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11-13⁺⁶ Weeks Scan Project Newsletter

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WELCOME to the November 2007 issue of the FMF/USA newsletter. Our feature article is about the significance of the size of difference in NT measurements between co-twins. It is written by Dr. Karl Oliver Kagan, author of many articles on aspects of first trimester screening and colleague of Professor Nicolaides at Harris Birthright Research Centre for Fetal Medicine. This article points, once again, to the utility of the nuchal translucency, above and beyond its power as an early predictor of chromosome abnormalities.

In addition to the twins article, we present a new feature. In question and answer format, we are proud to address some of your inquiries regarding the complex and evolving subject of billing and reimbursement for nuchal translucency exams. We hope you find this useful and welcome your questions, which can be e-mailed to NaomiHG@fetalmedicine.com.

As always, we hope you find the information in this issue of the newsletter informative and welcome your questions and comments.

Discordance in nuchal translucency thickness in the prediction of severe twin-to-twin transfusion syndrome

Karl Oliver Kagan ^{1,2}, Jiri Sonek ³, Kypros Nicolaides ¹

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Monochorionic twin pregnancies have a significantly higher perinatal morbidity and mortality than dichorionic twins. To a large degree, this is due to vascular anastomoses, which are present at the level of the placenta in all monochorionic pregnancies.¹ In about 30% of these pregnancies, the vascular connections result in an imbalance in blood volume in the two fetuses, leading to twin-twin transfusion syndrome (TTTS). Approximately half of these pregnancies are severely affected. By 16-24 weeks' gestation, the fetus with an increased blood volume (recipient twin) will have polyhydramnios due to polyuria and the fetus with decreased blood volume (donor twin) will have either oligohydramnios or anhydramnios due to oligouria.^{2,3} The most effective treatment for severe TTTS has been shown to be endoscopic ablation of the communication placental vessels.

The underlying hemodynamic changes in severe TTTS may be present at the time of the 11-13+6 week scan and may be detectable by ultrasound.⁴ However, since the majority of the amniotic fluid at this gestational age is generated by the placenta and membranes rather than by fetal urination, this does not result in a significant discrepancy in the amniotic fluid volumes.

We evaluated the value of nuchal translucency (NT) and crown-rump length (CRL) measurements at 11-13+6 weeks' gestation in predicting the development severe TTTS in 512 monochorionic twin pregnancies between January 2001 and April 2006. The pregnancies had a follow up ultrasound examination at 16-18 weeks' gestation and every four weeks thereafter. However, if evidence of TTTS was detected, the frequency of examinations was increased. In cases of severe TTTS, endoscopic coagulation of the communicating placental vessels was performed.

In each pregnancy, the difference between the NT (NT1-NT2) and CRL (CRL1-CRL2) were calculated and expressed as a percentage of the bigger measurement. The pregnancy outcome was normal in 412 (80.5%) pregnancies: both fetuses were live born and severe TTTS was absent. In these pregnancies, the median discordance was 11% and 3.6% in the NT and CRL measurements respectively. (cont. on pg. 2)

Discordance in nuchal translucency thickness in the prediction of severe twin-to-twin transfusion syndrome (continued)

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Fifty eight (11.3%) pregnancies were complicated by severe TTTS and were treated with endoscopic laser at a median gestation of 18 weeks. These pregnancies resulted in live birth of either both fetuses and one fetus in 30 (51.7%) and 12 (20.7%) cases respectively. The median gestational age at delivery was 32 weeks. The median discordance was 22% and 6% in the NT and CRL measurements respectively.

One or both twins died in the remaining 42 (8.2%) cases where endoscopic laser was not performed. This occurred prior to 18 weeks' gestation in 19 cases (median NT discordance was 35.3% and CRL discordance was 5.9%) and after 18 weeks in 23 cases (median NT discordance was 7.1% and CRL discordance was 3.1%).

Regression analysis showed that discordance in the NT and CRL measurements at 11-13+6 weeks' gestation correlated with early fetal death and severe TTTS requiring endoscopic laser treatment. The predictive value provided by the NT discordance was not significantly improved by the addition of the CRL discordance. For an NT discordance of 20% or more, the detection of pregnancies destined to either have an early (<18 weeks' gestation) fetal death or to require laser treatment for severe TTTS was 63% and 52% respectively with a false positive rate of 20%.

