

January 2012 Radiology Review: Isolated Macroductyly of Great Toe
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History of Present Illness: The patient is a one week old female who was referred to the orthopaedic clinic by her pediatrician for evaluation of a toe deformity. She was noted to have an enlarged right second toe at birth. Was born full-term, NSVD, no complications, was discharged home from the hospital at 2 days of age. Birthweight 8 lbs 2 oz. There is no family history of orthopaedic abnormalities, she has a healthy 3 year old brother. No previous x-rays, no previous orthopaedic evaluation.

Physical Examination: On examination, the patient is a vigorous, healthy well-appearing one-week old female infant, VSS, weight 8lbs 4 oz. Examination of her right second toe shows it to be significantly enlarged compared to the left. There is also mild medial deviation of the distal portion of the toe with mild overlapping. The foot is otherwise normal, neurovascular assessment appears normal, good perfusion, excellent capillary refill, moves all toes, no evidence of equinovarus/clubfoot or significant metatarsus adductus.



Radiographs: (AP x-ray of the right foot)



Diagnosis: Isolated Macrodactyly (localized gigantism) of Right Second Toe

Several theories exist about the cause of isolated macrodactyly. Some believe that the condition is caused by an abnormal nerve supply to the affected digit while others blame an abnormality in the vascularity/blood supply in the area. Macrodactyly in the majority of patients is an isolated finding without other associated symptoms or systemic involvement. However, there are a range of other, mostly congenital pathologic conditions in which localized overgrowth may mimic the clinical picture of macrodactyly. These include neurofibromatosis (NF), primary lymphatic disorder (Milroy disease) and vascular malformation, for example Klippel-Trenaunay-Weber syndrome. Several rare hereditary syndromes include hamartomatous changes that possibly present as macrodactyly, for example, Proteus syndrome, Bannayan Syndrome, Maffucci Syndrome and Ollier disease.

Brief Review/Treatment: Any non-urgent/elective surgical procedure on the hand or foot is generally delayed until the patient is approximately 9 months of age. This is to allow for interval growth of the osseous and cartilaginous structures of the foot and to decrease the overall complication rate. Surgical options for isolated macrodactyly include debulking, ray resection, and toe amputation (though this is not done if the great toe is involved). The overall goals of surgery are to produce a painless, cosmetically acceptable digit that tolerates shoewear.