***Picture story***

# Gollop-Wolfgang complex in a newborn with Morton's toe and congenital heart disease

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**Introduction**

Gollop Wolfgang Complex (GWC) is a rare congenital limb malformation characterized by bifid femur, absent or hypoplastic tibia and ulna with limb shortening, oligodactyly, and ectrodactyly[1]. We report a neonate with GWC, Morton's toe and congenital heart disease.

**Case report**

A full term male baby, born via unassisted vaginal delivery, was admitted to the neonatal intensive care unit in a tertiary care hospital with visible deformities on day 2 of life. He was born to non-consanguineous parents without any family history of diseases associated with inborn errors of metabolism, chromosomal abnormalities or congenital malformations. Antenatal period was uncomplicated. Mother was a 24 year old second para with no history of miscarriages or any exposure to radiation or teratogens. Laboratory investigation of mother for toxoplasma, rubella, cytomegalovirus, herpes simplex, syphilis and human immunodeficiency virus infections were normal during the antenatal period. Antenatal ultrasonography was not performed.

On clinical examination, occipito-frontal circumference was 34.5 cm, weight 2.395kg and length 49.5cm. His heart rate was 146/min, respiratory rate 48/min and oxygen saturation was 98% at room air. His rectal temperature was $36.8^0$C. There was a swelling in the distal one third of right thigh and x-ray of the right lower limb showed a bifid femur and tibial aplasia (Figure 1).

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Left hand showed ectrodactyly, also known as lobster claw deformity which was confirmed clinically and radiologically (Figure 2). Both feet had Morton's toe also called Greek toe / Royal toe (Figure 3).

On auscultation, a loud pansystolic murmur was heard all over the praecordium suggesting a ventricular septal defect (VSD). 2-D echocardiography showed a VSD and mild right ventricular hypertrophy. Examination of respiratory, central nervous system (CNS) and gastrointestinal tract (GIT) systems were normal. Although there was a swelling in right thigh, the movements in the right knee joint were normal. Ultrasonography (USG) of abdomen was normal. Venous blood was obtained for laboratory tests. Complete blood counts, blood sugar, serum electrolytes, blood urea and creatinine, alanine transaminase, aspartate transaminase, serum alkaline phosphatase, serum albumin, serum globulin, and serum calcium were normal. Karyotyping was not performed due to economic constraints. Patient was referred to the orthopaedic surgeon and radiologist and findings were confirmed. Orthopaedic surgeon advised consulting a paediatric orthopaedic surgeon as the bony deformities were complex and patient was discharged from hospital.

**Discussion**

In 1984, Wolfgang reported complex congenital anomalies of the lower extremities viz. femoral bifurcation, tibial hemimelia and diastasis of the ankle[2]. In 1986, the term 'Gollop-Wolfgang complex' was introduced by Lurie and Ilyina as they concluded that the association of hand ectrodactyly and femoral bifurcation was not coincidental[3]. Our patient had all the major features of GWC which are, bifid femur, tibial aplasia and ectrodactyly. Brachymetatarsia is a condition in which the metatarsal epiphysis closes prematurely yielding a pathologically shortened metatarsal length. Brachymetatarsia of the first metatarsal leading to shorter first toe compared to 2nd toe is also known as Morton's toe[4]. Morton's toe was present in both lower limbs in our patient.

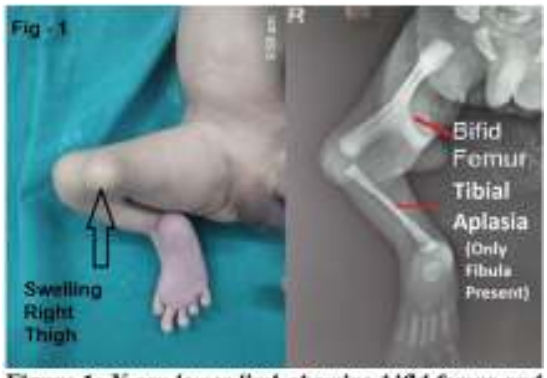


**Figure 1:** ***X-ray lower limb showing bifid femur and tibial aplasia***

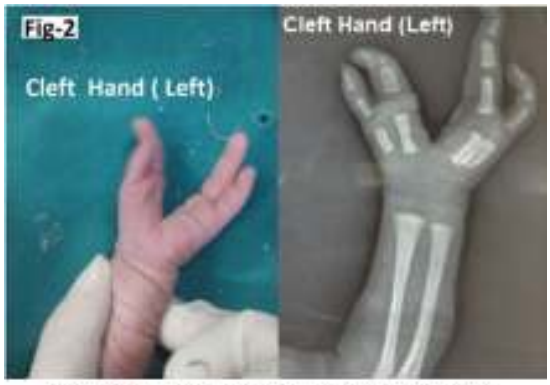


**Figure 2:** ***X-ray hand showing ectrodactyly***

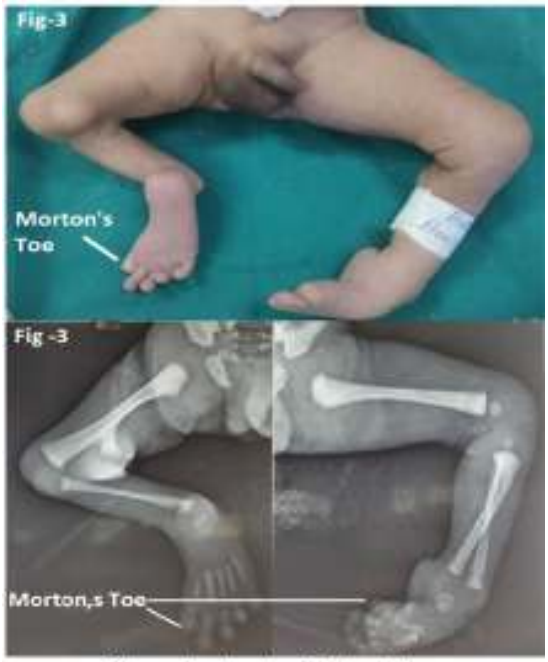


**Figure 3:** ***showing Morton's toe***

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