

polymalformative syndrome revealed by ultrasound which showed microcephaly, cerebral malformation, cleft palate and diaphragmatic hernia. Chromosome analysis from amniocytes showed an abnormal karyotype with a large chromosome 7q deletion. The karyotype of the parents revealed a normal karyotype of the mother but the father was a mosaic with a non reciprocal translocation. Using RHG, GTG banding and fluorescence in situ hybridization, we established the paternal karyotype as:

46,XY,del(7)(q33)[11]/46,XY,del(7)(q33),der(12)(7qter→7q33::12p13→12qter)[39].

FISH, CGH and SNParray confirmed the mosaicism, and precisely defined the non reciprocal translocation with the absence of the subtelomere 12p on the long arm of chromosome 7 and its interstitial position on the der(12).

This Paternal rearrangement with a normal phenotype was de novo, the karyotypes of the father's parents were normal.

All this data raise three queries:

- Mechanism of chromosome healing by telomere capture and neo-telomere formation; it has been described by Meltzer as a stabilizer of broken chromosome by non reciprocal translocation.
- The occurrence of the mosaicism and its distribution in the body. The possible coexistence of two cell lines resulting from post zygotic mitotic errors. This phenomenon can contribute to possible unequal distribution of unbalanced cells.

From the father we found also the same percentage of mosaicism in the skin. Therefore, we cannot evaluate it in different germ-cell stages. However, the two cell lines could coexist and generate gametes with normal chromosomes or with a partial deletion or a partial duplication of 7.

- Normal phenotype despite unbalance chromosome with a large deletion is not usual. In the literature, all cases with this large homogenous deletion still have important signs of brain malformation because of Sonic Hedgehog deletion.

This particular case raises several problems, and specially difficulty in genetic counselling.

1.P24

A “de novo” inv dup del (6q) - a case report

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Introduction: Complex rearrangements resulting in inverted duplications contiguous to a terminal deletion (inv dup del) were first reported for the short arm of chromosome 8 in 1976. Since then this type of structural anomaly has been described for an increasing number of chromosomes. In these rearrangements, the concomitant presence of a deletion and a duplication has important consequences in genotype-phenotype correlations. The authors describe the clinical findings and the cytogenetic characterization of a rare inv dup del involving the long arm of chromosome 6.

Material and methods: A girl aged 5 was referred for subtelomeric studies with the indication of psychomotor retardation, autistic features and stereotypies. Chromosome analysis with high resolution GTL-banding was performed on metaphases obtained from cultured peripheral blood lymphocytes. Molecular studies included MLPA (Kits P036 and P070, MRC-Holland), FISH with subtelomeric and whole chromosome painting probes specific for chromosome 6 and cCGH techniques.

Results: Initial MLPA studies detected a subtelomeric deletion in the long arm of chromosome 6; the subsequent karyotype revealed a structurally abnormal chromosome 6 with additional material in the end of the long arm. FISH analysis showed the deletion and demonstrated that the extra material was derived from chromosome 6; cCGH techniques defined the extension and confirmed the breakpoints of the duplicated segment. Thus this rearrangement was interpreted as an inv dup del (6q). Since parental karyotypes were normal, this anomaly was considered “de novo”.

Discussion: As far as we know this is the first description of a patient presenting with a “de novo” inv dup del (6q). We compare the clinical features in this child with the previously reported cases with either an isolated terminal deletion or a duplication of distal 6q. The authors enhance the importance of the combination of high resolution banding with molecular studies in the characterization of this rare rearrangement.