The Use of Supple Cups for Flat, Retracting, and Inverted Nipples

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Approximately nine to ten percent of women present with flat, retracting or inverted nipples, making latching an infant to the breast more difficult. Various products including breast shells, the Niplette™, the Latch Assist™, an electric pump, and a converted syringe are recommended to help elongate and stretch the nipple in order to assist with latching the baby. A new product called Supple Cups is available that gently stretches and elongates the nipple, making latching easier. Twelve women with flat, retracting, or inverted nipples who were pregnant or having difficulty breastfeeding were asked to try Supple Cups. Ten of the twelve women (83%) were able to consistently latch their babies and breastfeed after using Supple Cups. Eight women (67%) eventually exclusively breastfed their infants. In summary, Supple Cups are an inexpensive, easy-to-use product that can be very effective at protracting flat, retracting, and inverted nipples.

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Introduction

The majority of women have common nipples. Common nipples protrude at rest, and become erect when stimulated (Lauwers & Swisher, 2011). An estimated nine to ten percent of women present with flat, retracting, or inverted nipples (Alexander, Grant, & Campbell, 1992; Walker, 2009). Flat nipples do not protrude, which makes latching a baby more difficult. This can be compounded by engorgement, which exacerbates flat nipples or can flatten a small nipple. Retracting nipples appear to protrude but invert when stimulated making latching difficult. Inverted nipples are graded by the degree of inversion (Han & Hong, 1999). Grade 1 inverted nipples evert easily with stimulation. Grade 2 inverted nipples come out with great difficulty when stimulated and manipulated but quickly invert and do not maintain their eversion. Grade 3 inverted nipples do not protrude with stimulation or manipulation, as they are tethered to the underlying tissue with adhesions.

Many women with flat, retracting, or inverted nipples want to breastfeed but their babies have difficulty latching to the breast. When the nipple is flat, retracting, or inverted, a baby may not be able to grasp the breast deeply. After numerous unsuccessful attempts, many women with this problem give up. Lauwers and Swisher (2011) recommend compressing the nipple near the end of pregnancy to assess the ability of the nipple to evert. Lawrence and Lawrence (2010) also recommend examining the areola and nipple during the antepartum period to determine if the nipple retracts or is inverted.

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Several strategies have been utilized to ameliorate this condition. The magnitude of the problem is revealed by the various remedies available which include breast shells, the Hoffman technique (Hoffman, 1953), the Avent Niplette™ (McGeorge, 1994), the Latch Assist™ the Evert-It Nipple Enhancer, and an after-market adaptation of a disposable syringe (Kesaree et al. 1993; Watson Genna, 2009). More recently Chakrabarti and Basu (2011) employed latex rubber bands cut from condom rims with converted syringes to help evert inverted nipples.

Breast shells are among the earliest recommended treatments to draw out flat, retracting and inverted nipples. Worn under the bra, breast shells are lightweight circular hard plastic casings with several small holes for ventilation. The back of the shell has one larger hole in the center that applies gentle pressure to the areola in order to help the nipple protrude and stretch any adhesions. Two studies found no benefit on the use of breast shells during pregnancy (Alexander et al., 1992; MAIN Trial Collaborative Group, 1994). In the first of these two studies, more of the mothers in the treatment group either decided not to breastfeed or stopped breastfeeding earlier than those in the untreated group. In the second study, babies of mothers in the untreated group had fewer problems taking the breast than those whose mothers received treatment. After reviewing these studies, the British Royal College of Midwives (2002) decided to discourage routine screening for flat and inverted nipples believing it may damage a mother's confidence.

The Hoffman Technique (1953) was taught in the hopes of helping to loosen adhesions at the base of the nipple. It was recommended that five times a day the mother place a thumb

on each side of the base of the nipple and gently press the breast tissue while pulling the thumbs away from one another (Hoffman, 1953). However, Alexander et al. (1992) found no difference in breastfeeding success between a group of women who practiced the Hoffman Technique daily compared to a group of women who did not treat their nipples.

