Routine Neonatal Circumcision: Is It Necessary?

It is estimated that in the United States, about 1.2 million newborn males are circumcised annually at a cost of $150 to $270 million dollars. Reasons for circumcision vary from religious rituals and personal preferences to preventive health measures. In the 1970s & 1980s the AAP had concluded that there was no absolute medical indication for routine circumcision. The scientific evidence that has come to light since 1990 delineates the relationship between circumcision status, UTI, STDs and AIDS. Hence the newborn male circumcision may have potential medical benefits and advantages as well as disadvantages and risks.

Circumcision is not common in Asia, South America, Central America and most of Europe. Followers of the Jewish and Islamic faiths worldwide practice circumcision for religious and cultural reasons. Circumcision rates in the U.S. have been falling since 1960s. According to United States Department of Health and Human Services, 57% of male infants were circumcised in the United States during 1997-2004. These sources don’t include rates for ritual circumcision or subsequent outpatient procedures, hence true rates of circumcision are likely to be underestimated. Some studies have found a co-relation between frequency of circumcision and maternal education, a marker for socioeconomic status. Circumcision rates also vary among racial and ethnic groups, with whites considerably more likely to be circumcised than blacks or hispanics (81% vs. 65% or 54%).

The prepuce or foreskin may not be fully retractable until several yrs after birth. In ~ 90% of uncircumcised males, the foreskin is retractable by 5 years of age. Partial adhesions with smegma accumulation may persist in small numbers of uncircumcised males through childhood and even into adolescence. True incidence of complications after newborn circumcision is unknown and most are minor. Reports of two large series in 1970s and 1980s have suggested that the complication rate is about 0.2- 0.6%.

RESEARCH ABSTRACT

Title: Is the Prevalence of Abdominal Wall Defects in the Hudson Valley Region of New York State a Public Health Concern?

Background: Nationwide epidemiologic studies demonstrate an increasing trend in prevalence for gastroschisis and a declining trend for omphalocele. Racial and ethnic disparities have been suggested but studies are inconclusive.

Objective: To determine the prevalence of gastroschisis and omphalocele in the Hudson Valley Region of New York State over a ten year period by race and ethnicity

Design/Methods: New York State Department of Health Vital Statistics and Congenital Malformations Registry databases obtained by race and ethnicity from 1992 to 2001 across the 7 counties of the Hudson Valley Region (Dutchess, Putnam, Orange, Rockland, Sullivan, Ulster, and Westchester). Live-birth cases of gastroschisis and omphalocele diagnosed up to 2 years of age were included. Poisson regression, adjusting for population size, was used for analysis of relative risks (RR).

Results: There were 58 infants with either gastroschisis (29) or omphalocele (29) identified from a birth population of 2,354,280. Over the ten year period the overall prevalence of abdominal wall defects was 2.5 per 10,000 live births, of which 1.2 per 10,000 live births were for gastroschisis and 1.2 per 10,000 live births for omphalocele. There was no significant evidence of temporal trend for either gastroschisis [RR=0.81, 95% CI 0.39-1.69] or omphalocele [RR=0.53, 95% CI 0.24-1.13]. However, there were regional differences in prevalence among the 7 counties. There was a significantly higher risk of abdominal wall defects for Orange County [prevalence 3.2 per 10,000 live births; RR=1.98, 95% CI 1.03-3.79] as compared to the other 6 counties. There was no evidence of racial/ethnic variations among abdominal wall defects for Non-Hispanic White, Non-Hispanic Black, Hispanic and Other categories.

Conclusions: In the Hudson Valley Region of New York State, the temporal trend of abdominal wall defects is inconsistent with reports from other populations. However, there are regional differences among the counties, which may have implications for public health surveillance and prenatal monitoring.

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Routine Neonatal Circumcision: Is It Necessary?

Most frequent complication, bleeding, is seen in ~0.1% of circumcisions and can be handled quite well with local measures (pressure, hemostatic agents, cautery, and sutures). Infection is the 2nd most common, but most are minor and manifest only by some local redness and purulence. Isolated case reports published of recurrent phimosis, wound separation, concealed penis, unsatisfactory cosmesis because of excess skin, skin bridges, urinary retention, meatitis, meatal stenosis, chordee, inclusion cysts, and retained Plastibell devices. Rarely circumcision has led to such rare events as scalded skin necrotizing fasciitis, sepsis, and meningitis, as well as with major surgical problems such as urethral fistula, amputation of a portion of the glans penis, and penile necrosis.

