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What is This?
Thrush in the Breastfeeding Dyad: Results of a Survey on Diagnosis and Treatment

Nancy B. Brent, MD, IBCLC

**Summary:** Infection with *Candida albicans* in the breastfeeding dyad has been associated with extreme pain in the breastfeeding mother and may lead to premature weaning. There is presently a dearth of information on diagnosis, natural history, and treatment of this condition in the literature. Therefore, before such a trial was conducted, a survey was sent to experts in the field of lactation, the members of The Academy of Breastfeeding Medicine, on the diagnosis and treatment of thrush in the breastfeeding mother and baby. Results showed that the majority of respondents relied primarily on history and physical examination of the baby, but not the mother, to make the diagnosis. Laboratory tests were ordered only rarely. The most common initial treatment was oral nystatin for the infant and cream for the mother’s breasts. This was followed by oral nystatin for the infant and oral fluconazole for the mother. Treatment of recurrence or persistence was again most commonly nystatin for both mother and infant, followed by oral nystatin for the infant and oral fluconazole for the mother or oral fluconazole for both. In the absence of controlled trials of this condition, these results may serve as suggestions for the clinician, until definitive data are available. *Clin Pediatr.* 2001;40:503-506

**Introduction**

Candidal infection in the breastfeeding mother-infant dyad is a clinically significant problem, because not only is it often associated with a great deal of pain in the mother, but also it often subsequently leads to premature weaning. Diagnosis and subsequently management are difficult, because clinical expression is highly variable. Symptoms in mothers range from excruciating dagger-like, burning pain deep in the breast during and especially afterfeedings, acute nipple pain, itching of the breast with or without rash, to total lack of maternal symptoms in the presence of infantile oral thrush. None of these findings are specific to thrush but may also be seen in several other conditions, such as physical trauma from incorrect latch-on and/or positioning, bacterial mastitis, or chronic dermatoses unrelated to breastfeeding. Physical findings in the mothers can also be highly variable. The breast may appear diffusely pink, have red or purple discoloration of the nipple and areola, satellite lesions, striae radiating from the nipple, flaking of the skin, or an entirely normal look. Clinical presentation of thrush in the infant usually presents as white patches on the oral mucosal surfaces and tongue. It is usually asymptomatic, though it can present with difficulty in feeding. It is not surprising, therefore,
that neither diagnosis nor treatment of this condition is straightforward.

In addition to the inconsistent clinical signs and symptoms, diagnosis is complicated by the fact that Candida albicans is a normal inhabitant of mucous membranes. This makes laboratory results difficult to interpret, as the presence of C. albicans may merely indicate colonization, but not infection. In fact, colonization is present in 17–48% of healthy infants,6,7 in the feces of 23% of normal infants and 41% of infants with skin lesions.6 In addition, 80% of normal adults exhibit positive delayed hypersensitivity skin reactions to C. albicans and from 22% to 28% of pregnant women have vaginal colonization without infection.6 In addition, the differential diagnosis is extensive, including trauma from incorrect positioning, bacterial mastitis, and, in chronic cases, abscess, and previously existing skin conditions such as eczema, psoriasis, and atopic dermatitis.1,14

Treatment recommendations are also widely varying, assuming one has made the correct diagnosis. There are presently no clinical treatment trials to refer to, and consequently no clinical treatment guidelines. Infection frequently recurs and can sometimes become chronic.1,3,5 As is well known, C. albicans thrives in moist, warm environments. Breastfeeding offers the additional factor of a high glucose substrate and the fact that the organism is passed back and forth between mother and baby. Not surprisingly, the diagnosis is imprecise and initial treatment often unsuccessful.

In light of the lack of information in the literature, I have conducted a survey on diagnosis and treatment of candidiasis in breastfeeding couples, before conducting a clinical trial. The survey was sent to the experts in the field (members of the Academy of Breastfeeding Medicine, an organization that consists of physicians of any specialty who are interested in breastfeeding and have chosen to become members). This group was chosen because thrush is a medical condition, usually requiring prescription medication for treatment. Lactation consultants, who are acknowledged experts in the field, do not have prescribing capabilities, unless they are also physicians. Therefore, I chose to survey the most interested group of physicians who actually treat the condition. It is hoped that a consensus of expert opinion can be defined to aid clinicians in treating their patients while we await definitive studies in this area.

