CASE REPORT

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Management of eutocic delivery in a patient with COVID-19 in Lima, Peru

Atención de parto eutócico en gestante con COVID-19 en Lima - Perú

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Abstract

We present the case of a eutocic, uncomplicated delivery in a patient positive for COVID-19. The patient, a 33-year-old woman, 39 weeks pregnant, who had received prenatal care in a private clinic, presented in labor, coughing, without any other symptoms. She was diagnosed with COVID-19 by rapid test, IgM (+) and IgG (-). We isolated the patient and provided personal protective equipment following our clinic's protocol. Delivery was managed according to obstetric conditions, applying epidural anesthesia in the active phase; the baby was born without complications. Nor skin-to-skin contact nor delayed umbilical cord clamping were performed. Mother and child were discharged without complications after the newborn completed the required isolation period, testing negative for COVID-19. Telephone follow-up was performed. The healthcare team followed the recommended protocol to manage delivery during the COVID-19 pandemic.

Key words. Coronavirus infections, COVID-19, SARS-CoV-2, Obstetric Delivery, Birth settings, Delivery rooms.

Resumen

Se presenta un caso de atención de parto eutócico sin complicaciones en una paciente COVID-19 positivo. La mujer de 33 años, tercigesta de 39 semanas, controlada en una clínica privada, acudió en trabajo de parto presentando tos no asociada a otra sintomatología. Fue diagnosticada con COVID-19 por prueba rápida IgM (+) IgG (-). Se realizó el aislamiento y se proveyó de equipo de protección personal según protocolo de la clínica. El trabajo de parto fue manejado según condiciones obstétricas, con analgesia epidural en fase activa, y teniendo como resultado un recién nacido sin complicaciones. No se realizó contacto piel a piel ni clampaje tardío. Ambos fueron dados de alta sin complicaciones previo período de aislamiento del recién nacido con estudios negativos para COVID-19. Se les realizó seguimiento telefónico en casa. En el caso presentado, se cumplió con el protocolo recomendado para la atención del parto durante la pandemia de COVID-19.

Palabras clave. Infecciones por coronavirus, COVID-19, SARS-CoV-2, Parto normal, Entorno del parto, Salas de parto.

Introduction

In December 2019, in Wuhan, China, a virus of the Coronaviridae family that had not been described in humans yet was identified as the cause of a new form of severe acute respiratory syndrome, and named SARS-CoV-2. The disease it causes would afterwards be known as COVID-19[(1)].

As of 4 May 2020, there have been 43 372 confirmed cases of COVID-19 in Peru[(2)]. In this context, there is a large number of pregnant women who will get infected with SARS-CoV-2, regardless of the severity of symptoms they will develop. Because of this, while the pathogen's behavior remains under study, it is important to show the current experience in managing delivery in infected women.

This case report describes the labor, delivery and puerperium in a patient positive for COVID-19 without complications; the outcomes of mother and newborn were favorable, as well as those of the healthcare team, who followed adequate protective measures.

Case report

On 13 April, at 10.00 hours, a 33-year-old woman, gravida 4, para 2, abortus 1, was admitted to the emergency room. Her prenatal controls had taken place in our clinic, without any complications.

The patient reported a history of 4 weeks of dry cough, without fever nor any other symptoms.

In the Labor-delivery-recovery room (LDR), the patient and her husband were both protected with a surgical mask. She was tested for COVID-19 with the rapid blood test (Cellex SARS-CoV-2 IgG/IgM Rapid Test) and the molecular test (RT-PCR SARS-CoV-2), which used a nasopharyngeal swab sample.

At 13.00 hours, the result of the rapid test was obtained: IgM (+), IgG (-). Patient and partner were informed that, following the established protocol, the presence of an accompanying person was not allowed in this case. The patient, wearing an N95 mask, was transferred to an LDR room especially prepared for isolating patients with COVID-19 (figure 1), and health workers were provided with class 3 personal protective equipment (PPE) (figure 2).

