



Infantile Digital Fibromatosis—Which is Better for a Child: a Surgical or Observational Approach?

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Received: 12 March 2021 / Accepted: 7 May 2021 / Published online: 13 May 2021
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Abstract

The golden standard of infantile digital fibromatosis treatment has not been established. This publication aims to present the process of sustained treatment of a 4-month-old boy with a red, firm, swollen, painless tumor of the third and fourth right toes and syndactyly of these. The lesion was surgically resected due to continued growth, but after 1 year of observation, local recurrence was noticed and an observational approach was implemented with satisfactory effect.

Keywords Fibromatosis · Surgical procedures · Observational approach · Infant · Syndactyly

Case Report

A 4-month-old boy was admitted to the Department of Pediatric Surgery, Traumatology and Urology due to a red, firm, swollen, painless tumor of the third and fourth right toes and syndactyly of these (Fig. 1). The lesion measured approximately 2 cm. The child's past medical history did not reveal trauma or infection of the right foot. The radiograph indicated the lack of the intermediate and distal phalanges of the fifth toe and hypoplastic intermediate phalanx of the fourth toe (Fig. 2). A biopsy of the mass was performed and the result of the histopathological examination was interpreted as infantile digital fibromatosis. Because the lesion continued to grow, the patient qualified for a surgery under general anesthesia. The tumor was resected with a negative tissue margin, and after the resection, the cavity was covered with a whole skin graft taken from the right

inguinal region (Fig. 3). The skin graft healed without any complications. The patient was discharged in a good local and general condition. The child was kept under ambulatory observation. After 1 year of observation, local recurrence was noticed. This time, we decided on a conservative approach. The lesion regressed to approximately one-half of the previous measurements. No progression was noticed during the following 4-year period. Currently, the tumor has no negative impact on foot function.

Discussion

Infantile digital fibromatosis (IDF) is a rare benign lesion originating from myofibroblasts and constituting approximately 2% of all fibromatoses. IDF occurs on the dorsal or lateral side of the fingers and toes as a single nodule or multiple nodules. Studies have not explicitly established gender dominance but concluded that the majority of masses appear within the first 2 years of life. An IDF lesion is typically red, smooth, hard, and smaller than 2 cm in diameter. Moreover, the majority of masses is harmless, although in some cases, discomfort and loss of joint function have been described [1–3].

IDF may be successfully managed with either surgical or conservative observational approach. Symptomatic nodules

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Fig. 1 Red, firm, swollen, painless tumor of the third and fourth right toes co-occurring with syndactyly



Fig. 2 The X-ray indicates the lack of the intermediate and distal phalanges of the fifth toe and hypoplastic intermediate phalanx of the fourth toe

such as those with structural deformity, pain, immobility, compromised skin, or its dysfunction should qualify for surgical excision [1]. Therefore, the tumor in our patient primarily qualified for surgical resection. Unfortunately, the number of recurrences after the implementation of this approach may reach even three-quarters of all cases [1]. Due to the recurrence of the lesion with no foot dysfunction, we decided on a non-invasive approach. It may be used successfully in smaller asymptomatic masses due to high probability of spontaneous regression or even resolution. Moreover, research has nowadays focused on developing less invasive methods with lower rates of recurrence, such as intralesional injection with 5-fluorouracil, triamcinolone, or cryotherapy. It is, however, worth noting that these repeated procedures may be painful for the patients. The plurality of the

managing techniques and the lack of randomized studies have been rendering it impossible to establish a golden standard [1–4].

Digitocutaneous dysplasia including IDF may co-occur with clinical findings such as the lack of organization of phalanges and metacarpus, articular abnormality, or syndactyly [5]. Only two patients with postoperatively IDF have been described in literature [6, 7]. However, we report initial comorbidity when it comes to these diseases.

The infantile digital fibromatosis is a rare benign tumor that may be treated successfully with surgical and observational approach. The managing technique depends on the patient's clinical condition. Both surgical and non-invasive treatment should be implemented stepwise, and their use should be well justified.



Fig. 3 The resection of the tumor of the third and fourth right toes was followed by covering the cavity with a whole thickness skin graft taken from the right inguinal region

Availability of Data and Material Not applicable.

Code Availability Not applicable.

Author Contribution All authors contributed to the study conception and design. Material preparation, data collection, and analysis were performed by Patrycja Sosnowska-Sienkiewicz, Patrycja Antosik, and Anna Ostalowska. The first draft of the manuscript was written by Patrycja Sosnowska and all authors commented on previous versions of the manuscript. Przemysław Mańkowski critically revised the article and approved final version of the manuscript. All authors read and approved the final manuscript.

Declarations

Ethics Approval Not applicable.

Consent to Participate Not applicable.

Consent for Publication Not applicable.

Conflict of Interest The authors declare no competing interests.

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