Pregnancy in porphyria and its complications: a case report

Tuhina K. Mital*, Rujuta P. Fuke

INTRODUCTION

The Porphyrias are a group of rare hereditary metabolic disorders, resulting from defective porphyrins, which are enzymes involved in heme synthesis. Depending on the specific enzymes, they can manifest as acute or chronic, with symptoms being predominantly cutaneous, neurologic, psychiatric or combination of these. One of the common subtype of porphyria is porphyria cutanea tarda (PCT) with a prevalence of approximately 1 in 10,000, caused by deficiency of uroporphyrinogen decarboxylase (UROD) which primarily presents with skin manifestations later in life. Other types include acute porphyrrias like acute intermittent porphoria, hereditary erythropoetic porphoria, variegate porphoria, have been implied to be risk factors for low birth weight, growth retardation, premature delivery, spontaneous abortion, and perinatal death.1,2,3,4

Our case report discusses about one such complication in pregnancy, perinatal death, in a patient with PCT, who delivered a preterm still birth.

CASE REPORT

A 30 year old female patient, known case of porphyria, presented in casualty with severe anemia who had delivered a still born baby the same day. Still births along with spontaneous abortions, preeclampsia and low birth weights are few of the known complications of pregnancy in patients with porphyria.

As with many rare diseases, little is known about the porphyrias and reproduction. Knowledge pertaining to complications in pregnancy in a patient with porphyria is even more scant. The information which we have is from attending on individual cases. The following case report demonstrates a rare case of porphyria cutanea tarda in a 30 year old female patient, diagnosed around pubertal age, who presented to the Emergency department as a case of severe anemia who had delivered a still born baby the same day. Still births along with spontaneous abortions, preeclampsia and low birth weights are few of the known complications of pregnancy in patients with porphyria.

Keywords: Porphyria cutanea tarda, Acute intermittent porphyria, Stillbirth, Preeclampsia, Pregnancy
delivery. Patient’s elder sister also suffered from porphyria but of less severe form, and she had two healthy children with uneventful pregnancies.

On examination, patient was conscious, oriented but irritable. Patient’s blood pressure was 120/80 mm of Hg and pulse 90 per minute. Pallor was present. Facial hair was present. Hyperpigmented skin patches were present all over the body including face, with scarring seen.

Respiratory system examination was normal. Cardiovascular examination revealed a pansystolic murmur of grade III in the tricuspid area. Abdomen was soft and uterus was well retracted with minimal per vaginum bleeding.

Patient was further evaluated and a dermatology opinion was taken, where the diagnosis of porphyria cutanea tarda was confirmed. Patient had diffuse thickened hypersegmented skin over extensor aspect of bilateral upper and lower limbs with scar with milia formation. The scalp, oral cavity, palms and soles had no abnormality. There was evidence of blister formation followed by scarring over sun exposed parts. Patient was advised strict sun protection with application of ultraviolet sunscreen. Various investigations were advised like urine and teeth porphyrin under woodlamp’s, serum porphyrin levels, ophthalmology opinion and hand X-ray. 2d echocardiography was done which was suggestive of congenital heart disease with 12 mm and 14 mm os atrial septal defect (primum to secondum) with moderate TR and moderate PAH with intact interventricular septum and normal pericardium. Intensive cardiology rehabilitation was advised.

Renal scan and renal Doppler were within normal limits while ultrasonography of Abdomen was suggestive of moderate splenomegaly. Laboratory studies included hemoglobin 5.2 gm% which increased upto 7.8 gm% after two packed red blood transfusions. WBC and platelet counts were within normal limits; total bilirubin was raised to 1.3 mg/dL; alkaline phosphatase, aspartate transaminase, alanine transaminase, serum urea, serum creatinine and serum electrolytes were within normal limits. Old reports showed raised serum porphyrin levels to 220 nmol/L (<15 nmol/L) and raised porphyrins in urine, mainly uroporphyrins at 360 nmol/L (<140 nmol/L).

Patient received two pint of whole blood transfusions to build up her hemoglobin and was started on multivitamin injections daily, tablet vitamin C 500 mg OD, tablet ferrous sulphate 200 mg BD, tablet calcium 500 mg TDS and was advised strict sun protection with local application of UV protection sunscreen. Patient was advised to follow up in dermatology OPD and cardiology OPD for further line of treatment and was counseled regarding the complications that would occur with subsequent pregnancies in future.

Figure 1: Hyperpigmented patches with milia and hypertrichiosis on face.

Figure 2: Scarring seen over abdomen.

Figure 3: Scleroderma like plaques seen over bilateral feet.
scleroderma like plaques that may develop dystrophic calcification and excretion of discoloured urine.

Diagnosis of porphyria is confirmed based on porphyrin studies with biochemical analysis of blood, urine and stool; urine estimation of porphobilinogen (PBG) in acute cases. During pregnancy in female patients, prenatal diagnosis can be done, by measuring porphyrins in amniotic fluid and amniotic cell culture.6,8 Cord blood can be tested to determine the inheritance. Treatment of porphyria is symptomatic and oriented to improving skin conditions and clinical manifestations. It is important to avoid precipitating factors like estrogen, valproic acid, barbiturates, sulfonamides and hydantoins. Other factors involved in acute crisis are alcohol, hypocaloric diets, and infections.5,7 Acute attacks of porphyria respond well to treatment with heme arginate, given in a dose of 2-3 mg/kg/day during four consecutive days administered in slow infusion. But effects on fetus are unknown hence this treatment is not recommended during pregnancy.6,7,9,10

Use of contraceptives is controversial, as its progesterone component is known to provoke acute attacks. The most recommended is barrier method of contraception, especially in our case as oestrogen base preparations can make active PCT symptoms worse.

CONCLUSION

To sum up, pregnancy in porphyria is a high risk pregnancy, and it is important to have frequent ANC checkups for maternal well being with regular ANC Doppler to monitor fetal growth, and if need be early induction to prevent complications like spontaneous abortions, preeclampsia and perinatal loss.

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