Patient's vital signs on admission were: 90 heartbeats per minute, blood pressure 100/52 mmHg, respiratory rate 20 rpm, temperature 36.5°C, oxygen saturation 99%. We performed all the recommended laboratory tests, which showed no significant alterations (table 1). Maternal functions were stable. Fetal monitoring was continuous and stayed in category I, with a baseline of 145 beats per minute, moderate variability, no decelerations, and uterine contractions every 3 minutes.

The attending anesthesiologist applied epidural analgesia in the LDR room upon patient's request, when her cervix had dilated to 6 cm, following the precautions regarding the use of PPE.

Vaginal delivery occurred at 18.30 hours without any major complications; the female newborn weighted 3 020 g, with a length of 49 cm and an Apgar score of 9 at one and five minutes. The medical team did not perform episiotomy, delayed clamping nor skin-to-skin contact.

The baby was transferred to the room for healthy newborns. Samples were obtained for both types of COVID-19 tests and formula feeding and isolation from the mother were indicated.

In the postpartum, the mother had no symptoms and her obstetric outcome was satisfactory. She was discharged after 24 hours, with the following indications from an evaluation by the specialist in infectious diseases: no antiviral therapy, paracetamol 1g PO for sore throat, N-acetylcysteine 600 mg PO every 8 hours, contact tracing among her family, home isolation and education about alarm symptoms. Daily telephone follow-up confirmed an improvement of respiratory symptoms, without any other events.

One day after discharge, the molecular test was informed as negative.

The patient's husband stayed at home following safety precautions. His results for the rapid and molecular tests after 48 hours were negative.

Figure 1. Labor-delivery-recovery room especially prepared for isolating patients with COVID-19.

Figure 2. Class 3 personal protective equipment (PPE).

One week after delivery, the tests were repeated, with these results: IgM (+), IgG (-), molecular test negative. CT scan of the chest was informed as normal.

Similarly, rapid and molecular tests were applied to the husband for a second time and to their relatives, yielding negative results.

At day 8 after birth, the newborn was discharged, with negative results for both rapid and molecular tests. The indications were feeding expressed milk and following preventive measures until 14 days of isolation were completed.

Three weeks after delivery, mother and newborn have progressed favorably. Furthermore, the health workers who attended the delivery remained asymptomatic.

Discussion

This case report presents the management of vaginal delivery in a patient positive for COVID-19, diagnosed by rapid test and attended in a dedicated LDR room, with adequate PPE[3,4].

The patient was admitted in labor and screened for COVID-19 with the rapid test; due to her symp-

Table 1. Laboratory test results.