The value of the 11-13+6 week scan is indisputable. This is especially true in multiple gestations: determination of chorionicity, screening with NT measurement for aneuploidy, and an early fetal anatomic survey. This study shows that measuring NT in monochorionic multiple gestations has the additional value of improving our ability to predict the pregnancy outcome. Based on our data, about 84% of monochorionic twin pregnancies would be expected to have a normal outcome after excluding late fetal deaths. Severe TTTS develops by 18 weeks' gestation in about 12% and early fetal death occurs in about 4% of the cases. Discordance in NT measurements of > 20% is seen in 63% of the pregnancies with early fetal death, and 52% of the pregnancies that develop severe TTTS, but only in 20% of the pregnancies with normal outcome. Overall, if a discordance of > 20% in NT measurements is noted, the risk of a serious complication increases to about 34%. This risk is only 10% if the discrepancy is < 20%.⁵

References

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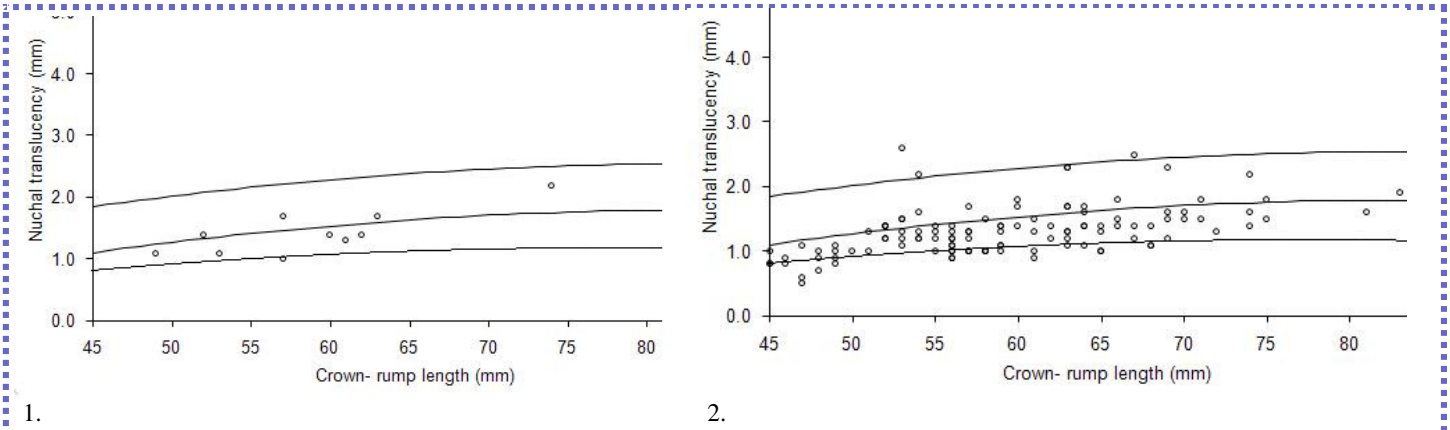
Your annual audit: who is in the population against which your NT measurement distribution is compared?

Annual audit is a crucial component of maintaining high quality of first trimester screening. The Fetal Medicine Foundation of the USA offers annual re-accreditation free of charge. Completing this step is not only necessary as a proof of ongoing proficiency of the operator in obtaining proper images, but also confirms his or her commitment to quality.

The audit for re-accreditation consists of submission of 5 images (nuchal translucency and additional markers such as nasal bone and tricuspid regurgitation if appropriate) and analysis of the NT measurement distribution from the preceding year. If the number of NT measurements equals to or exceeds 30, the distribution of the measurements is compared to a referent population. In the case of the Fetal Medicine Foundation (FMF), the referent population is based on approximately 100,000 nuchal translucency measurements, which had been obtained by FMF accredited operators using a standardized technique developed by the FMF. It is considered the national standard in the USA. The fact that the referent distribution is based on a large number on NT measurements obtained using the same technique as you have been trained in, makes comparison between the two a valid one. It is hoped that your distribution approximates the referent distribution as closely as possible. Allowing for individual variation, 40-60% of your NT measurements are expected to fall above the median (50th percentile). If the image review and data analysis meet expected standards, accreditation is extended for one year. After the process of re-accreditation is completed, you are provided with a laminated card that includes your FMF number, lists the markers in which you are accredited, and the dates when the accreditations expire.

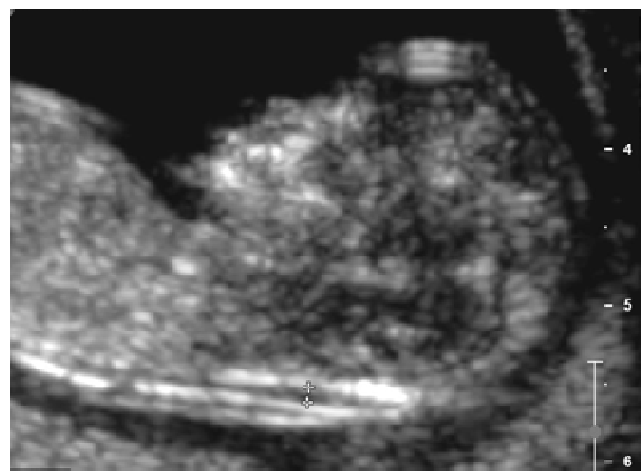


What's Wrong with this Picture?