**Methods and Subjects**

A survey was sent to the members of the Academy for Breastfeeding Medicine, with questions on diagnosis and treatment of nipple candidiasis. Of 432 surveys sent, 312 were returned on either the first or second mailing, for a response rate of 72%. The survey contained questions on practice setting; specialty; whether or not the respondent was an Internationally Board Certified Lactation Consultant (IBCLC), as well as an MD; frequency of thrush in the practice, as well as specific questions on diagnosis and treatment.

**Results**

The practice setting of the respondents consisted of 52% in private practice, 27% university based, and the remaining 21% in HMOs or other. One half were pediatrians, 21% family practitioners, 8% obstetrician-gynecologists, and 21% other. Of the respondents, 14% of the physicians were also Internationally Board Certified Lactation Consultants. The vast majority (82%) saw fewer than 3 patients with thrush per week.

Respondents were asked to rate the importance of different factors in making the diagnosis. History was rated as very important by 71%, and the physical examination of the baby was rated as very important by 66%, but only 36% rated the physical examination of the mother as very important. Most (93%) ordered no laboratory tests, 4% ordered potassium hydroxide tests on the mother’s skin or milk, 1% ordered potassium hydroxide test on the baby’s mouth, and 2% ordered a fungal culture on either mother or baby.

Data on initial treatment can be found in Table 1. The vast majority of respondents started treatment with oral nystatin for the baby and nystatin cream for the mother’s breasts. This was true regardless of the presence or absence of maternal pain. The next most common initial regimen was oral fluconazole for the mother and oral nystatin for the baby, followed less commonly by oral fluconazole for both.

Because this condition was thought to be difficult to eradicate and prone to recur, respondents were asked to estimate the cure rate and the incidence of recurrence, persistence, and complications. Less than half of the respondents (47%) rated the cure rate as 80% or less, whereas 75% rated it as 90% or less. For the recurrence rate, 93% rated it as 10% or more, and 30% rated it as 20% or higher. Persistence
Thrush in the Breastfeeding Dyad

Data on treatment of recurrence and persistence are found in Table 2. The most common regimens were oral nystatin for the baby and cream for the mother and oral fluconazole for both mother and baby. These were followed by oral nystatin for the baby and fluconazole for the mother.

These results did not differ with respect to the setting in which the physician worked (university based, private practice, HMO, or other). Type of practice (pediatrics, family practice, obstetrician-gynecologist, or lactation center) did affect both the degree to which laboratory tests were ordered and the treatment. Physicians at lactation centers ordered laboratory tests in 25% of cases, whereas the other specialties ordered them only 4% (pediatricians), 5% (family practitioners) and 13% (obstetrician-gynecologists) of cases. The majority of the laboratory tests ordered were potassium hydroxide tests of the skin of the maternal nipples. Treatments differed by specialty only for cases of thrush with no maternal pain and cases of recurrence. In thrush without maternal pain, all physicians in lactation centers treated both baby and mother, but 22% of pediatricians, 26% of family practitioners, and 28% of obstetrician-gynecologists treated only the baby. In the treatment of recurrence, pediatricians treated most commonly with oral fluconazole to mother and baby (30%), followed by oral nystatin to the baby and oral fluconazole to the mother (28%). Obstetrician-gynecologists used either one of these two treatments (15% each). Family practitioners treated most often with oral nystatin to the baby and oral fluconazole to the mother (35%), and then with nystatin to both (23%). The higher the number of patients seen by the practitioner, the more likely he or she was to treat both

was similarly rated as 10% or higher by 59% and as 20% or higher by 26%. Complications, on the other hand, were rare, with only 4% rating it as greater than 5%.