Variable	Reference range	Results, 13 April 2020	
C-reactive protein (mg/dL)	0 to 0.5	0.43	
D-dimer (ug/mL)	0 to 0.5	3.33	*
Ferritin (ng/mL)	13 to 150	10.5	**
High-sensitive cardiac troponin T (ng/mL)	0 to 0.05	0.003	
Sodium (mmol/L)	135 to 145	139.8	
Potassium (mmol/L)	3.5 to 4.5	4.24	
Chloride (mmol/L)	98 to 109	105.8	
Basal glucose (mg/dL)	70 to 110	74	
Urea (mg/dL)	17 to 49	21	
Creatinine (mg/dL)	0.5 to 0.9	0.66	
Ionized calcium (mmol/L)	1.12 to 1.32	1.06	
Total proteins (g/dL)	6.4 to 8.3	6	**
Globulin (g/dL)	2.3 to 3.5	2.6	
Albumin (g/dL)	3.5 to 5.2	3.4	**
Pyruvic oxaloacetic transaminase - SGPT/ ALT (U/L)	0 to 33	11	
Glutamic oxaloacetic transaminase - GOT/ AST (U/L)	0 to 32	16	
Total bilirubin (mg/dL)	0 to 11	0.34	
Direct bilirubin (mg/dL)	0 to 0.3	0.13	
Indirect bilirubin (mg/dL)	0 to 0.7	0.21	
Alkaline phosphatase (U/L)	35 to 104	132	*
Lactate dehydrogenase - LDH (U/L)	135 to 214	154	
Magnesium (mg/dL)	1.6 to 2.6	1.9	
Lactate (mmol/L)	0.5 to 2.2	1.6	
pH	7.35 to 7.45	7.4	
pCO2 (mmHg)	35 to 45	35.1	
pO2 (mmHg)	80 to 97	95.7	
Bicarbonate - HCO3 (mmol/L)	22 to 26	21.2	**
Base excess - BE (mmol/L)	0 to 1	3.6	*
CO2 levels - total CO2 (mmol/L)	26 to 28	19	**
Oxygen saturation O2 sats (%)	95 to 100	97.3	
Hemoglobin (g/dL)	12 to 16	12.9	
Hematocrit (%)	36 to 46	38.3	
Leukocytes (cells/uL)	4 500 to 11 000	8 200	
Platelet count (cells/uL)	150 000 to 475 000	219 000	
Segmented neutrophils (cells/uL)	1 400 to 6 600	5 641	
Lymphocytes (cells/uL)	1 300 to 3 500	1 927	
Monocytes (cells/uL)	0 to 600	533	

** Patient's results were above the normal range*
*** Patient's results were below the normal range*

toms, this was complemented with molecular testing. Given the large number of asymptomatic carriers, universal screening in newly admitted patients must be considered when the necessary implements are available[5,6]. This is why all patients attended for vaginal delivery or C-section undergo universal screening with both types of tests in our clinic. Obtaining both tests helps in the diagnosis of patients whose RT-PCR (reverse transcription polymerase chain reaction) molecular test appears negative due to an undetectable viral load, which occurs approximately 2 weeks after symptom onset. On the other hand, IgM and IgG antibodies peak at week 2 or 3 after symptom onset, and decline between weeks 5 and 7[7].

The patient was attended in an isolated LDR room prepared for cases with COVID-19, by health workers exclusively designated to provide delivery care, geared with adequate PPE, as recommended by current guidelines[6].

The LDR room assigned for COVID-19 patients has the same area and equipment as the other five LDR rooms in the institution, which provides the necessary space for the adequate management of labor according to obstetric conditions, such as walking, exercise, feeding, wireless electronic fetal monitoring, bath, hot shower, family accompaniment, labor analgesia, and delivery, immediate puerperium and newborn care.

Management of the first stage of labor should not be altered, except for cases of maternal instability. It is not contraindicated to use oxytocin or amniorrhexis to accelerate labor and decrease time of exposition[6].

Epidural analgesia was applied as usual, not only for need, but also because it is recommended to provide it early if an emergency C-section was required. This type of surgery could use general anesthesia, which implies a risk for the health staff attending patients with COVID-19[6,8].

Despite the isolation, the husband accompanied the patient virtually throughout the entire delivery, a situation that is currently considered in guidelines for managing this scenario[6].

It was decided to conduct a vaginal delivery because infection by COVID-19 *per se* is not an indication for C-section. Mode of delivery has to be determined by obstetric indications[6,9-11].

Neither skin-to-skin contact nor delayed umbilical cord clamping were performed. Given the unresolved concerns about vertical transmission, these practices are not recommended in patients under suspicion or positive for COVID-19[6].

Patient and newborn were isolated until discharge. Their contacts (husband and children) underwent rapid and molecular tests that resulted negative before newborn discharge. Contact tracing is recommended in all patients positive for COVID-19[12].

Telephone follow-up was used to assess respiratory symptoms and for postpartum monitoring[12,13].

Delivery care for COVID-19 positive patients, according to current recommendations, requires access to universal screening, an isolated and appropriately prepared LDR and the correct use of PPE.

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