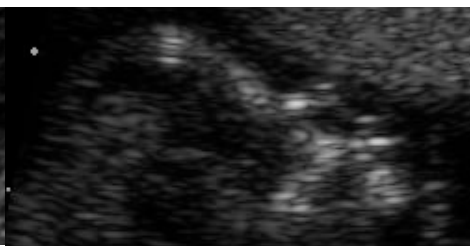
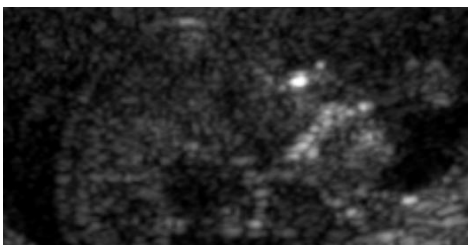
1-2 What do these distributions suggest MAY be occurring?

- A) Looks correct B) Too few data points for a meaningful analysis, do not report and base audit on image review only
- C) Consistent underestimation D) Consistent overestimation



3-4 What's wrong with these NT images?

- A) Fuzzy lines B) Looks correct C) Not measured at widest point D) Not midsagittal E) Not neutral



5-7 What's wrong with these nasal bone images?

- A) Wrong angle of insonation B) Nasal bone is not brighter and thicker than skin C) Looks correct

What's Wrong with this Picture? (answers)

- 1) B 2) C 3) C 4) A 5) C 6) C 7) C



Billing and Reimbursement for First Trimester Screening Q&A

Shan-ann Seitz CPC, Dayton, OH

Question: I was hoping you could help me understand better what insurances are covering when it comes to the nuchal translucency scans. We are currently billing them with the CPT code of 76813 and 76814 when it is twins. These codes are used whether or not the patient has a significant history. Several of the major insurance companies in our area pay approximately \$240 of the \$550, but the Medicaid/Title 19/Dependants on the state pays only about \$112 of the \$550, and the military insurance company in our area also pays about \$112 of the \$550. Are you seeing insurances pay more than what I have listed above? Do you have any suggestions for getting better reimbursement?

Answer: As far as reimbursement by the federal plans you mentioned (Medicaid and military) for the nuchal codes, the federal plans are all going to pay around the same, and that is NOT very much.

These are also codes that you need to NEGOTIATE with your commercial payors. Is your office the only office in the area that has been accredited to do nuchals? If so, be sure your payors know this--it will make a HUGE difference in your negotiations. Can you prove that the number of amniocenteses and CVS's provided has declined since you have begun offering nuchals to your patients? Let your payors know this as well...present it to them as "by offering this specialized ultrasound/blood testing we have been able to reduce the number of invasive, more costly testing that your cardholders had elected to receive in the past. Not only does this reduce the risks to your cardholders, it is saving your company money in the long run."

Negotiating with the commercial payors is really the only way to offset the lower reimbursement from your federal plans.

Upcoming Fetal Medicine Foundation United States Courses*

Face-to-Face Courses (includes hands-on practical training)

Saturday, January 19th in Atlanta, GA (7.5 CME's possible)

Saturday, December 1st in Chicago, IL (7.5 CMEs possible)

Saturday, March 1st in San Francisco, CA (7.5 CMEs possible)

Save the Date: April 2008 in Washington DC (date to be decided)

Contact Melissa Machtolff or Kristin Sherman 1-800-277-4363

(MMachtolff@genecare.com) (KSherman @genecare.com)

Website: www.genecare.com/35/id/Conferences

Online courses:

***Online FMF/USA Course: <http://www.mfmedicine.com/CourseList.aspx>

FMF USA 11-13+6 Week Scan Theory and Practical NT/NB/TF Internet Course (4CMEs for sonographers)

FMF USA Nasal Bone and Tricuspid Flow Theory and Practical Internet Course (4CMEs for sonographers)

Contact: [John Lai 1-416-710-7864](tel:1-416-710-7864) E-mail: John.Lai@mfmedicine.com

* The Fetal Medicine Foundation USA accepts NTQR online or face-to-face theory courses when applying to the FMF USA for NT credentialing. You don't need to take the NTQR online exam after taking their course to submit images to the FMF. After their course, simply download our Film Submission form from www.fetalmedicine.com/usa to submit films to the Fetal Medicine Foundation for NT accreditation. To obtain an FMF nasal bone certificate, you must hold a current FMF NT certificate, so if your NT accreditation is through the NTQR, submit 10 NT images along with your nasal bone films. If you have any questions, contact Naomi Greene by e-mail (NaomiHG@fetalmedicine.com), by phone (1-818-395-0611), or by fax (1-818-766-6766).