Images in Neonatal Medicine

Extreme preterm neonate with fetal warfarin syndrome

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A 25+[3] week gestation male infant weighing 493 g was delivered via caesarean section for intrauterine growth restriction and abnormal Dopplers. The mother was on long-term thromboprophylactic warfarin 5mg/day due to her prosthetic mechanical heart valve following childhood rheumatic fever. Once pregnancy was diagnosed, at 4+0 weeks' gestation, warfarin was discontinued and low molecular-weight heparin was started. Warfarin was recommenced at 12+[1] weeks' gestation after a small maternal stroke. Neonatal dysmorphic facial features were noted, most obviously nasal hypoplasia (**figure 1**).

Figure 1 Nasal hypoplasia and dysmorphism in an extreme preterm neonate with fetal warfarin syndrome.

The hypoplastic upper airway precluded successive attempts to extubate to non-invasive ventilation. Radiographs showed stippled epiphyses and punctate calcifications paraspinally and in cartilaginous epiphyses (**figure 2**).

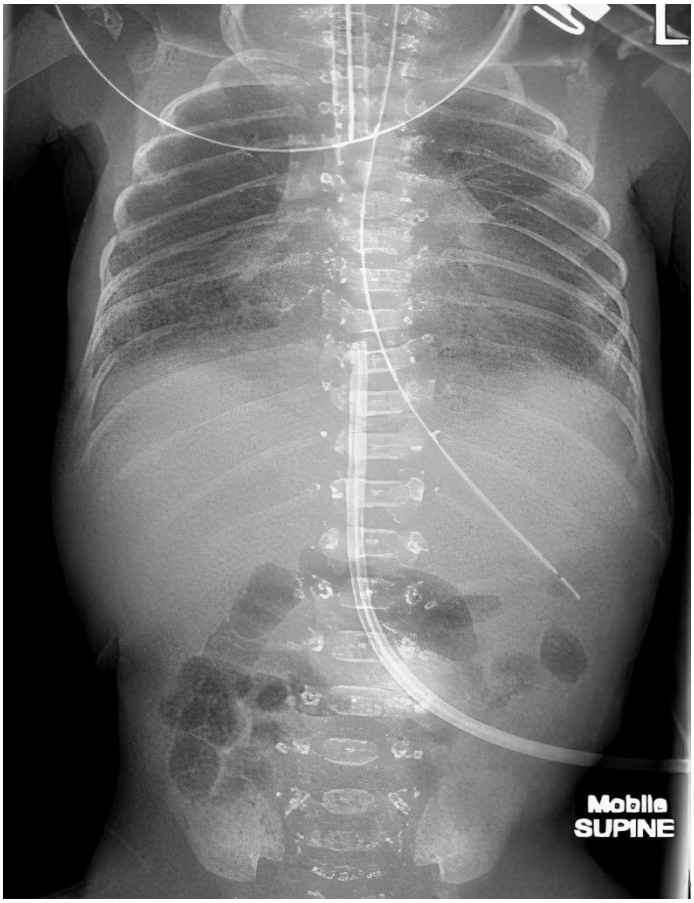

Figure 2 Radiograph showing florid chondrodysplasia punctata.

Genetic investigations including chondrodysplasia punctata panel were negative.[1] Fetal warfarin syndrome (FWS) is a rare condition resulting from fetal warfarin exposure during pregnancy. Presentation varies depending on dose and timing of exposure. Teratogenic effects of warfarin result from antagonism of vitamin K-dependent proteins (such as matrix Gla protein and osteocalcin) in the developing fetus. Nasal hypoplasia and skeletal abnormalities are hallmark features.[2] As greatest susceptibility to warfarin embryopathy is supposedly between 6 and 9 weeks' gestation, current guidelines suggest risk of FWS is minimised by stopping maternal warfarin from 6 to 12 weeks' gestation.[3,4]

Anticoagulation of pregnant women with mechanical heart valves is challenging. Although substitution of heparin for warfarin may limit teratogenicity, this may correspondingly increase maternal thrombotic risk.[5] The present case highlights the clinical conundrum of anticoagulation in pregnancy and illustrates that, even with adherence to best-practice guidelines, there is no guarantee that FWS will be avoided.

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