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Congenital cardiac myopathy in a baby with an apparently balanced translocation t(7;8)(p21.2;q24.1). C.J.Madahar[1], E.Jenkins[2], R.Coomaralingam[1], J. Roy.[1], A.Yanza[1]. [1] Staten Island University Hospital, S.I., NY, [2] Institute of Basic Research, S.I., NY.

Balanced translocations are generally not associated with congenital abnormalities but there is always a potential risk, especially when it is *de novo*, but anomalies are reported even when it is familial. We describe a baby girl born full term to a 24 year old G2P0 woman with no evaluated risk factor. Pregnancy was unremarkable, but at 37 weeks GA, sonogram showed fetal ascites and the baby was delivered the next day by C-section. Baby was cyanotic and was immediately intubated and placed in a ventilator. Physical examination showed no abnormalities except for abdominal ascites. Fluid was removed and cultured but no virus or other microorganisms were detected. Renal sonogram revealed normal size kidneys. Chest X-Ray showed an enlarged heart. Cardiac anomalies diagnosed were: anterior mal-alignment contruncal ventricular septal defect, large secundum atrial septal defect, dilated and hypo-contractile ventricles, left sided aortic arch, patent ductus arteriosus with left to right shunt, and frequent unifocal premature ventricular contractions.

Chromosome analysis showed an apparently balanced translocation between distal 7p and distal 8q, and the karyotype was 46,XX, t(7;8)(p21.2;q24.1). FISH studies using Coatasomes 7 and 8 confirmed this diagnosis. Both parents had normal karyotypes.

Congenital abnormalities associated with apparently balanced translocations may be due to minute deletions at breakpoints, disruption of crucial genes or position effect of genes brought together by translocation. Breakpoint 8q24.1 in this patient is within a crucial chromosome region deleted in Langer-Giedion syndrome. Our patient does not show any characteristic features of L-G syndrome but congenital heart disease has been reported in some cases of L-G syndrome. Further molecular studies are needed to identify any disruption or minute deletions of genes at both breakpoints in order to evaluate the genetic imbalance in this case.

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A FISH study of trisomies 7 and 8 in prostate cancer. H. F. L. Mark, S. Das, H. Kye, C.-L. Sun, M. Samy, and D. Feldman. Lifespan Academic Medical Center Cytogenetics Laboratory, Rhode Island Hospital and Brown University School of Medicine, Providence, Rhode Island.

Trisomies are products of chromosomal nondisjunction, which in turn is a manifestation of genetic instability, which has been implicated in the genesis and progression of many cancers. Specifically, we reported extensively on abnormal chromosome 8 copy number, which appears to be an ubiquitous phenomenon in many cancers. In addition to trisomy 8, trisomy 7 was also explored. In the present retrospective study, fluorescent *in situ* hybridization (FISH) using chromosome 7 and chromosome 8 enumeration probes (Vysis, Downer's Grove, IL) was performed on formalin-fixed, paraffin embedded materials for the purpose of studying chromosomes 7 and 8 aneuploidies. Out of a total of 56 cases studied, 33 (59%) was found to be trisomic for chromosome 7, and 4 (7%) was found to be trisomic for chromosome 8. A tumor was scored trisomic if $\geq$15% of the cells had three signals. Of the trisomic 7 cases, 4 were also trisomic for chromosome 8, and 29 were disomic for chromosome 8. Of the trisomic 8 cases, all 4 were also trisomic for chromosome 7 and none were disomic for chromosome 7. One trisomic 7 and trisomic 8 case was found to be also trisomic for chromosome 17. These data will be compared with other cytogenetic and clinicopathologic information on this cohort of patients. Thus, a subset of prostate cancer clearly exists which is characterized by chromosome 8 trisomy, which has been reported in many other cancers. However, in the present study, the small subset of trisomic 8 tumors significantly overlaps the much larger subset with abnormal chromosome 7 number. The study is ongoing. (This research was partially funded by Vysis, Inc., Downers Grove, IL).

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Identification of 46,XX/46,XY chimerism in an infant with ambiguous genitalia. M.W. McClellan[1], J.M. McClellan[1], K.D. Ball[1], T.C. Williams[1], M.L. Johnson[2] and D.T. Rigdon[1]. [1]USAF Medical Genetics Center, 81 MDOS, Keesler AFB, MS, [2]82 MDOS, Sheppard AFB, TX.

A variety of molecular methods can aid in the elucidation of complex chromosomal aberrations. We report the case of a newborn infant with ambiguous genitalia born to a 32 year-old G2 P1. Physical exam at delivery showed a vigorous infant with a small phallus with mid-shaft hypospadias. A bifid scrotum was present, with a palpable gonad bilaterally. Abdominal ultrasound showed no female internal structures. Blood was obtained for karyotype and sex determination, and CAH was ruled out. Initial PCR was positive for *sry* sequences; amelogenin studies done on the same sample showed only X sequences. The preliminary karyotype showed only 46,XX cells. The amelogenin studies were repeated with a longer exposure, and this time in addition to the normal X sequences, very faint amplification of the Y sequences was visible. Final prophase karyotype showed the majority of cells to be 46,XX, however 4 of 22 cells examined showed a 46,XY pattern. Fluorescent *in situ* hybridization studies, using both whole chromosome paint for the Y chromosome, and a mixture of alpha satellite and classical satellite probes confirmed the presence of XY cells in the culture. The karyotype was 46.XX[18]/46,XY[4].ish (wcpY+ ,DYZ1+,DYZ3+). The infant is doing well at 3 months and is being raised as a male. Good communications and coordination between the cytogenetic and molecular labs in this potentially confusing case allowed for a rapid diagnosis.

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A small paracentric inversion of chromosome 18, inv(18)(q22.1q23), in a woman with multiple congenital anomalies and mental retardation. G.S. Sekhon[1], S. Scheib-Wixted[1], M.S. Williams[2], X.T. Reveles[3], R.J. Leach[3]. [1]University of Wisconsin-Madison, Waisman Center, Madison, WI, [2]Gundersen Clinic, LaCrosse, WI, [3]University of Texas Health Science Center, San Antonio, TX.

We report on a 42 year old woman with the smallest reported paracentric inversion of chromosome 18, with the karyotype 46,XX,inv(18)(q22.1q23). The patient shows some of the features often seen in 18q- syndrome patients including short stature, developmental delays, mental retardation, midface hypoplasia, upslanting palpebral fissures, sparse hair, atretic ear canals, mild conductive hearing loss, and aggressiveness. Although cytogenetically it appears that no chromosomal material is lost, FISH studies using an 18q telomeric probe showed that chromosomal material comprising part of band 18q23 is lost. Further molecular studies showed the MBP gene, which maps to 18q23, was missing. We suggest that all chromosome inversions involving telomeric regions be evaluated by telomere FISH probes for deletion.