OP-001 Fetal branching anomalies of the aortic arch and vascular rings: an experience of a single Italian reference center

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Objective: The aim of this study is to analyze concordance between fetal and neonatal diagnosis of branching anomalies of the aortic arch and vascular rings and their clinical outcome in a single Italian reference center.

Methods: We conducted a retrospective study from January 2021 to December 2023.The prenatal diagnosis was confirmed by postnatal echocardiogram and in cases of suspected vascular rings with a computed tomography (CT).

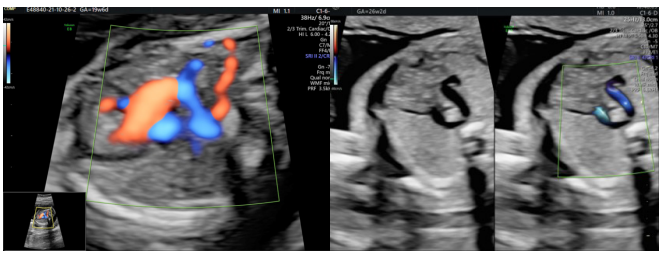

Fig 1. and 2.

Results: 4711 fetal echocardiography were performed and branching anomalies of the aortic arch or vascular rings were suspected in 103 cases. 62 cases were an incomplete vascular ring aberrant right subclavian artery (ARSA); 1 case was associated with prenatal diagnosis of Tetralogy of Fallot (ToF); 16 cases were isolated right aortic arch (RAA) and 25 were RAA with aberrant left subclavian artery (ALSA) of which 1 case was associated with ToF and persistent left superior vena cava (PLSVC). Only 12 amniocenteses were performed, 75% results with normal karyotype and 25% with chromosomal/genetic abnormalities. In postnatal series, concordance between prenatal diagnoses was 75% for RAA, and 100% for RAA + ALSA. In postnatal, 2 cases of prenatal diagnosis of RAA were associated with ALSA and 2 cases with double aortic arch, but in 1 of these, a CT with conclusive diagnosis of RAA + ALSA was performed.

Conclusion: In our series, the most common anomaly was isolated ARSA without cases of dysphagia lusoria in newborns. Our genetic evaluation is suboptimal. In the absence of major congenital heart disease association or karyotype anomalies counseling should be reassuring to parents.

Keywords: Vascular rings, fetal echocardiography, prenatal diagnosis, congenital heart disease

OP-002 Excessive prenatal supplementation of ıodine and fetal goiter; report of managment conservatively of fetal goiter: a case report

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Objective: Iodine is an essential mineral for the synthesis of thyroid hormones, so its deficiency can lead to serious problems. Therefore, routine iodine supplementation is recommended for pregnant women by World Health Organization .

Fetal thyroid disorder is uncommon, and typically arises in the context of a managed maternal thyroid condition. Antithyroid therapy in mothers contributes to 10–15% of cases of congenital hypothyroidism in fetuses.

The excessive iodine ingestion above daily intake limits during the pregnancy is a well-known mechanism among the known causes of fetal goiter. The occurrence of fetal goiter in babies of euthyroid mothers is quite rare.

Fetal goiter, due to the maternal and fetal complications it causes, affects long-term morbidity and mortality. Among these complications are polyhydramnios, intrauterine growth restriction (IUGR), preterm birth, labor dystocia, hypoxia and brain damage resulting from airway obstruction caused by this mass.

Methods: At 24 weeks pregnant, a 27-year-old primigravida was referred for a routine second trimester ultrasound evaluation despite not having a relevant family history or any personal thyroid or autoimmune illness. which showed cervical hyperextension and a high vascularized, bilobed, and symmetric mass in the anterior region of the fetal neck measuring 2.6 cm cranio-caudal × 1.5 cm transverse >%95 SD, suggesting fetal goiter. No signs of polyhydramnios, and no other fetal anomalies were found. Overall, these findings stated fetal goiter.

The patient seemed to be clinically euthyroid and denied having ever had thyroid problems. Thyroid function tests performed on the mother's serum were also normal.

Thyroid peroxidase and anti-thyroglobulin antibodies were both within the reference range. No known medication exposures occurred. The only prescription she was known to be taking was a prenatal vitamin.

On the 24th week of gestation, the mother's urine iodine content was 972 µg/L /24 h (normal range: 150–249 µg /24 h).