There is considerable evidence that newborns who are circumcised without analgesia experience pain and physiologic stress exhibited by changes in heart rate, blood pressure, oxygen saturation, and cortisol levels. One report has noted that circumcised infants exhibit a stronger pain response to subsequent routine immunization than do uncircumcised infants. The usual methods used for analgesia are Dorsal Penile Nerve Block (DPNB), Subcutaneous Ring Block, EMLA Cream etc. Sucrose on a pacifier has been demonstrated to be more effective than water for decreasing cries during circumcision. Acetaminophen may provide analgesia after the immediate postoperative period. Neither technique is sufficient for the operative pain and cannot be recommended as the sole method of analgesia. A more physiologic positioning of the infant in a padded environment also may decrease distress during the procedure. Analgesia is safe and effective in reducing the procedural pain associated with circumcision and adequate analgesia should be provided if neonatal circumcision is performed.

If circumcision is required after newborn period, general anesthesia is often used and requires a more formal surgical procedure necessitating hemostasis and suturing of skin edges. Procedural complications are same as those of newborn circumcision, but there is additional risk related to general anesthesia. There is also be time lost from school or work to be considered.

Health issues relating to the penis could be present in both circumcised and uncircumcised males. True frequency of these problems is unknown. A 1948 Danish study of boys 6-17 years of age showed that 4% of the boys had phimosis (foreskin couldn’t be retracted) and 2% had "tight prepuce" (foreskin could be retracted with difficulty). A prospective cohort study of boys up to 8 yrs of age in New Zealand showed that the relationship between risks of penile problems and circumcision status varied with the child’s age. During infancy, circumcised boys had a significantly higher risk of penile problems (such as meatitis) than did uncircumcised boys. After infancy, the rate of penile problems (such as balanitis and inflammation of the foreskin) was significantly higher in older uncircumcised boys. Many people consider circumcision as an effective method of maintaining penile hygiene, even though there is little evidence to affirm this. Genital hygiene needs to be emphasized as a preventive health topic throughout a patient’s lifetime, whether they are circumcised or not. There are anecdotal reports that penile sensation and sexual satisfaction are decreased for circumcised males. No difference was noted in sensation on the ventral or dorsal surfaces of the glans penis between circumcised and uncircumcised men in studies.

The relationship between circumcision status and incidence of UTI is a well researched topic. Recent studies have shown 3-7 times increased risk of UTI in uncircumcised male infants. Studies show rates of UTI is 0.7 - 1.4% for uncircumcised males & 0.12 - 0.19% circumcised males in the U.S. and Canada. Continued next column

Many of these studies have overlooked potential confounders such as prematurity, breastfeeding and method of urine collection. It was estimated after pooling the results of these studies that 7 to 14 of 1000 uncircumcised male infants and 1 to 2 of 1000 circumcised male infants will develop a UTI during the first year of life. The relative risk of UTI in uncircumcised male infants compared with circumcised male infants is increased from 4-10 fold during the first year of life but the absolute risk of developing a UTI in an uncircumcised male infant is low (at most, ~1%).

Research has also been done looking at relationship between Circumcision Status & Penile Cancer. Uncircumcised status has been strongly associated with invasive SCCP in multiple case series. The major risk factor for penile cancer is phimosis, which exists only in uncircumcised men. Other risk factors include genital warts, >30 sexual partners, and cigarette smoking. Neonatal circumcision confers some protection from penile cancer; however, circumcision at a later age does not seem to confer the same level of protection. The relationship between hygiene, phimosis, and penile cancer is uncertain, although many hypothesize that good hygiene prevents phimosis and penile cancer. In a developed country such as the U.S., penile cancer is rare and the risk of penile cancer developing in an uncircumcised man, although increased compared with a circumcised man, is low.

