CASE REPORT

Postinfective skin contracture: a rare cause of fifth metatarsophalangeal joint subluxation

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SUMMARY

Dislocation or subluxation of the metatarsophalangeal joint (MTP) is common and usually follows a traumatic event. Non-traumatic causes usually include inflammatory arthritis (rheumatoid arthritis), connective tissue disorders, crowded footwear or flexor digitorum longus tendon contracture. We present a very unusual case of subluxation of the fifth MTP joint following a postboil skin contracture. The case was treated with the release of contracture by Z-plasty. It resulted in concentric reduction of the joint and normal skin healing.

BACKGROUND

Dislocation or subluxation of the metatarsophalangeal joint (MTP) is common and usually follows a traumatic event.¹ Non-traumatic causes usually include inflammatory arthritis (rheumatoid arthritis), connective tissue disorders, crowded footwear or flexor digitorum longus tendon contracture.² We present a very unusual case of subluxation of the fifth MTP joint following a post-boil skin contracture. The case was treated with the release of contracture by Z-plasty. It resulted in concentric reduction of the joint and normal skin healing. The case was followed for 6 months with no recurrent subluxation.

CASE PRESENTATION

A 45-year-old female patient presented with a skin contracture on dorsum of the left foot causing an exaggerated dorsiflexion of 2-month duration of the fourth and fifth digits. The patient now had presented due to difficulty in wearing shoes (Figures 1 and 2).

On history, the patient reported developing a pustule which grew in size to about 1 cm by 1.5 cm and then burst spontaneously. The skin later healed with scar tissue that slowly contracted leading to mild dorsiflexion deformity of the fourth and marked deformity of the fifth MTP joint.

On examination, there was a 2.5 cm by 1 cm scar over the fourth and fifth MTP joints on dorsum of the foot healed by secondary intention. The fourth MTP joint was supple and reducible to its normal position but the fifth MTP joint was rigid and fixed in its position of dorsiflexion and the scar tissue was unyielding.

INVESTIGATIONS

Blood investigations were normal with haemoglobin 12.4 g% and total leucocyte count of

Figure 1 Clinical photograph showing scar contracture with fixed dorsiflexion of fifth metatarsophalangeal joint.

6300/mm³. C reactive protein was not raised and erythrocyte sedimentation rate was 12 mm/h. Blood sugar was not elevated. Anteroposterior and oblique X-rays were ordered which showed a dorsal subluxation of the fifth MTP joint with no evidence of an arthrosis (Figures 3 and 4).

Figure 2 Clinical photograph showing scar contracture with fixed dorsiflexion of fifth metatarsophalangeal joint.

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Figure 3 Anteroposterior and oblique X-ray showing subluxated fifth metatarsophalangeal joint.

Figure 5 Clinical photograph after Z-plasty.

Figure 4 Anteroposterior and oblique X-ray showing subluxated fifth metatarsophalangeal joint.

TREATMENT

The patient was taken for surgery. The scar tissue was excised and skin was lengthened using the Z-plasty technique. The underlying tendons were found normal. The joint was concentrically reduced to its normal position and fixed with a k-wire. A below-knee slab was given for 2 weeks (Figures 5–8).

Figure 6 Clinical photograph after Z-plasty.

Figure 7 Postoperative X-ray showing concentrically reduced joint and K-wire *in situ*.

OUTCOME AND FOLLOW-UP

The postoperative course was uneventful. The sutures were removed at 2 weeks. K-wire was removed at 3 weeks and passive and active range of motion exercises were started. The joint remained reduced and the patient reached the preinjury working status in 4 weeks.

DISCUSSION

The dislocation/subluxation of MTP joints is common; however, we found no reported cases of subluxation following only skin contracture after an infection. The case presented here had contracted skin which held the joint in a subluxated

Figure 8 Postoperative X-ray showing concentrically reduced joint and K-wire *in situ*.

position. There are reports of subluxation/ dislocation following a contracture of the flexor digitorum profundus tendon which was not found in our case.³ Similarly, reports on extension contracture following surgery have been mentioned but usually do not cause joint subluxations.⁴ Since the cause of subluxation was skin shortening, lengthening was carried out using the Z-plasty technique. Since the skin on dorsum was pliable, it could be stretched to provide extra length. Similar release of contracture has been carried out in other scar tissue following surgeries of hammer toe.⁴

Contributors JP gave the idea for the manuscript and was involved in the preparation of the manuscript and collection of data. AM gave the idea for preparation of the manuscript and contributed in the final proof reading of manuscript.

Competing interests None.

Patient consent Obtained.

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Learning points

This case shows a variety of unusual findings:

- ▶ A simple furuncle may lead to an unsightly scar causing an unyielding rigid tissue.
- ▶ It shows a rare cause of joint subluxation due to scar tissue involving skin.
- ▶ Z-plasty is an effective technique performed on dorsum of the foot for dealing with scar contracture.

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