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POST-OPERATIVE SIMPLE INCOMPLETE ACQUIRED SYNDACTYLY IN THIRD AND FOURTH DIGITI MANUS SINISTRA: A CASE REPORT

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ABSTRACT

Syndactyly is interdigiti soft tissue and/or osseous fusion or adhesion and may affect hand and/or foot. Syndactyly is caused by congenital or acquired. Acquired syndactyly is a rare disease that may caused by trauma, inflammation, or infection around the finger. This abnormality may affect aesthetic and functional impairment, so that surgery procedure is needed to syndactyly release. The aim of this paper is to report a rare case of simple incomplete acquired syndactyly post-operative in a man aged 53 year old. Patient came to surgery clinic because adhesion of his third and fourth left hand fingers since 21 years ago. The abnormality was disturbing his work as a baker currently. He had trauma 21 years ago when he worked as construction labour that cause swelling in his left palm, so he went to hospital and got needle aspiration. After needle aspiration, he experienced worse symptoms like recurrency swelling, rednesss, itchy, and pain then got surgery procedure that did not affect the fingers area directly. After surgery, the symptoms got improved, but he found adhesion between his third and fourth fingers days later after surgery. From currently physical examination, there was left hand interdigiti adhesion between 1/3 proximal thirth and forth fingers and from palpation there was no adhesion between the finger bone. He was diagnosed simple incomplete acquired syndactyly third and fourth digiti manus sinistra. The patient got surgery procedure with z-plasty technique to syndactyly release and hospitalized for 3 days. He got Cefixime, Ketoprofen, and Mefenamic Acid when he went home. The patient came to hospital to get follow-up 6, 10, and 17 days after surgery.

Keywords: *Simple incomplete acquired syndactyly; post-operative; case report*

ABSTRAK

Sindaktili adalah fusi atau adhesi antar jaringan lunak dan/atau tulang antarjari tangan dan/atau kaki yang dapat terjadi secara kongenital atau didapat. Sindaktili didapat merupakan penyakit yang jarang dijumpai dan mungkin terjadi akibat trauma, inflamasi, atau infeksi disekitar area jari. Abnormalitas ini dapat mempengaruhi aspek estetika dan fungsional, sehingga prosedur operasi diperlukan untuk syndactyly release. Tujuan dari artikel ini ialah untuk melaporkan kasus sindaktili didapat simpel inkomplet post-operatif yang jarang dijumpai, pada seorang

laki-laki berusia 53 tahun. Pasien datang ke klinik bedah karena perlekatan jari ketiga dan keempat tangan kiri sejak 21 tahun yang lalu dan mengganggu keseharian pasien sebagai pembuat kue. Ia memiliki riwayat trauma 21 tahun yang lalu ketika bekerja sebagai tukang bangunan sehingga menyebabkan bengkak pada telapak tangan, pasien ke rumah sakit dan mendapat aspirasi pada bagian yang bengkak. Setelah aspirasi, gejala pasien memburuk dengan bengkak berulang, kemerahan, gatal, dan nyeri, sehingga pasien menjalani operasi namun tidak mempengaruhi area jari secara langsung. Setelah operasi, gejala membaik, namun pasien mendapati perlekatan antar jari ketiga dan keempat tangan kirinya beberapa hari setelah operasi. Dari pemeriksaan fisik saat ini, didapati perlekatan pada 1/3 proksimal jari ketiga dan keempat dan dari palpasi tidak didapati perlekatan tulang. Pasien didiagnosis sindaktili simpel inkomplet didapat jari ketiga dan keempat manus sinistra. Pasien menjalani operasi dengan teknik z-plasti untuk syndactyly release dan dirawat di rumah sakit selama 3 hari. Pasien mendapat terapi Sefiksim, Ketoprofen, dan Asam Mefenamat ketika pulang. Pasien datang ke rumah sakit untuk follow-up pada 6,10, dan 17 hari setelah operasi.