Evidence regarding the relationship between circumcision status and STDs is complex and conflicting. Studies suggest that circumcised males may be less at risk for HIV & syphilis than are uncircumcised males. Behavioral factors appear to be far more important risk factors in the acquisition of HIV infection than circumcision status. Recently 2 studies in Africa reported a reduction of risk in acquiring HIV by 48% & 53 % in circumcised men.

Absolute indications for circumcision are true phimosis and paraphimosis. Relative Indications are congenital urinary tract abnormalities (for protection from UTI), balanoposthisis, to prevent infection, or reflux. Phimosis can also be treated without circumcision. Topical corticosteroid cream may loosen the phimotic band. Contraindications for circumcision are hypospadias, epispadias, bifid scrotum, penile chordee without hypospadias, penile torsion, megalourethra, meatal stenosis, to prevent abnormality of risk in acquiring HIV by 48% & 53 % in circumcised men.

It is the duty of both the parents and physicians to secure the child's best interest and well-being. As a procedure such as circumcision has potential benefits and risks, it should be the parents who determine what is in the best interest of the child. Physicians should assist the parents by explaining the potential benefits and risks and by ensuring that the parents understand that circumcision is an elective procedure.

There is scientific evidence demonstrating some potential medical benefits of newborn male circumcision; however, these data are not sufficient at this time to recommend routine neonatal circumcision. Analgesia is safe and effective in reducing the procedural pain associated with circumcision and hence should always be provided.

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Continued from previous column –
The goal of the LHVPN Community Health Education Day (CHED) is to educate consumers and providers regarding strategies for improving birth outcomes in the region. CHED is a one day event where multiple organizations across the region will plan educational activities around the chosen theme. The first annual LHVPN CHED, “It Takes a Village...To Manage the Ups and Downs of Parenthood,” was a huge success. This event was a combined effort of over 200 sites, reaching 1104 individuals across the Lower Hudson Valley counties of Dutchess, Putnam, Rockland, Westchester, Orange, Sullivan, and Ulster. The LHVPN, in collaboration with MISN, coordinated agencies and organizations to come together and educate their communities about the identification, maintenance, and treatment of Perinatal Mood Disorders.

A diverse assortment of organizations helped make this event possible. The four county health departments of the LHVPN target region of Dutchess, Putnam, Rockland, and Westchester played integral roles in ensuring this project made an impact on the community. Hospitals across the region hosted events as well. Several community and family health centers participated including Hudson River Health Care of Beacon, Poughkeepsie, and Peekskill, and Open Door Family Medical Centers of Ossining and Port Chester. Managed care organizations such as Hudson Health Plan also participated. Libraries such as the Mid-Hudson Library distributed information. Home visiting agencies such as Dutchess County Healthy Families helped to bring the information directly to the consumer. Child care resource centers such as Child Care Resources of Rockland County, Inc. educated the community through their child care centers. Pediatrician’s offices such as Palisades Pediatrics, LLP of Rockland County opened up their offices to parents for educational seminars. Types of events included community forums, patient seminars, informational tables staffed by health educators, nurses, and lactation consultants, childbirth education classes, public service announcements, and more.

Preliminary survey data show that as a result of participating in CHED, 76.9% of respondents (n=10) have increased visibility of PMD literature in their organization; 61.5% of respondents (n=8) have developed resource lists for PMD; 30.8% (n=4) have begun distribution of PMD educational materials during prenatal visits; and 38.5% (n=5) have increased the quantity of PMD information shared during childbirth education classes. In addition, 94.4% of respondents (n=18) are interested in hosting a CHED event next year. Collaborative efforts surrounding one topic of interest appears to have strengthened partnerships between organizations and improved dialogue and resource identification. One other NYS perinatal network that serves seven counties has already incorporated CHED into their work plans for the 2007-2008 year. The Association of Perinatal Networks of NYS has requested that the LHVPN take the lead in making CHED a statewide perinatal initiative. Perinatal Mood Disorders manifest in a variety of ways, but each one strips some of the joy of motherhood away. Up to 50,000 women in New York State will experience depression/anxiety related to childbirth each year. Thanks to all who participated in CHED 2007, we hope that these women will be identified and treated earlier so that their journey back to a happy and safe motherhood can begin.

C O N G R A T U L A T I O N S!!
Dr. Heather Brumberg, Daddy Josh & Big Sister Tamar
On the arrival of Sydney Hannah Brumberg
July 14, 2007
6lbs. 14oz
Wishing you much happiness!

