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Case Report

A CASE REPORT OF TRIPHALANGEAL THUMB

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ABSTRACT

Present case is bilateral triphalangeal of thumb (TPT) in 23 years female. This case was obtained during research project on congenital anomalies of hand. TPT serve as usual marker (along with clinical and radiological finding) helpful to establish correct diagnosis, leading to appropriate management and genetic counselling.

Keywords: Bilateral, Triphalange of thumb, Gentic counseling, Congenital anomaly

INTRODUCTION

Triphalangeal thumb (TPT) is a rare malformation of Thumb, in which thumb looks like finger and contains three phalanges instead of two. It is usually inherited as an autosomal dominant trait and some sporadic cases. It may occur as isolated defect or in association with other abnormalities of hand or as component of malformation syndromes like bone marrow dysfunction, congenital heart disease, lung hypoplasia or agenesis, mental retardation and other disorders. Isolated TPT occurs in two functional form :opposable and nonapposable.Triphalange of thumb first described by Renaldi Columbi in 1559. Its prevalance rate is 1:25000.[1]

CASE REPORT

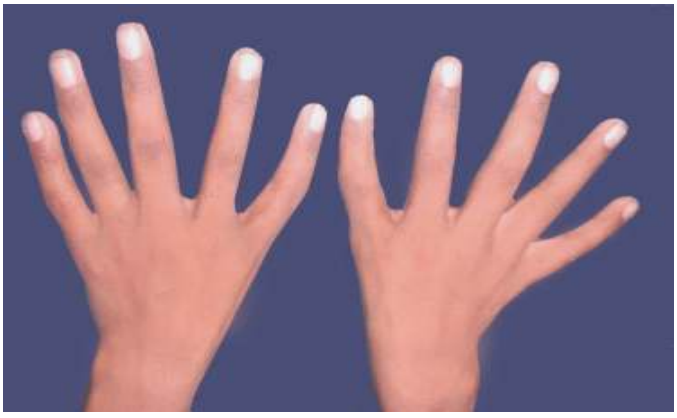

Figure 1: Showing dorsal aspect of hand

In the present case 23 years female brought to O.P.D in Physiotherapy Department B.J Medical College, Pune with chief complaint of no opposition of thumb. On physical examination both hands having five fingers and triangular appearance of palm. Both her thumb ,appeared relatively long tip of both thumb reached to the level of middle phalanx of index finger and it appeared from same level with other fingers. shown in fig (1) .Distal phalanges of both thumbs –slight flexed and ulnar side deviated .

Proximal phalanges joints were freely movable as compare to distal phalanges joint where as metacarpophalanges joints movable in flexion, extension ,adduction and abduction and carpometacarpal joints freely movable in all direction .No other bony abnormalities has been noticed. There is no family history of any bony anomalies and systemic examination were normal.

On Dermatoglphic examation---(fig -2and fig-3) Finger tip patterns show normal arch,loop and whorl pattern while palmar pattern shows rudimentary thenar creases in both the palm and not reaching to the base of palm.

DISCUSSION

Normally in each hand, fingers contain three phalanges and thumb contains two phalanges. Biphalanges of thumb results from loss of one phalanx or fusion of middle phalanx and distal phalanx in thumb in the course of evolution this hypothesis supported by longest terminal phalanx of thumb. This evolution has occur for specialization of pincer action and opposition[2]. There are various hypothesis given by various authors regarding TPT .some authors say TPT represent

persistent of middle phalanx or failure of fusion of middle and distal phalanx. While Joachimsthal(1990) stated TPT reperesent duplication of the index finger in association of absence of thumb[3]. Lapidus and Guidotti (1944) stated TPT is the result of incomplete duplication of the thumb[4]. Molecular study shows isolated TPT mapped to chromosome region 7q36 casued by genomic duplication and point mutation of ZPA and SHH (sonic hedge hog) gene. Embryological basis of TPT result because of improper induction of growth and differentiation on preaxial side[5]

Clincally TPT presents isolated form or in association with other malformation . In present case isolated bilateral TPT has been observed. Swanson AB,brown KS(1962) also observed isolated TPT bilateral in 90% of reported cases.[6]

While Abramowitz (1958) observed TPT in three generation in Bantu family in South Africa.[7] and Haas(1939) observed longitudinal splitting of the distal part of the nail phalanx giving duckbill appearance in three generation[8]. Abramowitz and Haas observed definite hereditary pattern of TPT. Holt and Oram(1960) observed TPT(bilateral) in four cases out 25 cases along with congenital anomalies of heart in Holt-Oram syndrome [9] and Wood (1976) observed TPT with polydactyl[10].

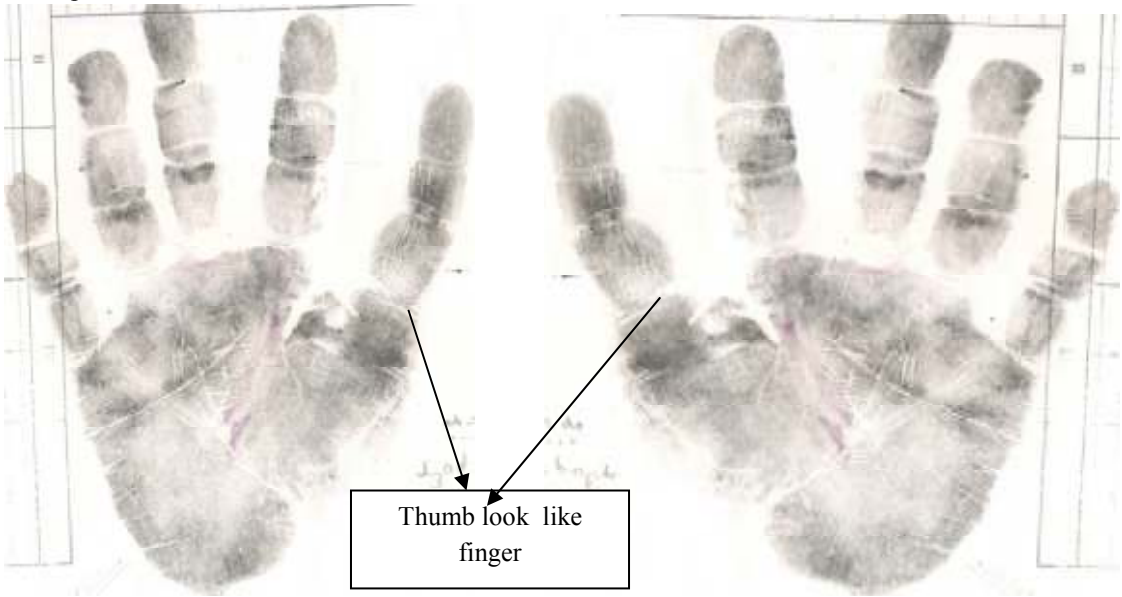

Figure-2 **Figure-3**

Figure—(2 & 3)—Dermatoglyphic pattern of palm showing rudimentary thenar crease.

CONCULSION

TPT may occur as isolated defect or in association with other malformation or as component of Syndroms TPT also serve as helpful usual marker (along with clinical and radiological finding) for establishing correct diagnosis for appropriate management and genetic counselling.

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