



## Placental Pathology

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### Editorial Note

In the evaluation of pregnancy complications, neglect of the placenta in developed countries has become a thing of the past. In 1997, the American College of Pathologists published guidelines for examining placentas in high-risk pregnancies; subsequently, the Perinatal Section of the Society for Pediatric Pathology within the us published a series of reports led by Redline et al. about the classification and reproducibility of the diagnosis of placental lesions. Such lesions were broadly categorized as those according to 1) amniotic fluid infection, 2) maternal vascular underperfusion, and 3) fetal vascular underperfusion, to which was added a fourth category-chronic placental inflammation. During a workshop organized in Amsterdam in 2014, the recommendations for sampling and therefore the definitions of placental lesions were updated.

However, to date, there's little or no information on how frequently histologic inflammatory or vascular lesions are found in placentas of patients with normal pregnancy outcomes, and this information is required to interpret the importance of placental histopathologic findings in patients who have obstetrical complications. Moreover, this information can also be useful in counseling patients about the result of the index pregnancy, the prognosis for subsequent pregnancies, and during a medicolegal context. Often, the placenta has been considered a "witness" in litigation.

### Examination

Placentas underwent routine clinical examination consisting of storage at 4°C before fixation, fixation in 10% buffered formalin, photographs of the maternal and fetal surface, measurement, trimmed weight, sectioning, and examination of the cut surface. Sections

submitted included 2 of membrane rolls, a minimum of 2 of duct, 3 maternal surface biopsies, 2 full thickness sections, and stratified sampling of any lesions present. Sections underwent routine processing, embedding, sectioning at 5 µm and marking with H&E. Histologic examination was performed by subspecialty perinatal pathologists who were conscious of the COVID-19 status. Cases were reviewed by 2 pathologists to verify the diagnoses.

### Materials and Methods

We included three women who had been tested antenatally for SARS-CoV-2 by nasal swabs due to symptoms and two asymptomatic pregnant women detected by universal screening when entering for delivery at the University Women's Hospital Basel, Switzerland since March 2020. The lockdown was imposed on March 15, 2020 in Switzerland. Altogether, five respective placenta specimens have since been sent for histologic examination to our institute. After fixation for a minimum of 48 h to scale back infectiousness, placentas were processed consistent with standard procedures, which include histologic examination of 1 block of the duct, one block of the chorionic membranes also as three blocks of placenta tissue [19]. Additionally, macroscopically evident changes like infarctions of hematomas were embedded. All slides were stained by haematoxylin and eosin. Pathological findings were classified consistent with the present Amsterdam Placental Workshop Group Consensus Statement.

### Analysis

Comparisons were made between placentas of girls with COVID-19 and historical controls also as between placentas of girls with COVID-19 and ladies with placental evaluation for a history of melanoma. The placenta from 1 trimester miscarriage was excluded from statistical analysis. Quantities are reported as mean variance.

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