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**Lower Hudson Valley Perinatal Network**
**Community Health Education Day 2007: A Success!**

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**RESEARCH ABSTRACT**

**Title:** Youth Knowledge of Unhealthy Lifestyle Choices and Obesity Vary by Gender and Behavior

**Background:** Obesity continues to rise in children and teens and is associated with increased morbidities such as diabetes. In order to develop programs addressing these needs, social health marketing research is essential. Although studies have focused on adult and parental knowledge and attitudes of obesity, little is known regarding youth understanding of unhealthy lifestyle choices and resultant outcomes.

**Objective:** To determine factors affecting youth knowledge regarding unhealthy lifestyle choices and obesity in 2 zip codes.

**Design/Methods:** Surveys were collected (6/06-10/06) from 437 youth (mean ± SD=15.5±2.2 yrs) at community events, centers, schools, and in public areas in Mt. Vernon and Peekskill, NY. Chi square analysis was used.

**Results:** Youth identified themselves as 58.1% female (F), 41.4% male (M), 21.5% Hispanic, 12.8% White, 76.9% Black, 2.3% Asian, 1.8% Native Hawaiian or Other Pacific Islander, 5.9% American Indian or Alaska Native and 14% Others. Females more than males overestimated the prevalence of overweight among youth (63% vs. 37%, p=0.015). However, females better understood the role genetics play in overweight (67%F vs. 33%M, p=0.014) and diabetes (64%F vs. 36%M, p=0.005). Of those who did not realize the connection between overweight and diabetes, 87% were Black vs. 13% Non-Black (p=0.047). Poorer nutritional behaviors were associated with incorrect knowledge about the prevalence of overweight (p=0.001) and the link between television (TV)-watching and overweight risk (p=0.002). Surprisingly, correct knowledge about the link between TV-watching and overweight risk was higher among frequent TV-watchers (p=0.045), but lower among frequent video game players (p=0.009). Higher parental education was positively associated with correct knowledge about: TV-watching and overweight risk (p=0.013), the role genetics play in diabetes (p=0.002) and the link between maternal diabetes and neonatal outcome (p=0.043).

**Conclusions:** Youth knowledge regarding obesity and resultant outcomes are significantly affected by demographic and behavioral factors. This research will be used to develop targeted public health initiatives in these two communities.

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**SAVE THE DATE**

**6TH ANNUAL HUDSON VALLEY REGIONAL PERINATAL FORUM CONFERENCE**

“Improving Perinatal Health: Enhancing Families’ Access to Care & Insurance Coverage”

Thursday • October 25, 2007 • 8 a.m. - 4 p.m.
Marriott Westchester • 670 White Plains Road • Tarrytown, NY

**KEYNOTE SPEAKER:**
**RICHARD CARMONA, MD, MPH, FACS**
(17th US Surgeon General)

**GUEST SPEAKERS:**
Deborah Bachrach, JD, Deputy Commissioner, NYS DOH, Office of Health Insurance Programs
Richard Gottfried, NYS Assemblyman, 64th Dist.
New York State Partnership Summit: Birth and Beyond – June 2007

A Legislative Breakfast kicked off the 2007 NYSPA Conference. Mark Kissinger, Deputy Director of the NYS Division of Long-Term Health spoke about the shifts we can expect to see in Medicaid. Eligibility has been expanded to the 400% of the poverty level, and will be streamlined, as the state moves toward increased access to universal coverage. Medicaid is being reframed as a health insurance program, rather than a welfare program, as a means to reduce stigma and improve access.

Mr. Kissinger urged those in attendance to contact our legislators this summer to advocate for the dollars needed in the State budget to accomplish our maternal and child health goals. Our new Governor is keen on keeping the budget process timely.

Rebecca Hatfield from the University of Utah Hospital offered the first general session, “Family-Centered Care – A Strategy for Supporting NICU Families & Outcomes”. Hatfield’s experiences as a new mom with a NICU infant lead her to career as director of the “Parent to Parent” program, a hospital –based volunteer support organization.

To learn more about the range of services Parent to Parent provides to families experiencing high risk pregnancies and whose babies require a stay in the NICU http://uuhsc.utah.edu/wcservices/parenttoparent.


