Meet Maria*

Late first trimester | ~11–14 Weeks Gestation

Maria had experienced a previous pregnancy with cystic hygroma, prompting a referral to a Maternal Fetal Medicine (MFM) specialist to review her history, current findings, and next steps. At her early fetal anatomy scan, Maria's pregnancy showed: Cystic hygroma and single umbilical artery. Maria was referred to an MFM.

~12 weeks:
Diagnostic testing initiated

Maria and her partner met with an MFM who informed them that ~50% of cystic hygroma cases have a genetic cause, most of which are chromosomal anomalies. They elected to pursue diagnostic testing.

She underwent chorionic villus sampling (CVS), with samples sent for:

- FISH
- Chromosomal microarray (CMA)

Result: Negative

~13 weeks:
When answers are still unclear

- The initial test results did not explain the fetal findings and the couple was offered exome sequencing (ES) as a trio to further evaluate a single gene disorder.
- She and her partner chose to proceed with fetal exome sequencing.

A diagnosis identified

- Exome sequencing revealed two variants in the LZTR1 gene, confirming:
  - Autosomal recessive Noonan syndrome

Impact on care

A molecular diagnosis enabled the following:

- Identification of the genetic cause of cystic hygroma
- Possible explanation of cystic hygroma in prior pregnancy
- Confirmation of inheritance pattern for recurrence risk assessment

Clarity early in the pregnancy can allow for:

- Early decision making for pregnancy outcomes
- Proactive decision-making for delivery decisions and coordination of care planning

When cystic hygroma is identified and CMA is negative, exome sequencing can uncover underlying monogenic causes— providing answers earlier in pregnancy to *guide care*

Offering CMA + ES concurrently is recommended in certain circumstances and may reduce time to diagnosis during critical periods of uncertainty and clinical decision-making.[1]

Bundle options

Concurrent bundles
Run CMA + exome/genome together for speed

Reflex bundles
Start with CMA, reflex to exome/genome if needed

Available as **proband, duo, and trio configurations**

References: **1.** SMFM, TN Sparks, ME Norton, SMFM Publications Committee 2026
*Case study based on GeneDx patient testing. All identifying information has been removed.

SMFM updates guidance on genetic evaluation in NIHF

Concurrent genomic testing is now part of the diagnostic conversation

Non-immune hydrops fetalis (NIHF) remains a **heterogeneous condition** with genetic, structural, infectious, and placental etiologies, requiring a broad and systematic diagnostic approach. Updated recommendations emphasize:

Universal diagnostic testing
All pregnancies with ≥1 fetal effusion should receive genetic evaluation, including CMA ± karyotype

Expanded role of sequencing
Exome or genome sequencing are recommended when CMA/karyotype are non-diagnostic and no clear etiology is identified

Support for earlier comprehensive testing
Concurrent CMA + exome/genome is reasonable when:

- Rapid diagnosis is clinically important
- Aneuploidy risk is low
- A single-gene disorder is suspected

Shift toward individualized, etiology-driven care
Diagnostic strategy should align with clinical presentation, urgency, and patient preferences

The shift to integrated genomic testing

Introducing GeneDx Prenatal Bundles, designed to support guideline-aligned testing strategies

GeneDx enables CMA + exome or genome in a single, streamlined order, reducing friction in complex cases

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Why it matters

- Faster answers without sequential testing delays
- Reduced re-collection risk
- Flexible pathways based on urgency or payer considerations
- Simplified ordering for complex cases

Aligned with latest SMFM guidance
Explore GeneDx prenatal exome and genome testing

genedx.co/prenatal-genetic-testing