CASE REPORT :
FETAL WARFARIN SYNDROME

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BACKGROUND

Fetuses exposed to warfarin during pregnancy are at an increased risk of developing fetal warfarin syndrome or warfarin embryopathy. The most consistent anomalies are nasal hypoplasia and stippling of vertebrae or bony epiphyses. It is challenging to balance the risks of maternal morbidity and fetal outcomes in the management of pregnant patients with mechanical heart valves on anticoagulation. Given that warfarin embryopathy is dose dependent, current guidelines suggest the use of warfarin in pregnancy if the daily therapeutic dose is at most 5 mg.

CASE REPORT

We report a case of a 37 year old G3P1 with metallic heart valve secondary to rheumatic heart disease on Warfarin, a history of complete heart block requiring pacemaker insertion, a subsequent left ventricular function complicated by torsades de pointes, requiring AICD insertion. Her relevant obstetrics history include a previous Caesarean Section due to an unsuccessful induction of labour, and a previous miscarriage during which she had a pulmonary embolism and left lower limb arterial thrombosis despite being on LMWH, complicated by compartment syndrome requiring fasciotomy.

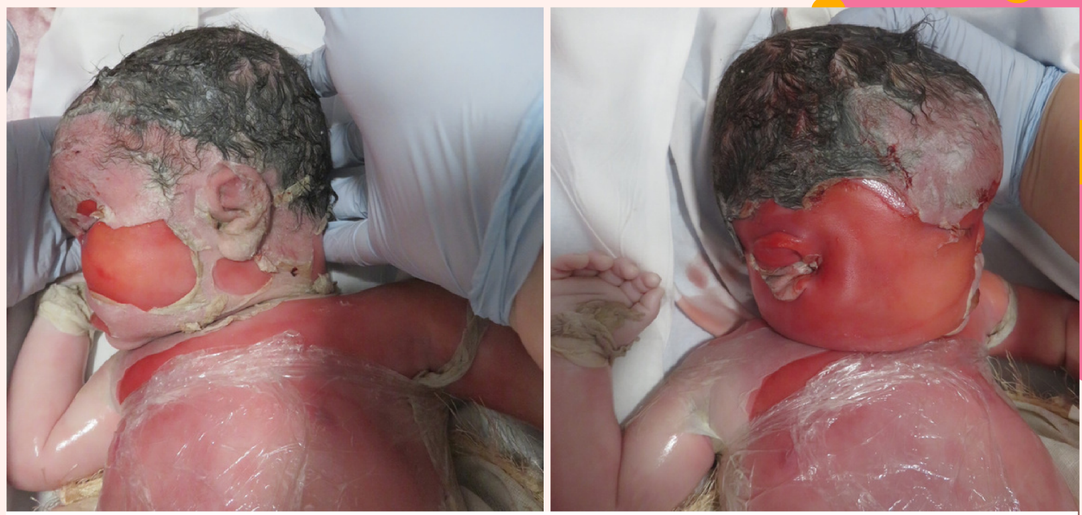
Due to her complex medical history, she was referred early to our Obstetric Medicine Clinic at 6 weeks gestation for thorough discussions on potential implications of warfarin on fetal development and bleeding risks, alternative management options and expected antenatal course. A shared decision was made to continue with the pregnancy and remain on warfarin due to maternal risks factors and history, with plans to transition to LMWH in case of increased dose requirements or to heparin in case of delivery. Her anticoagulation was transitioned to LMWH at 28 weeks with heparin bridging. However, due to subtherapeutic anti-Xa levels, her warfarin was recommenced at 29 weeks, requiring admission for dose titration and INR monitoring.

Her first trimester screen revealed no obvious fetal structural abnormalities and low risk of aneuploidy or pre-eclampsia. Her early morphology revealed no obvious abnormalities, however there was difficulty visualizing fetal face, profile, nose, lips and palate during her 19 weeks scan and 23 weeks scan. During her 31 week FMU ultrasound, severe nasal/midface hypoplasia was visualised. There were also polyhydramnious with AFI of 34, and suspected large for gestational age with both EFW and AC >97%, which was possibly attributed by her gestational diabetes. Amniocentesis was offered, to which the patient declined. Her care was transferred to another tertiary hospital with access to Paediatrics Ear Nose and Throat (ENT) support due to potential airway concerns in case newborn resuscitation is required on delivery. A thorough delivery plan was made following multidisciplinary team discussion including recommended timing of delivery and her anticoagulation plans.

Unfortunately, she was diagnosed with fetal death in utero (FDIU) at 35+6 gestation following reports of decreased fetal movements. As per patient's request, her care was transferred back to our hospital for the management and follow up of FDIU due to it being closer to home. Her 3609g stillborn was delivered via an uncomplicated Caesarean section with features of fetal warfarin syndrome, namely midface hypoplasia.

RESULTS

The fetal MRI revealed a hypoplastic nasal bone, short maxilla, intact palate, a 6mm supratentorial left subdural haematoma with minimal mass effect, haemoperitoneum and expected post mortem changes. The limbs were incompletely imaged, however normal long bones and muscle bulk were visualised. The placental histopathology revealed no diagnostic abnormality but did suggest probable placental insufficiency given increased fetal placental weight ratio and fetal macrosomia. Unfortunately, due to logistical error, the baby was cremated prior to post-mortem autopsy. The remainder of her FDIU investigations were unremarkable.



Photos showing side profile of her stillborn with midface hypoplasia

CONCLUSION

It is challenging to balance the risks of maternal morbidity and fetal outcomes such as FWS and bleeding risks in the management of pregnant patients with mechanical heart valves on anticoagulation. While current guidelines suggest the use of warfarin in pregnancy if the daily therapeutic dose is less or equal to 5 mg, the risk of FWS may still be present.