Key points:
- Whites are leaving central places for outlying town types and are “individualistic”
- African Americans are moving into central places and dense suburbs and are “mother dominant”
- Latinos are increasing rapidly in all town types, often with extended families
- More than one third of all births are to single mothers in all groups
- The longer immigrants are in the U.S. the more complications there are during pregnancy – the “Healthy Immigrant Effect”
- Migrant women show low incidences of obesity, smoking and drinking, and there are no significant differences than in the general population

Normalizing Birth presented by Judith Lothian, PhD, RN, LCCE.

Bias in the US has become increasingly intervention intensive. We have become accustomed to expecting trouble during birth. Providers and hospitals are concerned with safety and litigation, and expectant mothers are increasingly afraid of the facing the physical pain and perceived inconvenience of giving birth.

Yet, there is a strong evidence basis for mother-friendly care and labor support that normalizes birthing. Hormones rather than mechanics drive labor. Pain serves several important purposes, including its role as the alarm that brings forth support for the mother and baby, as it signals the progress of labor, and guides the mother to find comfort throughout the process.

Lothian proposes that we talk in plain language about birth, making it a normal acceptable process rather than a medical necessity. In doing so we can acknowledge that in a healthy, normal situation, labor starts and ends on its own, women in labor require freedom of movement to take charge of their comfort, and mothers and babies need not be separated for immediate medical interventions following a normal delivery.

According to research cited by Lothian, normal birth promotes normal breastfeeding and promotes attachment, both of which decrease maternal and infant stress.

Perinatal health before pregnancy and birth was a thread that ran through the many presentations. Starting with goal of universal health insurance coverage and ending with a lifespan perspective on women’s health and wellness, the 2007 conference underscored the need to envision reproductive health as part of a total continuum of health care that is available to all people.
RESEARCH ABSTRACT

Growth Comparison of Moderately Preterm and Very Preterm Infants at 12 Months Corrected Age

Background

Although moderately preterm (MP) infants (32-36 weeks) comprise the majority of preterm births, there are few studies investigating the issues which affect them in the neonatal period, and fewer which look at long term outcomes. Current literature has shown that very preterm (VP, <32 weeks) infants do not thrive well during the neonatal period and their time spent in the NICU. The reasons that they do not grow efficiently is multifactorial, and include the use of TPN providing inadequate nutrition, the inability to feed formula orally secondary to gut immaturity, as well as the increased calories consumed by a sick infant.

Objectives

1. To evaluate for differences in growth between VP and MP infants at three time periods: birth, discharge (D/C) and at 12 months corrected age (CA).
2. To assess growth from birth to infancy within each gestational age subgroup.

Design/Methods

Preterm children seen at the Regional Neonatal Follow-up Program (RNFP) who have had evaluations at 12 mos CA (= 2 months) were stratified into VP and MP subgroups. VP birth, D/C, and 12 month CA anthropometrics [weight (wt), length (ht) and head circumference (HC)] were plotted on a growth chart adjusted for their gestational age at birth, and the resultant percentile rank for each was utilized in our analyses. These percentile ranks were used to compare the growth of the VP to the MP subgroups during three time periods utilizing a two sided t-test. Linear regression was used to investigate any confounding effects by antenatal, demographic, or neonatal variables. Paired t-tests evaluated the growth of patients within each group throughout the three time periods.