When a detailed anamnesis was taken, it was learned that the patient had misunderstood the recommended dose of medication. It was learned that instead of two drops (250 µg), she used two droppers full of medicine (estimated 5000 µg) starting from the 4th week of pregnancy. Supplements were immediately discontinued and followed up at two week intervals.The patient was informed about the possibility of fetal goiter and hypothyroidism due to excessive iodine intake, along with all associated risks. Amniocentesis and cordocentesis were discussed, and it was explained that fetal TSH measurement would determine the treatment plan as needed, but she did not accept this and intra-amniotic therapy because of the potential risks of the procedures. She declined the invasive procedures and preferred to proceed with expectant management. Subsequent ultrasounds demonstrated resolution of the fetal goiter. During follow -up late onset IUGR was observed.

At 37 weeks gestation, she had ceserian delivery, and the result was a 2340 g girl baby. The thyroid was not palpable at delivery. By the day of birth, postnatal thyroid scans showed a steady state of euthyroidism. The newborn's hearing screen confirmed both sides of the response to be normal. The baby was euthyroid, healthy, and reaching all developmental milestones at eight months of age.

Results: This case report sheds light on the consequences of maternal excessive iodine intake, which can result in conditions such as fetal goiter, as seen in our case. Additionally, this case presentation demonstrates the immaturity of the Wolff-Chaikoff effect in fetuses, indicating that they have not yet developed the ability to escape from it. The fetus is thought to be particularly susceptible to the suppressive effects of excessive iodine because it cannot avoid the Wolff-Chaikoff effect, a defensive mechanism that stops the creation of excess thyroid hormone in the event that plasma iodine levels abruptly rise.Excessive iodine consumption in healthy individuals momentarily and abruptly impairs thyroid hormone secretion and thyroid biosynthesis. Following an extended period of exposure to high levels of iodine, organification and thyroid hormone biosynthesis proceed normally. The developing fetal and neonatal thyroid gland is unable to reduce intracellular iodine transport, in contrast to adults and children. Thus, the fetus continues to be hypothyroid. Because fetuses have not yet developed the ability to escape from the Wolff-Chaikoff effect before 36 weeks, excess iodine can result in persistent fetal hypothyroidism . This effect resolves when the excessive iodine supplementation is removed. During pregnancy and childbirth, complications associated with fetal goiter may occur. Tracheal compression can result in postnatal asphyxia, intrathyroidal arteriovenous shunting can lead to high-output cardiac failure in the fetus and subsequent hydrops, and esophageal compression may diminish the fetus's capacity to ingest amniotic fluid, contributing to polyhydramnios, thereby increasing the likelihood of preterm delivery. In addition, neck hyperextension from the goiter could result in malpresentation during delivery and delivery dystocia may occur. In our case, three weeks after discontinuation of iodine, fetal goiter had resolved, and fetal neck hyperextension had improved on examination. Therefore, these complications were not observed in our case.

One of the obstetric complications seen in cases of fetal goiter is intrauterine growth retardation (IUGR).IUGR developed.

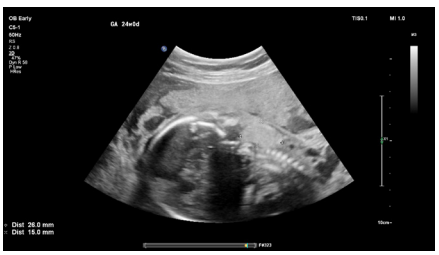

Fig 1. Coronal view of the one lobule of visible thyroid goiter on the anterior face

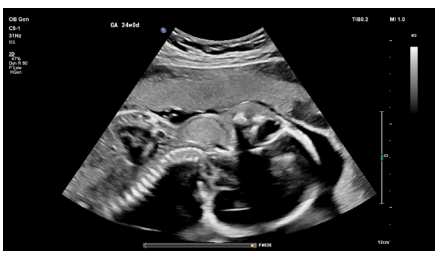

Fig 2. Sagittal view of the 24-week fetus with a visible thyroid goiter on the anterior face and hyperextension neck