Kata kunci: Sindaktili simple inkomplet didapat, post-operatif, laporan kasus

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INTRODUCTION

Syndactyly term is from Greek prefix syn- means with or together and the Greek noun daktylos means finger.(1) Syndactyly is interdigiti soft tissue and/or osseous fusion or adhesion and may affect hand and/or foot. Foot syndactyly is less discussed than hand syndactyly, it is may caused by hand abnormality is more affect the aesthetic and functional impairment. This abnormality is classified into simple and complex depending of presence or absence of bone fusion. Syndactyly complicated is when there is fusion between interfinger bones, joints, tendons, muscles, and neurovascular. Syndactyly is also classified into complete (extends along the finger include nail folds) and incomplete (not extend along the finger).(2)

Syndactyly is caused by congenital or acquired. Congenital syndactyly is found in 1/2000 live birth and become most common congenital hand anomaly. Congenital anomaly may happen sporadic, failure of apoptosis separation of mesenchymal tissue when intrauteri limb involvement, failure of notch formation in apical ectoderm ridge when intrauteri limb involvement during 6 to 8 weeks gestation, or associated to inherited autosomal dominant diseases like constrictive ring syndrome, Poland syndrome, Apert

syndrome, and Carpenter syndrome.(2) Acquired syndactyly is a rare disease that may caused by trauma, inflammation, or infection around the finger.(3) There was no demographic data about acquired syndactyly. Syndactyly is diagnosed clinically. Radiology assesment like x-ray and MRI may be used to evaluate bone or other parts fusion. The therapy may be operative or non-operative depend on indication.(2) The aim of this paper is to report a rare case of simple incomplete acquired syndactyly post-operative in a man aged 53 year old.

CASE REPORT

A man aged 53 years old came to surgery clinic because adhesion of his third and fourth left hand fingers since 21 years ago. The abnormality was disturbing his work as a baker currently. He had trauma 21 years ago when he worked as construction labour. He gripped iron rod too tight then he had swelling in his left palm, so he went to hospital and got needle aspiration. After needle aspiration, he experienced worse symptoms like recurrency swelling, rednesss, itchy, and pain. Then, he returned to hospital and got surgery. He described the surgery as vertical incision in palm that parallel between third and fourth fingers. The incision did not affect the fingers area directly. After surgery, the symptoms improved, but he found adhesion between his third and fourth fingers days later after surgery. He has no history of hypertension, mellitus diabetes, and other diseases. He has no history of allergy and keloid before.

Figure 1. Before surgery

From physical examination, there was left hand interdigiti adhesion between 1/3 proximal thirth and forth fingers (**Figure 1**) and from palpation there was no adhesion between the finger bones. The patient was diagnosed simple incomplete acquired syndactyly in third and fourth digiti manus sinistra and the surgeon suggested him to got surgical procedure to release interdigiti adhesion. The patient was agree. He got general anesthesia, then the surgeon used z-plasty method and seide silk with simple

interrupted suture. We don't have documentation during surgery. Z-plasty is described at **Figure 2.**[4]

The patient was hospitalized for 3 days and got Cefixime 100 mg, Ketoprofen 50 mg, and Mefenamic Acid 500 mg when he went home. He came to follow-up 6 days **(Figure 3)** and 10 days **(Figure 4)** after surgery. The patient felt pain when he tried to maximal finger abduction. The distance between finger when maximal abduction was wider in the second follow-up than the first follow-up. Sofra Tulle was used when wound dressing changes. Wounds are treated closed. Then the patient came again 17 days after surgery and did not complain about the pain anymore and said that the finger was more easier to move. In the third follow-up, aff hecting was done **(Figure 5)**. Closed wound treatment was continued.

