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SUPERNUMARY OF DIGITS AND TOES: A CASE REPORT

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ABSTRACT

Aim of the study: To report a case of a polydactyly in an elderly persons involving all four limbs.

Place and period of study: This case was studied in month of July 2007 in Bangalore who happens to be an owner of the shop on Mysore road, Bangalore.

Case Report: A male aged 68 years was found to have a single extra digit (supernumerary of digits) in his all four limbs. He had no other anomalies except skin changes and shown no signs and symptoms. He was father 4 children where second son also had extra limb in his right upper limb.

On Examination: He was elderly person tall with well built and well nourished .On clinical examination ,he had a single extra digit (supernumerary of digits) in all limbs i.e.,both upper limbs and lower limbs There was no cyanosis,clubbing jaundice and lymphadenopathy. All his systems were within normal limits.

Local Examination: Local examination showed extra digits in all 4 limits So total, he had 12 fingers in his upper limbs (6 in each) and 12 toes in his lower limbs(6 in each).All the toes and digits were mobile except in extra toe where there was limitation of movements and were almost same calibre of the remaining fingers /toes .No other anomalies were observed.

Discussion: Since this is rare anomaly,this case has been review with the available literatures. Later, compared and correlated.

Conclusion: This case study gives knowledge of variation the developments Hence it has embryological importance. Surgically it contributes to surgeons about the anatomy of supernumerary of digits so that it can be surgically corrected if required or for cosmetic purposes.Hence it has been studied anatomically and for surgical purposes.

Conclusion: This case of polydactyly is of genetic and clinical importance This case has familial tendency and has history of consanguinity.So this case has studied in detail and reported.

Keywords: Super numary of digits, extra digits,pre axial polydactyly,post axial polydactyly, Duplication of thumb.

INTRODUCTION

Polydactyly is a very rare anomaly of hand and foot.It may occur single case or may be associated with anomalies. Single isolated cases may occur as Autosomal dominant while when it occurs in syndromes then it is autosomal recessive[1]. It is *HOX* gene mutation which are known to cause anomaly of limbs .During the development of limbs ,there will be lengthening of limb followed by soft tissue development & progression of digits differentiation[2]A study was done by Finley et al along with data from Jefferson County, Alabama and Uppsala County, Sweden showed the incidences of anomalies of polydactyly was 2.3

/1000in males of white population and 0.6 /1000 females of white populations and 13.5 / 1000 in males of black , and 11.1/ 1000 in females of black populations of all types of polydactyly[3].In various Asian populations,like South China, Hong Kong, and Japan, 90% of cases are Preaxial polydactyly.Duplication of thumb are the common anomalies at the level of metacarpophalangeal joints.[4, 5].

CASE REPORT

A 68 year sold male from Kumbalagud, Mysore road, Bangalore was found to have a total of 24 digits in both upper and lower limbs bilaterally. He had no other anomalies with any signs and symptoms. He was father of 4 children where second son had extra limb in his right upper limb who had got married to his own relative but exact relation is not known.

ON EXAMINATION

An elderly person with well built and well nourished body was very tall nearly 6feet and 7 inches. He had no systemic diseases. He was a wrestler in his younger days. There was no cyanosis, clubbing jaundice and lymphadenopathy. All his systems were within normal limits.

LOCAL EXAMINATION

On examination he had supernumerary of the digits both upper limbs and in lower limbs. There were 6 digits in each limb.

UPPER LIMB

Right Upper Limb: Showed Post axial supernumerary of digits where extra finger was present lateral to little finger, on the Radial side..This finger was short, stout and immobile. Movement was very much restricted. .Other fingers were normal in length and in calibre. Movements were normal, in remaining 5 digits. Nails and skin were normal.

Left Upper Limb: Here also Post axial supernumerary of digits was present where extra finger was present lateral to little finger, on the radial side but slightly longer than right upper limb.. This finger was shorter than little finger. and mobile. Movement was not restricted. .Other fingers were normal in length and in calibre. Movements were normal in remaining 5 digits Nails were normal and skin showed trophic changes.

LOWER LIMBS ANOMALIES

Left Lower Limb:-All the 5 toes were present along with extra 6th toe. Both the 6th were toes short and stout within normal movements**.** Nails were normal and skin showed trophic changes.Nails were normal and skin showed slight trophic changes on the dorsum of the foot. Movements were normal in all digits

Right Lower Limb: All the 5 toes were present along with extra 6th toe All the 6TH were toes short and stout with normal movements. Nails were normal and skin showed slight trophic changes on the dorsum of the foot. Movements were normal in all toes except in extra toe where there was limitation of movements.