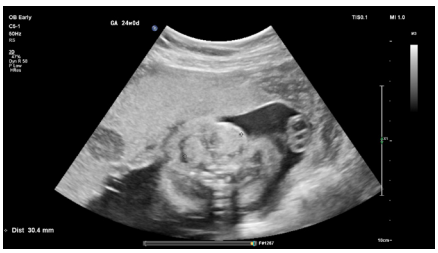

Fig 3. Ultrasound demonstrating two hypoechogenic symetric masses measuring 30 mm transvers lenght

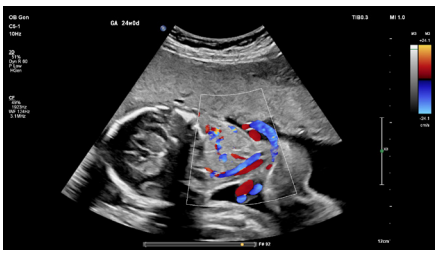

Fig 4. Color Doppler of the fetal goiter, hypervascularization of the fetal thyroid gland

Conclusion: Our case highlights the importance of timely diagnosis and management of fetal goiter to prevent potential obstetric complications . While antenatal detection and treatment options were limited in our case due to patient preferences, postnatal assessments showed positive outcomes, including the resolution of fetal goiter and normal bilateral hearing tests.

Another point we want to emphasize with this study is that clinicians and healthcare providers should carefully review the medications and supplements used by patients and ensure they are being used at the correct dosage. Improper use of any medication can lead to teratogenic effects.

Keywords: Hypothyroidism, intrauterine treatment, euthyroid, fetal goiter, iodine supplementation

OP-003 Labour induction in obese patients

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Objective: The practice of induced labour has risen to approximately 33% of all pregnancies. It is essential to know what the outcome will be for patients with higher BMI, as it is a high-risk pregnancy, and this would help avoid surgical interventions and related complications in the future. This study aimed to see how a woman's BMI affects the outcome of induced labour.

Methods: This retrospective study used data from Riga Maternity Hospital and included 8759 women presenting with induced labour from 2016 to 2022. The data was processed using IBM SPSS Statistics version 28, comparing induction outcomes in two main groups: first-primiparas and second-multiparas. Next, these two groups were divided by BMI and studied separately — Group A or control group with BMI<25; Group B – BMI 25-29; Group C – BMI 30-39; Group D – BMI > 39.

Results: Primiparas with normal BMI in 23% had a CS, and in 77% had a vaginal birth. Group B primiparas in 31% had a CS, so OR to have a CS is 1.5 (95% CI 1.3-1.8). Group C primiparas in 41% had a CS, so OR is 2.3 (95% CI 1.8-2.8). Group D primiparas in 43% had a CS, so OR to have a CS is 2.6 (95% CI 1.5-4.6). Multiparas with a normal BMI in 7% had a CS, and 93% had a vaginal birth. Group B multiparas in 11% had a CS, so OR is 1.8 (95% Ci 1.4-2.4) Group C multiparas had CS in 13%, so OR is 2.1 (95% CI 1,5-3). Almost all group D multiparas had vaginal birth (95% CI 0.3-2.7).

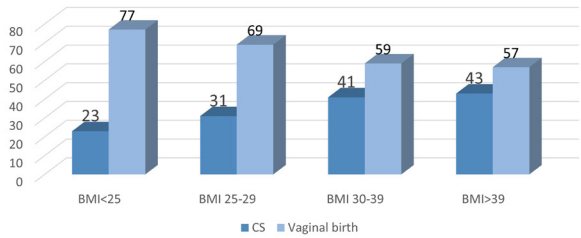

Fig 1. Primiparas CS and vaginal birth ratio depending on BMI

Conclusion: Primiparas with obesity have a high CS rate. CS risk increases with the primipara BMI. Multiparas with obesity, despite the BMI, have a high chance of delivering vaginally. Having a normal BMI to deliver the first baby is highly recommended.

Keywords: Abour induction, obesity, bitrh, cesarean section

OP-004 Reversing the reversed: successful case of early-onset fetal growth retardation

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Abstract: A fetus that has failed to reach its growth potential due to a pathologic process has fetal growth restriction. Fetal growth restriction is said to be of early-onset if it is diagnosed before 32 weeks. Many interventions were investigated, but when there is a high-risk for fetal death, the only management option of significance is iatrogenic preterm birth, with corticosteroids and magnesium sulfate to improve outcome. However, early delivery