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Case Report

A case report of adult onset nephrotic syndrome in pregnancy

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ABSTRACT

Proteinuria in pregnancy is one of the most common issues encountered on a routine basis, mostly thought due to preeclampsia. However, there are plethora of reasons for proteinuria other causes of the same should also be thought while diagnosing and managing proteinuria. One of the causes of massive proteinuria is nephrotic syndrome. Nephrotic syndrome is a clinical syndrome defined massive proteinuria responsible for hypoalbuminemia resulting in hyperlipidemia edema and various complications. It is caused by increased permeability through damaged basement membranes in renal glomeruli. Nephrotic range of proteinuria defined as urinary loss of 3 gm or more protein/ 24 hours or presence of 2 gm of protein per gram of creatinine in spot urinary samples. Here is a case report of nephrotic syndrome in pregnancy managed by a multidisciplinary approach with successful outcome.

Keywords: Proteinuria, Pregnancy, Nephrotic syndrome

INTRODUCTION

Nephrotic syndrome is relatively uncommon during pregnancy without histological diagnosis secondary to primary glomerular disease is uncertain and difficult to differentiate from preeclampsia.[1] Nephrotic syndrome is collection of clinical symptoms consisting of anasarca, severe proteinuria, hypoalbuminemia, hypertension and often accompanied by hyperlipidemia.

Nephrotic syndrome in pregnancy is most precipitated by preeclampsia type 2 diabetes mellitus and systemic lupus erythematosus.[2] The incidence of nephrotic syndrome in pregnancy is around 0.012-0.025% of all pregnant woman's.[3] Nephrotic syndrome is a kidney disorder that leads to excessive protein loss in urine.[4]

CASE REPORT

A gravida 2 para 1 with one previous caesarean section was referred to our hospital at 28 weeks of gestation with anasarca. Her antenatal follow up at a local hospital was uneventful till 24 weeks of gestation. At 26 weeks she had complaints of swelling over leg and face which gradually progressed to anasarca through the 8th month of gestation for which she was referred to our hospital. At admission, the patient had mild pallor and generalised oedema. Her blood pressure was 120/70 mm of mercury. Per abdomen examination revealed engorged veins, oedematous abdominal wall, moderate ascites and 32 weeks size uterus. Obstetric ultrasound showed a single intrauterine pregnancy with normal doppler study. Further work up showed severe hypoproteinemia with total serum albumin 1.1 gm/dl and for that 3-albumin given still serum albumin 1.6 gm/dl. patient under continuous monitoring. physician reference done after that 24-hour urine protein sent and protein value came 13881 mg/dl, dipstick urine protein +4 and urine protein to creatinine ratio, 30:1 serial monitoring of mother and foetus was done with periodic renal function tests, coagulation profile, daily non-stress test and twice weekly foetal Doppler. At 35 weeks the patient complained of breathlessness and headache with her BP 150/100 mmHg. The caesarean section was done and she

delivered a female baby of 2.2 kg birth weight with meconium-stained liquor for that baby in NICU. Intraperitoneal drain was kept in view of ascites. On the 1st postoperative day there was minimal urine output and drain collection was 1.5 litres. Patient was shifted to ICU for further monitoring and management.

Ascites fluid routine was sent sugar 78 gm/dl protein gm/dl LDH-36U/L ADA-23.3U/L, volume 2 ML-cells 80/MM3 20 cells counted 13 neutrophil 7 lymphocyte, C3 levels-0.466 and C4 levels-0.06

Forced diuresis with furosemide 40 mg twice a day and albumin infusion was started on alternate days. Despite diuresis and albumin infusion her serum albumin was not increasing.

Physician reference was advised pulse dose methylprednisolone 1 gm × 3 days then prednisolone 60 mg od ×20 days than 30 mg ×10 days than 10 mg×10 days than 5 mg×10 days. Repat 24-hour urine protein was sent-4 gm/dl.

Patient gradually improved and intraperitoneal drain was removed on the 9th postoperative day. Renal biopsy was deferred in view of unaffordability of the patient. She was discharged on 12th postoperative day. Sutures removed on 14th postoperative day. At discharge her serum albumin improved to 3 gm/dl and proteinuria gradually decreased. Patient is in regular follow up with the treating physician.

DISCUSSION

Nephrotic syndrome is usually caused by damage to a cluster of small vessels in the kidney that filter waste and excess water from your blood. This condition causes swelling particularly in feet, ankle, abdomen and periorbital edema. Nephrotic range proteinuria during pregnancy needs proper evaluation and clinical distinction very important for management.[5]

As per Kaul et al cohort of 44 patients had been studied evidence of nephrotic syndrome was in a lower proportion in less than 20 weeks of gestation, in comparison to more than 20 weeks of gestation.[5]

Table 1: Enumeration of maternal and fetal complications of nephrotic syndrome.

Maternal complication	Fetal complication
Acute kidney injury	Preterm labour
Arterial and venous thrombosis	Low birth weight
Worsening anasarca	Intrauterine growth retardation
Worsening hypertension	Nicu admission
Hyperlipidemia	Physiological jaundice
Postpartum hemorrhage	Abortion
	Still birth

*Data used from Kaul et al and Li et al.[5,8]

In our case preterm delivery and ICU admission was required.

Causes for nephrotic range proteinuria during pregnancy are MPGN, IGA nephropathy, lupus nephritis, FSGS and infection related gn and many more.

Nephrotic syndrome in pregnancy has an impact on morbidity of mother as well as fetal outcomes however its incidence and prevalence are very low. About half of women with nephrotic syndrome have increased protein loss in urine despite high proteinuria glomerular filtration rate doesn't fall much and hence creatinine doesn't rise much in value. Liu et al had shown an association between level of proteinuria and unfavourable pregnancy outcomes in patients with IgA nephropathy.[6] Pregnancies with lupus nephritis having proteinuria >0.5 gm/day also have a poor prognosis.[7] Pregnant patients with nephrotic syndrome are more prone to develop pre-eclampsia, preterm birth, low birth weight babies and intrauterine fetal growth restriction this are the complication.[8] In our case preterm delivery and icu admission was required.

In our case the patient delivered preterm and the baby was in NICU due to meconium aspiration with respiratory distress and mother also had respiratory distress for which she required ICU admission and prolonged stay suggesting increased morbidity and increased length of stay in hospital. According to Li et al study nephrotic syndrome combined preeclampsia had adverse fetomaternal outcome.[8]

Treatment of nephrotic syndrome in pregnancy requires multidisciplinary approach and regular follow up and then only complication could be avoided.

CONCLUSION

Our outlook towards proteinuria needs to be in a broader vision. Proteinuria essentially doesn't mean pre-eclampsia; there is more to it than meets the eye. We need to change thinking towards proteinuria as pre-eclampsia. There are other causes of proteinuria. Early diagnosis and multidisciplinary approach will improve the outcome.

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