Newborn Sheds Light on his Mother's Fevers: a case of vertical transmission of HSV2.

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INTRODUCTION

The classical differential diagnosis of fever in the postpartum period as illustrated by the most popular go to reference "up to date":

- Urinary tract infection
- Wound infection (episiotomy or other surgical site infection)
- Mastitis or breast abscess
- Endometritis or deep surgical infection
- Septic pelvic thrombophlebitis
- Drug reaction
- Clostridium difficile-associated diarrhea
- Complications related to anesthesia

CASE DESCRIPTION

- A 21 year old female presented at 39 weeks with early contraction, pain, and increase urinary frequency. She noted vaginal leakage and brownish discharge. She denied fevers, used marijuana and stated she had one sexual partner. Her labs: GBS positive (adequately treated intrapartum), HIV, HBsAg, anti-HCV, urine GC/chlamydia and RPR negative; rubella and varicella immune. On physical exam her vulva, vagina, cervix were unremarkable. She had vaginal delivery of a healthy boy the next day.
- Mother developed fever (100.4F) 3.5 hours prior to delivery and fever (101.1) in the postpartum room. She was started on ampicillin and gentamicin for possible chorioamnionitis.
- Post partum day #2, she had fever 101.1°F. The patient's only complaint was of back pain at the site of the epidural, otherwise well. Blood and urine cultures were negative. Pathology of the placenta showed fetal membranes with mild acute chorioamnionitis.
- Post partum days #2-5: fevers persisted. Antibiotics changed to piperacillin-tazobactam. Chest X-ray with questionable pneumonia vs atelectasis, abdominal/pelvic CT was negative. She stated that baby's father had a febrile illness with diarrhea ~ 2 weeks ago; she denied similar symptoms.

CASE DESCRIPTION Continued

- Post partum Day #5, her newborn baby developed fever 101.5F, blood and urine cultures were sent. He was started on Ampicillin and Gentamicin. Mother continued to have fevers on 3rd day of Piperacillin-tazobactam .
- Postpartum day #6-7: baby febrile; his blood and CSF were sent for HSV PCR, and acyclovir was added. Mother stated she has "a boil" in the vaginal area that is hurting her, denies having it prior to delivery; her HSV-1/2 serologies and blood for HSV-PCR were sent
- **Postpartum day #8: baby's blood PCR positive for HSV-2.** Mother was started on acyclovir.
- Postpartum day #9: Mother became afebrile and discharged home. Mother's blood HSV PCR was positive for HSV-2, her HSV-1/2 IgG were negative.
- Postpartum day #11: baby's CSF PCR positive for HSV-2. Baby completed 21 days of IV Acyclovir for disseminated HSV-2 infection.
- Follow up, postpartum day #13, mother had HSV- 1/2 serology repeated, which was now positive for HSV-2 IgG. HIV Ag/Ab and Viral Load negative.

DISCUSSION

- ❑ Primary HSV2 refers to newly acquired HSV2 in a person with no prior antibody to HSV2; Non-primary infection refers to a person with antibodies to HSV1 but not to HSV2 who newly acquires HSV2; Reactivation of HSV2 occurs in an individual who already has antibodies to HSV2 . The risk of transmission to the newborn decreases from 57% in primary infection to 25% in non-primary infection to 2% in recurrent infection.
- ❑ Our mother had primary HSV-2 infection at the time of delivery: she had viremia, plus a negative HSV-2 IgG which turned positive 1 week later.
- ❑ 75% of patients who acquire HSV infection are asymptomatic. The rest can have a nonspecific febrile illness, with or without lesions.

DISCUSSION Continued

- ❑ Typical genital lesions can occur 2 to 12 days after exposure. Viral shedding, with or without lesions, is high in the prodromal and early stages of infection, making it highly possible to transmit the virus to the newborn while latter is passing in the birth canal during vaginal delivery.
- ❑ This mother was also HSV-1 seronegative. Women with prior antibodies to HSV-1 have less risk of acquiring HSV-2 during pregnancy (2%) compared to women who are seronegative for both HSV-1 and HSV-2 (4%).
- ❑ As the incidence of genital HSV-1 is increasing while that of HSV-2 is stable, a higher proportion of neonatal herpes disease is now caused by HSV-1.
- ❑ Neonatal herpes is acquired mainly peripartum (85%), it can rarely be acquired in utero (5%) or post partum (10%).
- ❑ Primary herpes infection during pregnancy is associated with increased rates of stillbirth, abortions and premature birth.
- ❑ Perinatally acquired neonatal herpes disease can be devastating, with high neurological morbidity and mortality if not diagnosed and treated early.
- ❑ Current strategies for preventing HSV transmission are controversial. C-sections are recommended in women who have active lesions or have prodromal symptoms. The use of suppressive antiviral medication in pregnant women with recurrent genital herpes starting at 36 weeks of gestation can be implemented as well.
- ❑ No strategies have been proven to be effective in the prevention of HSV acquisition during pregnancy.
- ❖ When looking for a cause of postpartum fever, it is important to inquire about the health of the newborn.

References

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MOTHER-BABY TIME LINE

Fever-Mother	101	Afebrile	Afebrile	101.1	101.7	101	100.9	101	102.6	101 HSV: Ab neg PCR + Started on acyclovir	Afebrile D/C			HSV2 Ab +	
Post partum Day	(triage)	0	1	2	3	4	5	6	7	8	9	10	11	12	13
Fever-Newborn		Born					101.5	101.4 Started on acyclovir	102.4	101.4 Blood HSV2+	Afebrile	CSF HSV2+ →