Reconstruction of a congenitally absent flexor pollicis longus in an adult

Negin Shamsian MbChB MRCS¹, Rebecca Exton MBBS MRCS², MM Shibu MBBS FRCS FRCS(Plast)³

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Congenital absence of the flexor pollicis longus (FPL) is an unusual finding that is frequently associated with thumb hypoplasia. Isolated FPL absence is the rarest of the congenital thumb anomalies. The present article describes a patient with a congenitally absent FPL, and discusses the chosen method of reconstruction.

Key Words: Absence; Congenital; Flexor tendon; Hand; Reconstruction; Silicon rod

Congenital absence of the flexor pollicis longus (FPL), associated with hypoplasia of the thumb, is an unusual anomaly. The first report of agenesis of the FPL was made by Froment in 1895; it was associated with lumbrical anomalies, absent thenar muscles and absent flexor digitorum superficialis. Tsuchida et al (1) were the first to report a case of FPL absence with no other anomalies, which is the rarest of the congenital thumb anomalies (1-3). The present paper reports a case of congenital absence of the FPL without hypoplasia or aplasia of the thumb and thenar muscles, which is very rare. It has also been reported by Arminio (4) in a six-year-old child.

CASE PRESENTATION

A 38-year-old right hand-dominant publisher and musician presented to the senior author's hand surgery outpatient clinic with poor pinch grip in the right thumb. This had been a longstanding, but compensated problem. She had no other medical issues.

Her physical examination demonstrated a crease at the interphalangeal joint, and an absence of active thumb flexion; however, passive flexion was present at the interphalangeal joint. All other movements were normal. A diagnosis of an absent FPL was made, and the patient was prepared for the first stage of a two-stage reconstruction. The skin incisions were made as shown in Figure 1, and the right FPL was explored through the incisions. A residual distal stump was visualized. A silicon rod was inserted in the fibro-osseous sheath, as shown in Figures 2 and 3. Figure 4 shows the A1 pulley reconstruction that was performed using the extensor retinaculum.

A second-stage reconstruction was performed six months later. The flexor digitorum superficialis (FDS) was harvested from the right ring finger and divided at the FDS chiasma and attached to the silicon rod, which was later removed. A Pulvertaft repair was performed using 5-0 prolene to the residual FPL stump.

The patient was examined by the senior author and was found to have made an excellent recovery. She had a powerful

La reconstruction d'un muscle fléchisseur du pouce absent depuis la naissance chez un adulte

L'absence congénitale du muscle fléchisseur du pouce (MFP) est une constatation inhabituelle, souvent associée à une hypoplasie du pouce. L'absence isolée du MFP est la plus rare des anomalies congénitales du pouce. La présente étude décrit le cas d'un patient présentant une absence congénitale du MFP et expose la méthode de reconstruction sélectionnée.

Figure 1) Skin incisions

right thumb, and interphalangeal flexion of 50° as shown in Figure 5.

Surgical treatment for the transfer of the ring finger FDS tendon to provide the thumb interphalangeal joint with flexion resulted in a significant improvement in pinch.

DISCUSSION

Urchida et al (5) proposed the following classification for congenital FPL anomalies:

- Without thenar muscle hypoplasia
 - Absence
 - Anomalous insertion
 - Abnormal connection
- With hypoplasia of the thenar muscles

¹Plastic, Reconstructive and Hand Surgery, Stoke Mandeville Hospital, Aylesbury, Buckinghamshire; ²Plastic, Reconstructive and Hand Surgery, Salisbury District Hospital, Salisbury, Wiltshire; ³Plastic, Reconstructive and Hand Surgery, The Royal London and St Bartholomew's Hospital, London, United Kingdom

Correspondence: Dr Negin Shamsian, 42 Mountfield Gardens, Gosforth, Newcastle Upon Tyne NE3 3DD, United Kingdom.
Telephone and fax 0191-285-4901, e-mail shamsiann@gmail.com

Figure 2) The proximal flexor pollicis longus stump

Figure 3) Insertion of a silicone rod into the fibro-osseous sheath

- Absence
- Malposition

The etiology of these anomalies is unknown, although some have proposed the absence of the recurrent branch of the median nerve as a hypothesis for the FPL absence in association with the absence of the intrinsics (6). The differential diagnosis of FPL absence includes trigger thumb, stenosing tenosynovitis, FPL rupture and partial paralysis of the anterior interosseous nerve (3).

The treatment is FDS tendon transfer to the ring finger. Reports vary regarding the degree of postoperative active flexion achieved, ranging from 10° to 35°. Patient cooperation

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Figure 4) The pulley reconstruction

Figure 5) Postoperative result

with postoperative physiotherapy is a major factor in the outcome following FDS transfer.

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