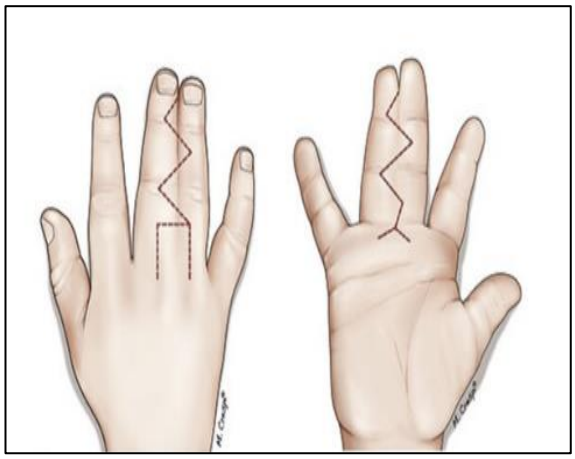

Figure 2. Z-plasty Technique[4]

Figure 3. Maximal Interdigiti Abduction 6 days post-surgery

Figure 4. Maximal Interdigiti Abduction 10 days post-surgery

Figure 5. Maximal Interdigiti Abduction 17 days post-surgery

DISCUSSION

Syndactyly is interdigiti soft tissue and/or osseous fusion or adhesion and may affect hand and/or foot. Syndactyly is caused by congenital or acquired.(2) Acquired syndactyly is a rare disease that may caused by trauma, inflammation, or infection around finger.(3,6) Mechanism of acquired syndactyly is unknown. Adhesion may happen because imbalance between fibrin production and fibrinolysis. Post-surgical hypoxia is common, cause decrease fibrinolysis activity and induce fibroblasts to produce profibrinolytic factors like TGF-beta dan collagen type I.(9) Fischer et al (2020) showed that post-operative adhesion happens because of broad mesothelial protrution that lead to matrix deposition and transmit adhesion stimulation. They also identified molecular cytoskeleton effector and calcium signaling that initiate adhesion.(5) There is no previous research about association of history keloid and acquired syndactyly or adhesion.

Previous case report by Lucretya et al (2022) showed syndactyly acquired case from history of burn injury that caused fusion in first to forth digiti pedis.(3) In this case, patient had simple incomplete acquired syndactyly in third and fourth digiti manus sinistra after operative procedure 21 years ago. Patient was diagnosed clinically. It was simple because from palpation there was no bone fusion and incomplete because the fusion was not along the finger. Radiology examination was not be done in this case. Radiology assesment like x-ray and MRI may be used to evaluate bone or other parts fusion of finger.(2)

The therapy may be operative or non-operative depend on indication.(2) Surgery procedure may be done if there is functional impairment and aesthetic cosnsideration. In case that mild, not cause functional impairment, complex syndactyly with risk further functional impairment with attempted separation, or medical condition that preclude procedure, surgery procedure is not recommended.(7)

The aim of surgery procedure is to make normal finger space and improve the appearance and function of the finger. In mild to moderate case, simple z-plasty, four-flap-z-plasty, and double-opposing-z-plasty techniques may be used and give excellent outcome. Most of surgeons prefer

zigzag pattern that described by Cronin in Figure 2 with flexor and dorsal surfaces incision.(7) The benefits of this technique are prevent contracture that may caused by straight scars, decrease the length of scar, realign malposition tissue, close the cutaneous defect, and reduce stenosis.(7) Indication of surgery in this case is patient got functional impairment from this abnormality to do his daily activity as a baker. Z-plasty technique was used in this case and showed good outcomes that be know from three times of follow up.

There are also another techniques like Sharma's method that uses straight incision followed by skin flaps. Open finger technique uses modified of zigzag incision with longer and narrower angle flaps so that there is area that left open, but this technique is not recommended because high risk of secondary cicatrix complication that cause contracture. Lack of soft tissue coverage in severe case can use skin grafting with modified flatt technique, V-Y and rectangular flap combination, dorsal omega flap, flatt technique, M-V flip, and reverse W-M flap. In this case, the surgeon did not do skin graft.(7) One of syndactyly release complication is keloid formation.(8) Acquired syndactyly need to get more attention to improve surgery technique and more researches about the risk factors (like history of keloid) and pathophysiology.

CONCLUSION

Acquired syndactyly is a rare disease that usually caused by trauma, inflammation, or infection around the finger. This abnormality may affect aesthetic and functional impairment, so that acquire syndactyly need to get more attention to improve surgery technique and more researches about the risk factors and pathophysiology.

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CONFLICT OF INTEREST AND FUNDING RESOURCES

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