

The cases of chronic abruption oligohydramnios sequence in our hospital

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Abstract

Objectives: Chronic abruption oligohydramnios sequence (CAOS) has a poor prognosis and is a high risk of preterm delivery. However, the pathogenesis and management of CAOS has been still unknown. In this study, we report clinical outcomes of CAOS in our hospital.

Design: Retrospective study

Method: The subjects were four cases developed CAOS who underwent perinatal care between May 2017 and May 2022 in our hospital. CAOS was defined by the following criteria: (1) clinically significant vaginal bleeding in the absence of placenta previa or other identifiable source of bleeding, (2) amniotic fluid volume initially documented as normal, and (3) oligohydramnios (amniotic fluid index < or = 5) eventually developing without concurrent evidence of ruptured membranes. We corrected clinical data from medical records respectively.

Results: The median gestational weeks appeared the first symptoms (abnormal hemorrhage in 3 cases and olygohydramnios in 1 case) was 22 weeks (range: 10-22 weeks), and the median gestational weeks diagnosed CAOS was 24 weeks (range: 21-25 weeks). Of four patients, subchorionic hematoma was detected in two patients and fetal growth restriction (fetal estimated weight< -1.5 SD) in another two patients. The median gestational weeks at delivery was 25.5 weeks (range: 24-26 weeks), and all patients received the emergency cesarean section (CS). The indications of CS were non reassuring fetal status, placental abruption, prolapse of umbilical cord, and onset of labor at breech presentation, respectively. The median maximum body temperature before delivery was 37.7°C(range: 37.2-38.0°C), and the median maternal serum CRP was 1.21 mg/dL (range: 0.55-3.02). Bacterial culture with vaginal secretion showed *Gardnerella vaginalis* in two cases. Placental pathology revealed chorioamnionitis (CAM) (Blanc classification II-III) in three patients. All the mothers had live births.

Conclusions: Since the duration from diagnosis to delivery was within 7 days in our cases, delivery should be prepared when CAOS was diagnosed. Therefore, CAOS should be considered as a high-risk group for adverse pregnancy outcomes. Furthermore, since CAM was detected in three cases of four CAOS cases, CAOS might be developed by any bacterial infection.

Objectives

- ◆ Chronic abruption oligohydramnios sequence (CAOS) has a poor prognosis and is a high risk of preterm delivery.
- ◆ However, the pathogenesis and management of CAOS has been still unknown.
- ◆ In this study, we report clinical outcomes of CAOS in our hospital.

Study Design

Study period May 1, 2017 ~ May 31, 2022

Subjects 4 patients with CAOS at Keio University Hospital

Study Retrospective study

The diagnosis of CAOS

- (1) clinically significant vaginal bleeding in the absence of placenta previa or other identifiable source of bleeding
- (2) amniotic fluid volume initially documented as normal
- (3) oligohydramnios (amniotic fluid index < or = 5) eventually developing without concurrent evidence of ruptured membranes

Result

Table 1. Maternal factors, Delivery outcomes

Case No.	Maternal age	Gravidity Parity	Gestational age at initial symptoms	Initial symptoms	SCH	CAOS Gestational age at diagnosis	Gestational age at delivery	Duration from diagnosis to delivery (days)	Delivery mode	adaptations
1	33	G2P1	22w2d	Genital bleeding	—	23w4d	24w1d	4	CS	Umbilical cord prolapse
2	35	G4P1	10w3d	Genital bleeding	●	25w3d	26w6d	10	CS	Placental abruption
3	34	G1P0	unknown	Oligo-hydramnios	●	21w1d	25w6d	32	CS	NRFS
4	39	G1P0	22w3d	Genital bleeding	—	25w6d	26w3d	4	CS	Breech presentation Labor onset

SCH: subchorionic hematoma, CS: cesarean section, NRFS: non reassuring fetal status.

Median:7days

Table 2. Pre-partum examination

Case No.	Body temperature (°C)	WBC (/μl)	CRP (mg/dL)	Vaginal bacterial culture	Clinical CAM
1	37.9	15,900	3.02	<i>Bifidobacterium breve</i>	—
2	38.0	11,300	0.55	<i>Gardnerella vaginalis</i>	●
3	37.2	16,100	0.60	<i>Gardnerella vaginalis</i> <i>Candida albicans</i>	—
4	37.4	15,550	1.81	<i>Escherichia coli</i>	—
Median	37.7	15,725	1.21		

CAM: chorioamionitis.

Table 3. Neonatal factors

Case No.	Birth weight (g)	Aps 1min.	Aps 5min.	Placental pathology (Blanc)	Duration of admission to NICU (days)	Duration of oxygen therapy (days)	Post-natal CRP (mg/dL)	Complication
1	549	1	2	III	93	154	0.09	CLD, ROP, IVH
2	834	2	8	II	63	51	0.01	CLD, LIP
3	508	6	7	—	89	94	0.04	CLD
4	954	5	8	II	93	110	0.01	CLD, PFO

CLD: chronic lung disease, ROP: retinopathy of prematurity, IVH: Intraventricular hemorrhage, LIP: local intestinal perforation, PFO: patent foramen ovale.

Discussion

Table 4. Previous reports of CAOS

	n	Initial bleeding (weeks)	Gestational age at diagnosis (weeks)	Gestational age at delivery (weeks)	Number of cases			
					SCH	FGR	CAM	CLD
Elliot(1998)	24	19.4±5.5	-	28.1±4.5	18	2	10	-
Koshiishi(2008)	3	10~18	19~25	20~26	3	1	2	1
Suzuki(2010)	4	11~15	23~25	23~25	1	1	4	2
Kobayashi(2014)	15	6~19	-	22~31	10	6	15	11
Nomura(2021)	17	-	18~25	23~28	-	1	13	17
Nakano(2020)	6	9~23	-	24~29	4	3	4	4
Okuno(2015)	8	18~26	-	23~26	-	-	5	8

In our hospital	4	10~22	21~25	24~26	2	2	3	4
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SCH: subchorionic hematoma, FGR: fetal growth restriction, CAM: chorioamnionitis, CLD: chronic lung disease.

- ◆ Genital bleeding was often observed in the first trimester.
- ◆ SCH was present in 68% (38/56) and CAM in 69% (56/81), CLD in 82% (47/57) .

Conclusion

- Since the duration from diagnosis to delivery was within 7 days in our cases, delivery should be prepared when CAOS was diagnosed.
- Therefore, CAOS should be considered as a high-risk group for adverse pregnancy outcomes.
- Furthermore, since CAM was detected in three cases of four CAOS cases, CAOS might be developed by any bacterial infection.

References

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