CORRESPONDENCE

COVID-19 CASES

To rapidly communicate information on the global clinical effort against Covid-19, the Journal *has initiated a series of case reports that offer important teaching points or novel findings. The case reports should be viewed as observations rather than as recommendations for evaluation or treatment. In the interest of timeliness, these reports are evaluated by in-house editors, with peer review reserved for key points as needed.*

An Uncomplicated Delivery in a Patient with Covid-19 in the United States

At 39 weeks of gestation, a 34-year-old woman (gravida 7, para 5) presented to the labor and delivery unit with a 3-day history of fever, chills, dry cough, and myalgia. She reported decreased fetal movements during the past day. She worked as a waitress and reported that she had not traveled recently. Her husband had had similar symptoms for the past 24 hours.

The patient was given a surgical mask. Droplet and contact precautions were initiated, and she was transferred to the emergency department after it was determined that no immediate obstetrical intervention was warranted. All staff caring for the patient wore appropriate personal protective equipment.

In the emergency department, the patient's temperature was 36.6°C, the pulse 125 beats per minute, the blood pressure 133/75 mm Hg, the respiratory rate 18 breaths per minute, and the oxygen saturation 99% while she was breathing ambient air. Breath sounds were diminished in intensity without adventitious sounds. Chest radiographs showed reticular interstitial opacities (Fig. S1 in the Supplementary Appendix, available with the full text of this case at NEJM.org). Laboratory tests (Table 1) were unremarkable except for lymphopenia, which has been reported to occur in patients with Covid-19.[1] A nonstress test confirmed a reactive fetal heart rate, and ultrasonographic evaluation revealed a normal singleton pregnancy. Nasopharyngeal and oropharyngeal swabs were obtained to test for influenza, Covid-19, and other respiratory viral infections; all tests except Covid-19 were negative within 6 hours. The patient was admitted to a private regular hospital room.

Supportive care was implemented because the patient's history and findings on chest radiography were consistent with Covid-19. On hospital day 2, painful, irregular contractions began and labor was augmented with oxytocin. During her labor course, tests for Covid-19 were determined to be positive 21 hours after samples were obtained. Other than a transient temperature increase to 38.5°C just before delivery, which resolved without treatment, she had an uncomplicated spontaneous vaginal delivery on hospital day 3, with Apgar scores of 8 and 9. Delayed cord clamping was not performed, and skin-to-skin contact between the mother and infant was not permitted. There was no evidence of neonatal or intraamniotic infection. After delivery, the neonate was placed in a radiant warmer bed away from the mother and was moved to a separate room once the condition was stabilized, to remain there until discharge. The neonate was nourished with formula and expressed breast milk.

During the postpartum period, contact between the staff and the patient was minimized and at times involved the use of a telephone. She felt well and was discharged home with the neonate on hospital day 6. Telephone follow-up after delivery indicated there were no signs of neonatal infection. Her husband had also tested positive for Covid-19.

This case describes uncomplicated labor and vaginal delivery in a woman with Covid-19. Care was taken to avoid infecting hospital staff, and

Table 1. Clinical Laboratory Results.*

Variable	Reference Range	Hospital Day 1 (Day 4 after Onset of Symptoms)	Hospital Day 2 (Day 5 after Onset of Symptoms)	Hospital Day 3 (Day 6 after Onset of Symptoms)	Hospital Day 4 (Day 7 after Onset of Symptoms)
C-reactive protein (mg/liter)	<3.0			25.6†	
Troponin I (ng/ml)	0–0.4			<0.017	
D-dimer (ng/ml)	<400			1710†	
Sodium (mmol/liter)	136–145	137		139	
Potassium (mmol/liter)	3.5–5.1	4.1		3.8	
Chloride (mmol/liter)	98–107	104		110†	
Carbon dioxide (mmol/liter)	20–31	22		19‡	
Blood urea nitrogen (mg/dl)	9–23	5‡		6‡	
Creatinine (mg/dl)	0.7–1.3	0.6‡		0.7	
Glucose (mg/dl)	80–140	92		145†	
Calcium (mg/dl)	8.7–10.4	8.1‡		8.0‡	
Total protein (g/dl)	5.7–8.2	6.9		6.1	
Globulin (g/dl)	2.0–3.0	4.3†		3.9†	
Aspartate aminotransferase (U/liter)	10–40	21		24	
Alanine aminotransferase (U/liter)	10–49	25		23	
Anion gap (mmol/liter)	5–16	11		10	
Albumin (g/dl)	3.2–4.8	2.6‡		2.2‡	
Total bilirubin (mg/dl)	0.3–1.2	0.4		0.6	
Alkaline phosphatase (U/liter)	46–116	165†		164†	
Lactate dehydrogenase (U/liter)	120–246			242	
Lactic acid (mmol/liter)	0.4–2.0			1.9	
White-cell count (per mm^3)	3800–11,000	5900	5700	10,300	7700
Hemoglobin (g/dl)	13.2–17.0	10.3‡	10.2‡	10.9‡	11.3‡
Hematocrit (%)	39.0–50.0	31.9‡	32.5‡	34.0‡	35.7‡
Platelet count (per mm^3)	150,000–400,000	210,000	186,000	171,000	178,000
Absolute neutrophil count (per mm^3)	1900–7400	4500	4100	8800†	5200
Absolute lymphocyte count (per mm^3)	1100–3900	1000‡	1200	1100	2200
Erythrocyte sedimentation rate (mm/hr)	1–20			32†	

* To convert the values for blood urea nitrogen to millimoles per liter, multiply by 0.357. To convert the values for creatinine to micromoles per liter, multiply by 88.4. To convert the values for calcium to millimoles per liter, multiply by 0.250. To convert the values for bilirubin to micromoles per liter, multiply by 17.1.
† The value in the patient was above the normal range.
‡ The value in the patient was below the normal range.

7 days after the delivery, no caregivers appeared to be infected. Further information on patient follow-up, procedures, and references is provided in the Supplementary Appendix.

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Disclosure forms provided by the authors are available with the full text of this case at NEJM.org.

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1. Lei D, Wang C, Li C, et al. Clinical characteristics of pregnancy with the 2019 novel coronavirus disease (COVID-19) infection. Chin J Perinat Med 2020;23(3).

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