Kesaree et al. (1993) found that using an after-market modified disposable syringe to pull out the nipple prior to feeding helped seven out of eight women successfully latch their infants when combined with assistance in positioning their babies. This device is available worldwide in the form of a 10- or 20-milliliter syringe. To convert the syringe, the tip is cut off and the plunger pulled out and reinserted through the cut end. Some hospitals prohibit the use of modified syringes and some mothers may not comply with using this method, because it is cumbersome and not discreet.

The author found a converted syringe to be helpful with flat, retracting and inverted nipples both in the hospital and in the home setting. However, in the hospital there was difficulty both in using the converted syringe and in getting approval from administration to use an after-market modified device. There were also problems getting the actual modifications done to convert the syringe.

Additional products specifically designed to evert and stretch flat and inverted nipples include the Latch Assist™, which has a bulb end to suction out the nipple, and the Niplette™, which the *British Journal of Plastic Surgery* (McGeorge, 1994) reviewed as a non-surgical method that was effective in everting nipples in all twenty-two patients who entered the study. The latter is available in one size only, and neither the Latch Assist™ nor the Niplette™ can be worn under clothing.

A new product called Supple Cups may facilitate nipple eversion for women with flat, retracting or inverted nipples. Supple Cups are small silicone cups especially manufactured for this purpose. The Supple Cups are easy to use, inexpensive and easily lengthen and evert the nipple through gentle suction. Supple Cups were invented by Ron Daley, an inventor from Massachusetts who initially developed the product to help men and women who were embarrassed by flat and inverted nipples. He received a testimonial from a user saying that it helped her to latch her second baby after being unable to breastfeed her first child due to flat nipples. Mr. Daley contacted the author and sent samples of Supple Cups to use in the author's private practice in suburban Westchester County in New York. The author agreed to use Supple Cups on the first group of women who presented with flat, retracting or inverted nipples. Prior to this, the author used an after-market modified syringe to lengthen nipples.

Supple Cup

Case Presentation

The first 12 women with flat, retracting and inverted nipples who were pregnant or were having difficulty latching their babies were asked to try Supple Cups. The women fell into four different categories:

1) Pregnant women with inverted nipples (n=2)
2) Postpartum women with retracting nipples (n=1)
3) Postpartum women with flat nipples (n=5)
4) Postpartum women with inverted nipples (n=4)

Antepartum	**Postpartum**		
Inverted Nipples	Retracting	Flat Nipples	Inverted Nipples
2	1	5	4

The intervention included 1) Supple Cups; 2) lanolin (works best to secure the Supple Cups); 3) breast shells; and 4) nipple shield (temporarily needed in one case).

- Women were instructed in the use of Supple Cups and given a handout including instructions.
- The pregnant women were asked to use the Supple Cups beginning in the 37th week of pregnancy to avoid any possibility of starting premature contractions. These women were to begin wearing them for 15 minutes a day and to increase the duration of use as tolerated for up to 4 hours a day. They were instructed to wear breast shells with the smaller hole over the Supple Cups and under their bra. In this way the women could go about their day freely. Liberal use of lanolin was needed as the adhesions broke apart and the nipple(s) began to evert. These women were seen weekly to document their progress. As the adhesions broke apart and the nipples slowly everted, there was some discomfort with scant bleeding.
- Four women with inverted nipples began using Supple Cups in the postpartum period. They wore the cups under breast shells to prevent them from falling off and to hide them under the bra in between feedings. The length of time worn ranged from two days to two weeks depending on the severity of the inversion and how well each woman

responded. Five women with flat nipples used the cups for ten minutes prior to breastfeeding. Most used the cups for about one week. One woman needed a larger size but at the time of the trial there was only one size available. Supple Cups now come in four sizes ranging from 12.5 mm to 16 mm in diameter.