DISCUSSION

Polydactyly has been classified into into preaxial, central, and postaxial types by Temtamy and McKusick[6] .Preaxial polydactyly involves first digits[7],central polydactyly involves 2nd 3rd 4th digits,while involvement of fifth digit or ray are post axial types. The combination of syndactyly and polydactyly is known as Synpolydactyly.[8, 9]In a study by Castilla et al,[10] polydactyly.are well seen in trisomy 13, Meckel syndrome, and Down syndrome. Polydactyly are well in skeletal dysplasia, which affect the hand for example in hitchhiker thumb in diastrophic dysplasia .A very good prognosis is seen in solitary cases. or polydactyly in short rib polydactyly[11& 12]hyperkeratosis and acanthosis overlying many

nerve bundles in the dermis are seen in Rudimentary polydactyly[13] Surgical removal is done in postaxial polydactyly of the foot between 9-12 months of age for the purposes of cosmetics and comfort of shoes[14].Emotional stress is seen in a child with anomaly of distal extremity[15] A case of Fibular dimelia and mirror polydactylyhas been reported in a girl aged seven months old whose mother took misoprostol in the second month of pregnancy to induce abortion.She had under built stature hypotonia, anteverted nares, long philtrum and carp-like mouth on clinical examination.. There was reduction defect in left hand along with absence of fingers of second, third, and fifth fingers and camptodactyly of the fourth finger, with absence of the extremities of the second, third and fifth fingers and camptodactyly of the fourth finger. There was hypoplastic pelvis. Esophageal atresia with tracheoesophageal fistula and imperforate anus detected during antenatal period Agenesis of the right kidney and duplication of left pyelocaliceal were diagnosed by the ultrasound. X-Ray showed showed iliac and femoral hypoplasia, absence of the tibia with a duplicated fibula and seven metatarsals and toes with no prominent hallux on the foot[16]. Polydacyly is characterized by having more than five fingers or digits.It can present alone or as part of any syndrome due to genetic disorders. A Polydactyly can be classified into 5 types –Type-1,Cutaneous ribbon,Type -2 Pedunculated type,type-3,Articulating digit with 5th metacarpal bone,Typ-4,fully developed digit with sixth metacarpal bone ,Type-5,Polysyndactyly .A case of polydactyly was reported in two brothers of same family.Two sons in a family had polydactyly.The second son and fifth son had post axial polydactyly of both hands and feet Eldeast son was suffering from cardiac disease (Pit Baran Chakraborthy , Bani Marjit, Sikha Datta, Alpana De-2007).[17] In chondroectodermal dysplasia, there are bilateral polydactyly associated with hydriotic ectodermal dysplasia involving mainly skin, teeth & nails & congenital anomalies of heart. Such patients should be referred to Dental surgeons, cardiologists, and orthpedic surgeons for early treatment for all anomalies (Eswar.N.J:2001)[18] In present study, there was no hydriotic ectodermal dysplasia involving mainly skin, teeth & nails & congenital anomalies of heart. Except polydactyly In Joubert'sSyndrome, there is bilateral post axial polydactyly of hands and feet seen in consanguineous families. It is autosomal recessive disorder. (Aslan H et al2002),[19] Limbr 1 gene is very essential for the development of limb.Any reciprocal changes can result in decrease or increase in number of digits (Clark RM et al).[20] Pallister Hail Syndrome is syndrome charecterized by polydactyly, associated with other anomalies like dysplastic nails, imperforate anus, insertional hexadactyly of left upper limb, and 2 y shaped metacarpal with 6 fingers at right hand (Stroll.C et al)[21].In present study, there was no case of dysplastic nails ,imperforate anus,insertional hexadactyly any y shaped metacarpal in both hands.

PRESENT STUDY

Showed bilateral polydactyly in elderly person aged 68 years.All his four limbs(both upper limbs and lower limbs) showed extra digits So totally, he had 24 digits.Out of them one extra digit was having less mobility, short and stout and rest extra digits were mobile.There was no absence of any bones in the forearm nor in the leg All.But there was associated skin changes over the dorsum of the feet.X-Ray of limbs were not taken as he refused to get X-Ray of his limbs.No other anomalies were present .There was no dysplasia of skeletal systems. Another feature of this case is his stature was tall but fingers were short when compared to his height .His toes were normal.

