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## Case Study

### DUPLICATION OF THUMB AT META CARPO PHALANGEAL JOINT IN RIGHT HAND OF 19 YEARS OLD BOY -A CASE REPORT

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#### ABSTRACT

Here reporting a case of bifurcation of right thumb in the form of beak like deformity on the right side in a 19 years old young male present since birth. This anomaly was coming in the way his normal activities like lifting heavy objects and while performing any purposeful movements like writing and while taking his bolus of food. There was definitely family history of different anomalies, but no history of systemic diseases running in the family. There was no other anomaly in him. Other fingers and toes were absolutely normal. Though this is common anomaly that is found in the society, it has profound developmental and Anthropological importance. Hence studied and reported.

#### INTRODUCTION

Polydactyly is known to the man from the good olden days from the Pre-columbian Times (Mandiloff, 1931)<sup>[1]</sup>. The thumb duplication is the commonest anomaly of the hand (Castilla et al 1973<sup>[2]</sup>, Wolf and Myriantopoulos 1973<sup>[3]</sup>, Back et al 2007<sup>[4]</sup>). This anomaly may be of complete or partial of preaxial polydactyly type. The aetiology is not known. (Jobe et al 1992)<sup>[5]</sup>. The duplication of the thumb has occurred here and there (sporadic) & one side (unilateral) It has occurred in Asian population (Ezaki (1990)<sup>[6]</sup>, Light (1992)<sup>[7]</sup>, Naasan & Page (1994)<sup>[8]</sup>, Ogino et al (1996)<sup>[9]</sup> Seidman & Weiner (1993)<sup>[10]</sup> Tuch et al (1997)<sup>[11]</sup>, Castilla (1973)<sup>[2]</sup>, Frazer 1960<sup>[12]</sup>, Hung et al (1996)<sup>[13]</sup>, Islam et al (1992)<sup>[14]</sup>, Jobe et al 1992<sup>[5]</sup>. This anomaly is more common in Negroes when compared to Caucasians (Frazer 1960)<sup>[12]</sup>, Altemus Ferguson 1965.<sup>[15]</sup>

#### Case Report

Unilateral duplication of thumb was seen in 19 years old boy with beak like deformity on the right side. This deformity was observed in him when he was writing his in the examination hall at Bangalore. He was finding it difficult to write his examination due to deformity. He used to take intermittent rest while writing. His hand writing has been changed

#### Family History

There was family history of various anomalies like cleft lip, polydactyly, hexadactylism, absence of carpal bones etc. But there was no history of Systemic diseases like hypertension, diabetes, no history taking drugs during pregnancy.

#### On Local Examination

There was bifurcation of thumb at (?) at metacarpophalangeal joint of right hand. There was acute flexion at interphalangeal joint of same finger giving the beak like appearance. Skin over the joint was thickened and less wrinkles were seen. There was fullness in the joint. There was gap in the bifurcated thumb. Movement of that interphalangeal joint was very minimal, but movement at metacarpophalangeal joint was almost normal. Joint sense was normal. Joints in the other fingers were normal. Toes were normal. No other anomalies seen. Thumb in the left upper limb was normal.

#### DISCUSSION

Experimental studies evidence showed any agent that gives rise to temporary growth disturbances between the mesoderm and ectoderm of preaxial limb bud during maximum proliferation of cells may give rise to Bifid thumb<sup>[16]</sup> (Nogami and Oochira). Temtomy & McCusick) 1969) did a study on congenital malformation in 214 live birth cases. They diagnosed 188 cases of solitary anomalies as

single malformations. 28 cases were excluded since they were cases of polysyndactyly & other anomalies. Then they classified those 188 cases into 6 types.

Type-1-Thumb or or big toe polydactyly

Type-ii-Preaxial Polydactyly of Triphalangeal thumb

Type-iii-Preaxial polydactyly of Index finger

Type-iv-A-Polydactyly of well formed articulated extra digits at the ulnar or Fibular Edge

Type-v-B-Polydactyly -Post Axial -Polydactyly of incomplete unarticulated extra digits at ulnar or fibular edge.

Type-vi-Post Axial (Mixed ) has been added to include cases in which both A&B were present at the different limbs in the same individual [17].

My previous study on bifid thumb (2016) was observed in 60 years old male which showed bifurcation of thumb in the left upper limb. There was no relevant history in the past. On close examination, both the limbs of bifid thumb were straight, not angulated Bifurcation was seen not at the base but near terminal end. The cleft between two bifid thumb was shallow. Movement were totally absent at distal interphalangeal joint. So subject had difficulty in carrying out his normal activities and lifting heavy objects. No relevant family history<sup>[18]</sup> (Bilodi et al). Incidences of syndactyly is much more common than Polydactyly, & polydactyly of the Radial side is very common than polydactyly of the ulnar side<sup>[19]</sup> (Dobnys et al 1985). Bifurcation level and duplication extent depends on changes in the skeletal and soft tissue structures. <sup>[20]</sup>(Tada et al).

### Present Study

In the present study, there is beak like bifurcation of right thumb. Both the limbs of bifurcated thumb are flexed and meet together leaving a gap. Probably bifurcation has taken place at metacarpophalangeal joint of the right thumb at the base. X-Ray was not taken because he refused. The movement at metacarpophalangeal joint was there but movement was absent at interphalangeal joint of the both the limbs of bifurcated thumb. Joints sense was present. There was fullness in the interphalangeal joint. Skin was smooth and less crease was seen over the joint. According to the Temtomy & Mc Cusick, classification, this is Type-1, where only polydactyly of the thumb was present. Other fingers and toes were normal. No other anomaly was present. In my previous study of polydactyly of the thumb, bifurcation of the thumb was present near the tip but not at the base.

### ACKNOWLEDGEMENT

My sincere thanks to the patient who has permitted me to take photograph and study his deformity of thumb.

### CONCLUSION

This anomaly profound has both genetic as well as anthropological importance. Hence this case has been studied and reported.

### CARRY HOME MESSAGE

The patient with deformity of thumb which has come in the way of day to day activities, it should be treated surgically or if it is not operable, then assurance should given with moral support. A Case of Bifid Thumb of Right Hand in 19 Years Old Male.



Photograph Showing Duplication of the Thumb in the Right Hand showing BEAK LIKE Deformity

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