Results

Of the 497 preterm infants (<37 weeks GA) in the dataset of infants seen at the RNFP, those who had an evaluation at 12 months ± 2 months CA were included in this analysis (n=169). VP infants (n=77) and MP infants (n=92); mean GA: VP=27 weeks; MP=33 weeks; mean CA at 12 month assessment 12.1 and 11.9 months respectively. There was no statistical difference between the two subgroups in anthropometric percentile measurements in any of the three measured time periods: Birth: [MP wt: 53.8% vs. VP wt: 50.9%]; MP ht: 51.6% vs. VP ht: 44.6%]; MP HC: 56.6% vs. VP HC: 45.4%]; D/C: [MP wt: 36.4% vs. VP wt: 33%]; MP HC: 43.4% vs. VP HC: 39%]; 12 month CA [MP wt: 47.4% vs. VP wt: 45.2%]; MP ht: 55.7% vs. VP ht: 57.7%]; MP HC: 58% vs. VP HC: 59.1%]. None of the 10 potential confounding variables affected this relationship. When we compared growth (expressed as a percentile rank for their adjusted age) at the three time periods within each group, paired t-tests showed a significant reduction from birth to discharge; however, when comparing birth to 12 months CA, in each subgroup, these children regained their birth percentile rank: (MP: Birth wt: 54% ; D/C wt: 35.9%; 12 mo CA wt: 46.5%; B HC: 55.3%; D/C HC: 44.8%; 12 mo CA HC: 59.7%); (VP: Bwt: 51.3% ; D/C wt: 33%; 12 mo CA wt: 45.2%; B HC: 46.9%; D/C HC: 38.5%; HC at 12 mo CA: 59.3%).

Conclusions

Growth expressed as a percentile when adjusting for gestational age is equal during all three time periods when comparing MP and VP infants. This indicates that although MP infants are often thought of as just small full-term infants, and are regarded as being “low risk” they do in fact grow in a similar fashion as the VP infants who are identified as being sicker and at significantly greater risk for failure to thrive than their full-term counterparts. The results of this study therefore should raise our awareness of the fact that the MP infants’ nutritional needs should be vigilantly monitored in a fashion similar to their VP counterparts.

Continued from previous column

Interestingly, for both subgroups of infants, although their growth dropped off significantly from the time of birth to their discharge, these children’s nutritional needs were adequately addressed. This was evident in the fact that by 12 months CA, both subgroups equaled or surpassed their birth percentile ranks in all measurement parameters. Further investigation needs to continue as to how nutrition both during the neonatal period as well as during the infant and toddler years for all preterm infants may effect their future growth and neurodevelopment.

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WELCOME TO OUR 5 NEW NICU FELLOWS FOR 2007

Vanaja Alexander - Vanaja received her BA in Psychology from Johns Hopkins University, graduating with honors and her MD from SUNY Upstate Medical University in Syracuse, NY. Her residency was completed at Long Island Jewish Medical Center. Her love for physiology is coupled with the enjoyment of the neonatal clinical arena where she finds enthusiasm and energy in a teaching environment.

Vadim Bronshtein – Vadim received his MD in St. Petersburgh at the Leningrad Pediatric Medical Institute. His pediatric residency was instituted in Israel from 1991-94 and completed at Lincoln Hospital, Bronx, NY. He also completed a 2 year neonatology fellowship at Children’s & Women’s Hospital of British Columbia, Canada. He was a research assistant for 3 years in Israel and has published two abstracts and one article entitled “Bone maturation in young females with Turner’s syndrome”. Vadim’s hobbies include piano, guitar, chess and ballroom dancing. Greek mythology has always interested him.

Joyanna Calo - Joy, as she is known by her friends, graduated from the University of Santo Tomas Philippines with a BS in Psychology, and then went on to earn her MD there. Her residency was completed at St. Joseph Hospital in Paterson, NJ. Her research experience included a paper on “The awareness of fathers of the benefits of breastfeeding”. Joy is fluent in Filipino.

Krishna Dummula – Krishna completed his pediatric residency in Brookdale University Hospital, NY. He received his MPH degree at the Florida International University in Miami and his MBBS was completed at the Gandhi Medical College in India. His research experience included a grant study on Lead poisoning in Miami-Dade County, and at Brookdale University Hospital his research is on “Prophylactic use of Fluconazole in fungus-colonized very low birth weight babies for preventing fungal sepsis”. He has had 2 publications on lead poisoning and 2 poster presentations while at Brookdale.

Dumitru Turcanu – Sabin received his MD in Romania and completed his residency at Mt. Sinai School of Medicine in New Jersey. He also completed a pediatric residency in Romania and was in private practice there for two years. His Thesis Research was on “Evaluation of Right Ventricle Diastolic Function in Hypertensive Patients”. Dumitru’s extracurricular activities include tennis, basketball, swimming and concerts.

Continued next column
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Please see below the NYMC neonatal web site address to locate other issues of The Perinatal Gazette:

http://www.nymc.edu/neonatology

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