, or whether the patient's hormone levels (as listed in Table 1) were optimized to achieve adequate breast milk volume. Areas of future interest include the optimal dosing of estradiol, progesterone, and galactogogues in inducing lactation, as well as the optimal frequency and duration of pump use. Future investigation will be required to determine the optimal treatment regimen for induced lactation in transgender women.

### Acknowledgments

The authors would like to thank the aforementioned patient for her willingness to share her experience. The authors also thank Mount Sinai Health Systems for their ongoing dedication to meeting the healthcare needs of the LGBTQ community.

### Author Disclosure Statement

No competing financial interests exist.

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**Cite this article as:** Reisman T, Goldstein Z (2018) Case report: induced lactation in a transgender woman, *Transgender Health* 3:1, 24–26, DOI: 10.1089/trgh.2017.0044.

### Abbreviation Used

FDA = Food and Drug Administration

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