Reviewer’s report

Title: 4q27 deletion and 7q36.1 microduplication in a patient with multiple malformations and hearing loss: a case report

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Reviewer: Yoshihiro Noguchi

Reviewer's report:

This is a case report on a patient with a deletion of chromosome 4q and a microduplication of chromosome 7q. The patient suffered from severe developmental delay, dysmorphic features (ocular hypertelorism, exophthalmos, low-set ears etc.) as well as left hearing impairment. It seems that there had been no report of a patient with chromosome 4q deletion and 7q duplication. Thus, a report on the phenotypic appearances has plenty of meaning for clinical genetics. However, authors should describe the findings of hearing impairment in more detail.

#1: p5. Brainstem auditory evoked potential showed the left auditory pathway disorder. Authors should mention acoustic stimulus (click?) and sound intensities used for measuring BAEP, and BAEP thresholds for both ears. Otherwise, severity of hearing loss is unclear.

#2: In general, hearing impairment is divided into conductive (external and/or middle ear impairments) and sensorineural (inner ear, cochlear nerve and/or central auditory pathway impairments) hearing loss. This patient had low-set ears, which was a kind of external ear anomaly, and was frequently combined with middle ear anomaly including malformation of auditory ossicles. These anomalies cause conductive hearing loss. Besides, a patient with diplogenesis is easily suffered from middle ear infection (otitis media with effusion etc.), which can cause conductive hearing loss. Therefore, authors should show otoscopic (eardrum and external auditory canal) finding and CT images of temporal bones of this patient.

#3: p9. Authors make mention on GAB1 gene, which is located on the deletion area of 4q. GAB1 is the causative gene for autosomal recessive non-syndromic hereditary hearing loss (DFNB26) and its variants can cause bilateral profound sensorineural hearing loss. However, hearing impairment recognized in this patient seems to be unilateral. Besides, it is unknown whether the hearing impairment is sensorineural hearing loss or not. I think that GAB1 gene is not associated with left hearing impairment of this patient.

#4: All gene symbols should be italicized.
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Unable to assess

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Unable to assess

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

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Not relevant to this manuscript

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Please indicate the quality of language in the manuscript:

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