OP02.06 - Noonan Syndrome fetal phenotype with PTPN11, RIT1, RAF1 and NRAS pathogenic variant: sonographic findings, foetopathology study and literature review

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Noonan Syndrome (NS) (OMIM 163950) = Autosomal dominant disorder belonging to the RASopathies with estimated prevalence in general population of 1 in 1000–2500.

OBJECTIVES

- Clarify the diagnostic circumstances and Determine the most common fetal malformations, as well as
- More unusual malformations, using autopsy data.
- Better knowledge of fetal phenotype could improve prenatal screening by indentifying hallmarks of NS and facilitate prenatal care.

PATIENT AND METHOD

- Multicenter French retrospective study between 2009 and 2016.
- Inclusion : pregnancy follow-ups and fetal autopsies with confirmed NS molecular diagnosis.
- Population characteristics were collected on ultrasound and autopsy data.

RESULTS

- 16 fetuses included
- 12 PTPN11 pathogenic variants (75%) with 50% de novo
- 9 TOP (56%) with Average term = 23WG
- 7 IUFD (44%) with Average term = 28WG
- Increased NT = 93% (US)
- Persistent increased NT until 15 WG = 80% (US)
- Webbed neck = 69% (FP)
- Pleural effusion = 67% (US) vs 40% (FP)
- Pulmonary hypoplasia = 67% (FP)
- Dysmoria = 25% (US) vs 100% (FP)
- Hydrops = 33% (US) vs 44% (FP)
- Hypertrophic cardiomyopathy = 25% (US) vs 40% (FP)

CONCLUSION

When the diagnosis of NS is mentioned, a eutrophic or macrosomal fetus or one with a neurological abnormality should not rule out the diagnosis.

The prenatal prognosis of NS should be clarified and studied considering the pre- and post-natal mortality rate in order not to ignore the most extreme forms of this syndrome.