| Table 1 |
| INITIAL TREATMENT OF THRUSH IN THE BREASTFEEDING DYAD |
| Oral Thrush in Infant, Mother with Pain | Oral Thrush in Infant, Mother Asymptomatic |
| No. | % | No. | % |
| Oral nystatin for baby only | 3 | 1 | 65 | 21 |
| Oral nystatin for baby, cream for mother's breasts | 175 | 56 | 147 | 47 |
| Oral nystatin for baby, clotrimazole cream for mother | 1 | <1 | 0 | 0 |
| Oral nystatin for baby, oral fluconazole for mother | 41 | 13 | 9 | 3 |
| Oral fluconazole for both | 13 | 4 | 6 | 2 |
| Gentian violet (unspecified if for mother or baby) | 6 | 2 | 3 | 1 |
| No treatment | 1 | <1 | 4 | 1 |
| Other | 47 | 15 | 51 | 16 |

| Table 2 |
| TREATMENT OF RECURRENCE AND PERSISTENCE |
| Recurrence | Persistence |
| No. | % | No. | % |
| Oral nystatin for baby, nothing for mother | 3 | 1 | 1 | <1 |
| Oral nystatin for baby, cream for mother | 67 | 21 | 14 | 4 |
| Oral nystatin for baby, clotrimazole cream for mother | 1 | <1 | 1 | <1 |
| Oral nystatin for baby, oral fluconazole for mother | 44 | 14 | 41 | 13 |
| Oral fluconazole for both | 67 | 21 | 103 | 33 |
| Gentian violet (not specified if for baby or mother) | 9 | 3 | 13 | 4 |
| Other (not specified) | 75 | 24 | 73 | 23 |
mother and baby, even in absence of maternal symptoms.

Discussion

Infection with Candida albicans in the breastfeeding mother and infant continues to be a difficult diagnostic and management problem. At present we can rely primarily on the history and secondarily the physical examination, only rarely resorting to laboratory confirmation.

The history of predisposing factors such as maternal vaginal yeast infection or gestational diabetes, maternal nipple trauma, antibiotic or corticosteroid use in either mother or infant, or pacifier use has been helpful in pointing to the diagnosis. A history of infantile thrush or diaper dermatitis is similarly useful. As noted above, the description of the mother’s symptoms varied so widely that it is often not helpful. It has been described as burning or stabbing pain, either deep or superficial; pain that characteristically occurs after instead of during the feeding, consisting primarily of itching and flaking as opposed to pain; or even as mild discomfort commented upon parenthetically during examination of the child for oral thrush. The pain is characteristically bilateral. Since thrush is often preceded by nipple trauma, it is often helpful to determine whether the pain has been steady from birth, or whether it changed dramatically at some point, which would be suggestive of a superinfection. Onset of the pain in association with one of the known predisposing factors is also helpful.

Physical examination of the infant remains straightforward, with either white patches in the mouth or a beefy red diaper rash with characteristic satellite lesions defining the clinical diagnosis of candidiasis. Physical examination of the mother, however, is not so self-evident, which explains why this factor plays only a secondary role in diagnosis, according to the respondents of this survey. A negative physical examination is not contributory one way or the other to the diagnosis, and a positive one may point to either thrush of the nipples or one of many differential diagnoses.

The differential diagnosis includes nipple trauma alone, bacterial mastitis or impetigo, eczema, psoriasis or other chronic dermatoses, and allergic reaction to treatments that have been either self- or physician prescribed.

Treatment takes diligence on the part of both mother and physician. Nystatin cream and oral suspension will be successful only if given after every feeding and for a long enough duration. In the absence of guidelines, treatment for the entire duration of symptoms and 1 week after their cessation has been found to be successful in my experience. Most oral medications, and fluconazole in particular, cross into breast milk. Even though fluconazole is considered compatible with breastfeeding by the American Academy of Pediatrics (AAP), this crossover is probably the reason it is considered a second-line treatment by the AAP. It is prudent, in fact, when one is confronted with treatment failure from the nystatin combination in the context of good compliance, to reconsider the diagnosis before proceeding to systemic medication. However, the combination can often be successful and can be the factor that preserves the breastfeeding relationship after a chronic course of thrush.

Until further research better defines the natural history of the condition and response to therapy, and specific diagnostic and treatment criteria are developed, the results of this survey may suggest some guidelines to follow. Candidal infection in the breastfeeding dyad should never be a reason for premature weaning, and further research in this area is needed.

REFERENCES

4. Livingstone V. Breastfeeding and sore nipples. Personal communication.