He had married to his nearest relative but exact degree of consanguinity is not known. His second son had extra digits in the right upper limb.So this case is of familial and consanguineous. He was not diabetic nor hypertensive. There was neither involvement of nerves nor any other systems

except his limbs. In present study, there was no hydriotic ectodermal dysplasia involving mainly skin, teeth, nails & congenital anomalies of heart. Except polydactyly and there was no case of dysplastic nails, imperforate anus, insertional hexadactyly any "y" shaped metacarpal in both hands.

CONCLUSION

This case study gives us the knowledge of variations in the developments of limbs Hence it has embryological importance. Surgically it contributes to surgeons about the anatomy of supernumerary of digits so that it can be surgically corrected if required or for cosmetic purposes.Hence it has been studied anatomically and for surgical purposes. (Anatomists contributing to Surgeons). This knowledge of variations of supernumerary of digits is very important to the surgeons. Hence we are contributing this knowledge to surgical arena.

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Legend-1, Showing supernumery of digits in his upper limbs with skin changes over the left thumb and with short, stout immmobile extra digits.

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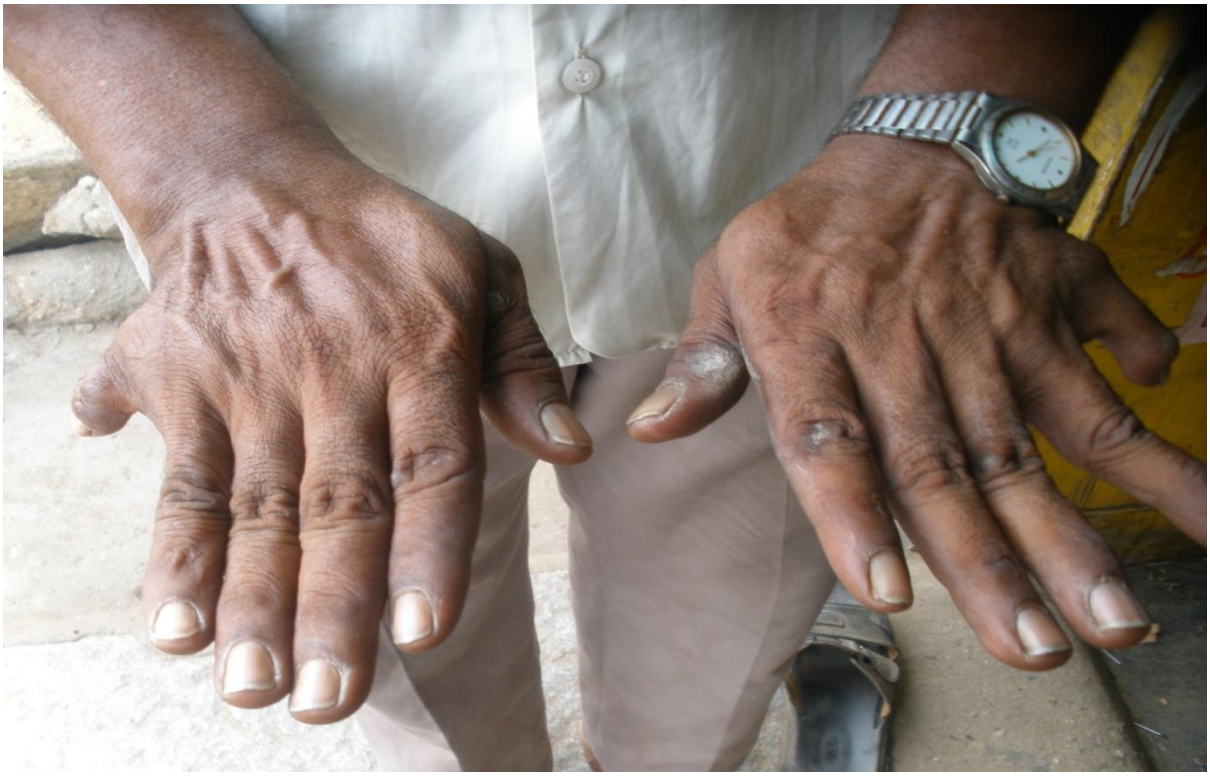

Legend -2, showing bilateral polydactyly in his lower limb and skin changes on the dorsum of the right foot