Case Number	Antepartum *Inverted Nipples*	Duration of Use	Results
8	Left - Grade 3	3 weeks antepartum 2 weeks postpartum	EBF
12	Bilateral – Grade 3	3 weeks antepartum 2 weeks postpartum	EBF

Case Number	Postpartum *Retracting Nipple*	Duration of Use	Results
4	Bilateral	1 week	PBF**

Case Number	Postpartum *Flat Nipples*	Duration of Use	Results
2	Bilateral	1 week	EBF
5	Bilateral	1 week	EBF
7	Bilateral	1 week	EBF
9	Bilateral	1 week	EBF
11	Bilateral	3 weeks	EBF

Case Number	Postpartum *Inverted Nipples*	Duration of Use	Results
1	Left - Grade 2	2 weeks	EBF
3	Bilateral - Grade 1	2 days	Lost to follow up*
6	Bilateral - Grade 2	1 week	PBF*** temporarily used a nipple shield
10	Bilateral Grade 2	2 days	Exclusively pumped +

EBF = exclusive breastfeeding – no other food or drink besides breast milk
PBF = partial breastfeeding – some formula besides breast milk

* Mother had a history of depression and did not return phone calls.

** Baby had breast aversion, mother had very wide nipples and the cups were too small for her. Eventually baby latched at the age of three months old. (Supple Cups now come in four different sizes).

*** Mother was ambivalent about breastfeeding. Her husband convinced her to try and she eventually partially breastfed.

+ Mother had extra large nipples. Baby had posterior tongue-tie and was treated but was very temperamental with breast aversion compounded by some traumatic first days after the birth. Mother exclusively pumped.

Results

Ten of the twelve (83%) women went on to successfully latch and breastfeed their babies after using Supple Cups. One woman was lost to follow up. One woman had additional problems and pumped and bottle-fed. Eight women (67%) eventually exclusively breastfed their infants. All of the women with flat nipples (N=5) were eventually able to latch their babies without difficulty and exclusively breastfeed. Four of these women wore the Supple Cups for one week while the fifth woman needed three weeks of use.

The one woman with retracting nipples had other problems. She used the Supple Cups for one week but the cups were too small for her. Her baby had breast aversion and she pumped until the baby eventually latched on at 3 months. The most dramatic results were with the pregnant women with inverted nipples (N=2). Both women had Grade 3 inversions and were able to exclusively breastfeed by wearing Supple Cups for three weeks before the birth and two weeks after. Their nipples improved to Grade 1 inversions and easily everted with manipulation. Compared to the women with inverted nipples who presented in the postpartum period (N=4), they were much more successful at latching their infants as only one of these women went on to exclusively breastfeed.

Discussion and Recommendations

Identifying women at risk through prenatal assessment and using Supple Cups in the antepartum period reduces the risk of breastfeeding difficulties in this sample. Supple Cups can be worn unobtrusively under a bra with a breast shell over them. This allows the nipple to evert by the time of the baby's birth. The women with Grade 3 inverted nipples needed five weeks of use before being able to latch their babies without difficulty. Further studies can determine how early and how long to wear the cups in the antepartum period. The risk of premature labor is most likely insignificant but needs to be determined.

After the birth, Supple Cups can be worn in between or immediately prior to a feeding until the nipples evert or lengthen. A nipple shield may be useful if the infant is still having difficulty latching onto the breast.

Flat Nipple before Supple Cups

Flat Nipples after using Supple Cups

To Apply

- Rub a small amount of lanolin onto the rim of the Supple Cup
- Center the Supple Cup onto the nipple and squeeze the bottom of the cup as you gently press it onto the nipple. This creates a gentle vacuum, pulling the nipple into the Supple Cup. The nipple should fill the cup at least half way.

To Remove

- Gently squeeze the "bulb end" of the Supple Cup to break the suction
- The cup should easily detach.

A randomized controlled trial comparing the use of Supple Cups with that of a converted syringe in the immediate postpartum period is currently underway at Nyack Hospital in Nyack, New York. Results will be available next year. Future investigations should include a larger sample size to determine the effectiveness of using Supple Cups in the antepartum period to treat inverted and retracting nipples. In summary, Supple Cups are small, easy to use, inexpensive and effective for everting flat, retracting and inverted nipples.

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For more photos, go to http://media.clinicallactation.org/2-3/Horwitz Ancillary.pdf.

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Peer Counselor Program in India Needs Assistance

Shabnam Resources, a registered charity in Chennai (Madras) India, is starting a breastfeeding peer counselor program in the slum neighborhoods of Chennai. They are seeking help and support from American lactation consultants. If you are interested, please contact Kathy Kendall-Tackett (kkendallt@aol.com) or Michael Hubert, the program director in Chennai (hubertmr@gmail.com).