

Maternal and Perinatal outcome in Mumps complicating pregnancy

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Citation

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Abstract

Background: Mumps during pregnancy is associated with high morbidity and mortality especially during the perinatal period.

Case:

A 30 year old primigravida at term with premature rupture of membranes was referred to us as a case of acute renal failure with sepsis and PROM. On detailed history and examination, she was clinically diagnosed as mumps. Obstetric examination revealed a term live fetus in cephalic presentation with oligohydramnios with thick meconium stained liquor. She was delivered by emergency LSCS because of fetal distress and the neonate expired in the neonatal period. Her blood urea was 120 mg% and serum creatinine was 4.2 mg% prior to LSCS. She was treated with diuretics and corticosteroids in the perioperative and immediate postoperative period with which she recovered.

Conclusion

: Mumps during the perinatal period results in adverse fetal and maternal outcome and vigilant management is necessary to save both lives.

INTRODUCTION

Mumps is one of the most contagious acute viral diseases and is usually prevented primarily by vaccination of children, adolescents and women of reproductive age group using live attenuated virus. The incidence of mumps infection during pregnancy is reported to be between 0.8 and 10 cases per 10,000 pregnancies¹. Mumps infection during pregnancy was reported to result in increased incidence of first trimester abortions². The literature regarding the outcome of mumps acquired during the perinatal period is scant. However the latest review article by Ornoy and Tenenbaum revealed late fetal deaths and neonatal mumps³. The outcome of a rare case of mumps referred to us as a case of acute renal failure with premature rupture of membranes at term is reported here.

CASE HISTORY

A 21 year old primigravida at 38 weeks of pregnancy was referred to us with a provisional diagnosis of premature rupture of membranes with sepsis with acute renal failure. She gave history of fever 5 days ago which lasted for 4 days and history of swelling of lower part of face and upper part of neck which appeared one day following fever to start on the right side initially. There was history of cough with

expectoration of 4 days duration and leaking per vaginum of 18 hrs duration. Her urine output decreased for the past 4 days. Her haemogram done one day prior to her arrival showed haemoglobin of 10 gm% with a total leucocyte count of 11,800/mm³ with 64% neutrophils. Blood sugar and Serum electrolytes were within normal limits. Blood urea nitrogen was 106mg% and serum creatinine was 3.2 mg%. Fetal evaluation reported as single live fetus without any congenital anomaly with biometry corresponding to 37 weeks with an Amniotic fluid index of 8 cm. The estimated fetal weight was 2800gms and placenta appeared Grade III and fundal and anterior in position. The Non-stress test was reactive on the same day. She received injection Hydrocortisone 100 mg intravenously at the time of referral at some other hospital.

On general examination she was afebrile tachypnoeic with a respiratory rate of 40/min. Pulse rate was 120 bpm regular, BP was 110/70mm Hg and thyroid was normal. There was a soft tender swelling of bilateral parotid glands extending in to the sub mental region. Respiratory system examination revealed coarse crepitations over the right infra scapular region. Obstetric examination showed term uterus which was irritable with a single fetus in cephalic presentation with a fetal heart rate of 132/ min. There was thick meconium

stained liquor leaking per vaginum and the cervix was soft , central , partially effaced and 2 cm dilated and the membranes were absent. The Pelvis was of gynaecoid type. Physician reference was obtained which confirmed the findings of bilateral parotitis and pneumonia. She was started on injection Ceftriaxone and Metronidazole and was given fluid challenge. The output was only 10ml over 4 hrs. NST at this time was non reactive. Blood urea nitrogen was 120 mg % and Creatinine was 4.2 mg %. Her ABG showed metabolic acidosis which was corrected and she was started on injection Furosemide 40 mg iv 8 thrly along with CVP monitoring. She was delivered by emergency LSCS under spinal anaesthesia after almost 12 hrs of admission because non-availability of theatre (arrangements) to take up a potentially contagious case. The neonate was deeply asphyxiated with an Apgar of 2/10 at 1 and 5 min which expired later due to meconium aspiration syndrome.

The patient's urine output improved soon after starting diuretics and was 100-150ml/ hour in the immediate post-operative period. The Physician opinion on dialysis was deferred and she was treated with diuretics and tablet prednisolone 0.5 mg /kg body weight for 2 weeks. Her renal profile is shown in table .

Figure 1

Table 1. Renal Parameters

Date	Blood Urea Nitrogen mmol/L	Serum Creatinine mg/dl	Urine out put/day
Day before admission 15/2/10	106	3.2	<200 ml
Day1	120	4.2	3,600 ml
Day 2	173	3.36	2,400 ml
Day 3	164	3.1	2,600ml
Day 5	138	1.2	2,300ml
Day 7	59	1.0	2,600ml
Day 9	38	0.5	2,350ml
Day15	35	0.5	2,400ml

USG performed on 4th post-operative day showed mild increase in renal cortical echoes suggesting bilateral parenchymal disease most probably due to post-Mumps nephritis. All other abdominal organ including Pancreas appeared normal. She was discharged on 14 th postnatal day with the advice to continue diuretics for another 2 weeks.

DISCUSSION

Serious complications of mumps are more common among adults than in children⁴. The illness typically presents with fever, myalgia, and swelling and tenderness of one or more of the salivary glands, usually the parotid gland. The present case had fever and swelling of the right sided parotid gland initially. About one fifth to one-third of infected people do not have symptoms^{1,4}. In women mumps may cause aseptic meningitis, mastitis, thyroiditis, glomerulonephritis, myocarditis, pancreatitis, and arthritis⁴. The present case had nephritis leading to acute renal failure. Mumps nephritis can be fatal as reported in case of a 14 yr old girl in which renal insufficiency developed within one week of parotitis and the postmortem renal biopsy revealed interstitial nephritis⁵. Acute nephritis is usually complicated by oliguric renal failure and reversible with timely treatment employing corticosteroids. This patient received injection hydrocortisone at the time of referral from outside and had diuresis following administration of diuretics. Subsequently we administered tablet Prednisolone. Mumps nephritis can be due to glomerulonephritis because of development of immune complexes and it may also be because of interstitial nephritis⁵.

A case of congenital mumps infection resulting in persistent pulmonary hypertension and pulmonary haemorrhage in the new born was reported by Takahashi and colleagues. They could demonstrate the Ig M antibody against mumps and mumps RNA in the umbilical cord blood of the neonate. The mother contracted the disease 4 weeks and 5 days prior to delivery and the neonate survived with prompt treatment⁶. Yet another case of congenital mumps was reported in which the mother had bilateral parotitis on the day of delivery. The neonate suffered from fever splenomegaly and thrombocytopenia⁷. In the present case the neonate expired soon after delivery and no investigations were carried out to diagnose neonatal mumps.

Prevention is of utmost important in infectious diseases. Mumps vaccine is theoretically contraindicated during pregnancy though if vaccine is administered there is no indication to terminate pregnancy⁸. A mortality of 3 per 10,000 cases is reported in recent years and therefore it is a preventable issue.

CONCLUSION

This case illustrates us contracting mumps during the perinatal period can result in adverse maternal and perinatal outcome. Prompt management of acute renal failure during the peripartum period can save the life of the patient and

corticosteroids and diuretics may help in this aspect.

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