



## ORTHOPEDIC CONDITIONS IN THE NEW BORN

**Dr.D.Srinivasa Murthy**

M.S. (Ortho), HOD, Dept. of Orthopedics, Apollo Institute of Medical Sciences & Research, Hyderabad

**Dr.V.Nagamani\***

MD.DGO, \*Corresponding Author

**ABSTRACT** A Study was conducted over a period of 3 years (Mar 2012 to 2015) to know the common orthopedic injuries in the New born babies with which they were referred to ORTHO op for opinion and management. It was found that clavicular fractures were the commonest bone injuries and Congenital Talipes Equinovarus (CTEV) the commonest congenital postural deformities referred to ortho op in the study period.

**KEYWORDS : CTEV****INTRODUCTION:**

Birth injuries can involve (i) head, neck & face (ii) nerves (iii) spine (iv) viscera (v) bone and muscle (vi) soft tissues.

Nerve injuries with limb deformities, skeletal injuries and congenital injuries or deformities of limbs were the cases referred to orthopedic op. Though many orthopedic abnormalities were described as components of dysmorphic syndromes orthopedic conditions found as single entity were considered for the present study.

**NERVE INJURIES:** Though various nerves can be injured during delivery, brachial plexus injury is the commonest. Brachial palsy occurs due to trauma to nerve roots C5-T1 following a prolonged and difficult delivery leading to avulsion of the nerve roots and tearing of nerve sheath and compression of nerve fibers by hemorrhage and edema. The three main types of brachial palsy are

1. ERB's upper arm palsy (C5, C6, and C7): The arm is abducted and internally rotated with extension at elbow, pronated forearm and flexion of the wrist. Ipsilateral phrenic nerve injury may be associated.
2. KLUMPKE's lower arm paralysis (C8, T1): The hand is paralyzed and grasp is absent. An ipsilateral HORNER's syndrome may be associated due to concurrent injury to sympathetic fibers T1.
3. Total paralysis: when total paralysis occurs the entire arm is motionless, flaccid with all reflexes absent, along with secondary deficit.

**SKELETAL AND MUSCLE INJURIES : FRACTURES :**

1. Clavicular fractures : are unpredictable and unavoidable complication of normal birth. They are surprisingly common ,occurring in 3.3 to 18 per 1000 live births and difficult to identify any specific factor in order to avoid such fractures.
2. Humeral fractures : not common. Difficulty encountered in delivery of shoulders in cephalic deliveries and extended arms in breech deliveries often produce such fractures. Mostly greenstick fractures though fracture with overriding of bones may occur some times .Palpation of clavicle and long bones should be performed when fracture is suspected.
3. Femoral fractures : usually associated with breech deliveries.

**MUSCULAR INJURIES :**

Injury to sternocleido mastoid muscle and its sheath during delivery of after coming head in breech delivery leading to hematoma and cicatricial contraction .As the neck lengthens in the process of normal growth ,the head is gradually turned towards the side of the injury – a condition known as torticollis.

**CONGENITAL DEFORMITIES :** Common deformities encountered as single deformity are

1. Congenital dislocation of hip (Developmental Dysplasia of Hip) – ball and socket joint of hip is not formed normally. suspected when legs are of different height with less mobility on one side in high risk group. Diagnosed by clinical examination (feeling or listening clunks

when leg is kept in different positions) and confirmed by Ultrasound examination.

**2. Achondroplasia :** Achondroplasia is a distinctive condition that can be noted at birth. The baby with achondroplasia has a relatively long narrow trunk with short extremities and a disproportionate shortening of proximal segment. Seen in 1 in 15,000 to 40,000. Autosomal dominant due to mutation in FGFR3 gene.

**3. Polydactily:** extra digit due to autosomal dominant mutation in single gene

**4. Genu recurvatum :** Extreme extension of knee joint so that knee bends backwards .seen in 1 in 1,00,000 live births.

**5. Congenital Talipes Equino Varus (CTEV) :** Seen in 1 in 1000 new born babies where both feet or one foot rotated inwards and backwards.

