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A case of antenatal bilateral pleural effusion with a previously unknown familial variant in the RASopathy panel

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BACKGROUND

- Fetal pleural effusions are rare 1 : 10-15,000 pregnancies[1]
- Broad differentials should be considered
- Further testing should be considered

AIMS

- Highlight the importance of offering additional genetic panel testing in pleural effusions (particularly with a normal microarray).

CASE SUMMARY

- A 25F G1P0 with bilateral pleural effusions on morphology was referred for tertiary assessment which had resolved by 22 weeks.
- Right sided re-accumulation at K30+5 associated with mediastinal shift was managed with uncomplicated thoracocentesis and amniocentesis.
- Induction of labour at K39+1 lead to vaginal birth with a live neonate (3500g; APGAR 8 and 9; no respiratory distress).
- Trio testing and genetic review was performed.

RESULTS

- Amniocentesis revealed a normal microarray and FISH (46,XX).
- CMV and toxoplasmosis PCR were negative.
- A RASopathy panel revealed a heterozygous missense variant on the protein tyrosine phosphatase non-receptor type 11 (PTPN11) gene[8]. This was found to be a familial variant following parental testing.
- This variant is not diagnostic of Noonan syndrome nor can it confirm the cause of the pleural effusions.

DISCUSSION

- Mutations in RASopathy genes, including PTPN11, may cause Noonan syndrome[2,3].
- Spontaneous early-onset pleural effusion may prompt the diagnosis with a positive RASopathy panel[4,5] particularly when the microarray is reported as normal and thus a RASopathy panel is recommended.
- Ultrasound features include increased nuchal translucency, cystic hygroma, hydrothorax, renal anomalies, polyhydramnios, cardiac anomalies, ascites, and hydrops fetalis[6,7].
- There is variable penetrance and expression of RASopathy gene defects[9,] which could account for fetus' pleural effusions when the variant is familial.

References

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