Diagnosis is by clinical examination findings and confirmation is by X-rays in cases of bone fractures, USG in DDH. Treatment is conservative in almost all cases and were advised for follow up for atleast 3 months to 1 year

**MATERIAL AND METHODS :**

Those cases with visible external limb deformities and swellings which were referred to orthopedic op for opinion and management were considered in the present study. the results were analysed .

Depending on the aetiology of deformity classified as fractures, congenital, soft tissue injury and nerve injuries

**I. aetiology For The Deformity :** In a TOTAL of 27 cases

1.	Fractures	8	29.6%
2.	Congenital deformity	16	59.3%
3.	Soft tissue injury	1	3.7%
4.	Nerve injury	2	7.4%

**ii. fractures :** In a total of 8 cases

Clavicular fractures	6	75%
Femoral fractures	1	25%
Humeral fractures	1	25%

**iii. congenital Deformities :** in a total of 16 cases

1.	Congenital Talipes Equino Varus	12	75%
2.	Dislocation of hip	1	12.5%
3.	Genu recurvatum	1	12.5%
4.	Achondroplasia	1	12.5%
5.	Supernumerary digits	1.	12.5%

**Iv. nerve Injuries.** Found in 2 cases

ERB's upper arm palsy	1
KLUMPKE's lower arm paralysis	1

**V. soft Tissue Injuries :**

In only one case swelling with hematoma was found in the region of Sternocleido mastoid.

**Vi.management:**

Is conservative in almost all cases

No.	condition	Management	Results
1.	Clavicular fracture	Strapping/watchful expectancy	United well
2.	Femoral fracture	Skin traction	United
3.	Humeral fracture	Arm chest bandage	United
4.	Erb's palsy	Watchful expectancy	Took 6 months to recover
5.	Klumpke's paralysis	Watchful expectancy	Took 1 year for recovery
6.	CTEV	PONSETI's correction and POP for 3-4 months	Maintained by Denis Brown splint
7.	DDH (CDH )	Hip spica in abduction/Pavlik harness	Dislocation reduced
8.	Genu recurvatum	Anterior POP slab for 3 months	improved
9.	polydactyly	Not interfered	-
10.	achondroplasia	Parent counselling	-

**DISCUSSION:**

Congenital deformities were accounting 59% of orthopedic referrals of the new born babies.75% fracture bone cases were clavicular fractures.CTEV was the commonest congenital anomaly found in 75%cases.Though nerve injuries do not come under orthopedic conditions because of the deformity of the limb, referred to ortho op .History of difficult delivery present in cases of fracture femur ,humerus and some cases of fracture clavicle. Management in almost all cases is either by conservative or by watchful expectancy.All fractures united well with conservative management.CTEV required maintainance by Denis Brown splint till the child walked.Nerve injuries took a long time (6months to 1yr) to recover.Genu recurvatum improved with POP slab.Counselling of the parents is done for cases of achondroplasia and polydactyly in order avoid unnecessary operations.

**CONCLUSIONS:**

Fracture clavicle can occur even without a history of difficult delivery. With good obstetric care incidence of anomalies related to oligohyd ramnios and birth trauma (fractures ) is coming down,at times it may be unavoidable even in the best of hands

**References**

1. Roberts SW ,Hernandez C,Maberry MC et al : Obstetric clavicular fracture : The enigma of normal birth.Obstet Gynecol 86:978,1995
2. Turpenny PD,Nimmo A :Fractured clavicle of the new born in a population with high prevalence of grand multi parity: Analysis of 78 consecutive cases : Br J Obstet Gynaecol 100:338,1993
3. Chez RA, Carlan S,Greenberg SL,et al: Fractured clavicle is an unavoidable event.Am J Obstet Gynecol 174:797,1994
4. Miller ME,Graham JM Jr,Higginbotton MC,et al : compression related defects from early amnion rupture:vidence for mechanical teratogenesis.J Pediatr 98:292,1981