Objective

The technical instruction leaflet for collagenase injection in the treatment of Dupuytren’s contracture recommends a “2-3mm depth” of injection\(^1\), however, there is little supporting evidence. We consider that collagenase injection into the middle of the cord is optimal to avoid the possible complications of skin laceration or flexor tendon rupture. This study investigated using the long axis images of ultrasonography as a tool to determine the appropriate injection depth.

Methods

Sixteen male patients with Dupuytren’s contracture with a mean age of 72.2 years (range; 57-87 years) were included in this study. We marked the collagenase injection point on the skin above the cord before injection (Figure 1). Then we measured the distance from the skin to the middle of the cord by high resolution ultrasonography with long axis images (SNiBLE; Konica Minolta, Tokyo, Japan)(Figure 2). We measured the distance of the skin to the cord (A) and the width of the cord (B). The optimal depth of the injection was defined as C=A+B/2.

Results

The averaged (A) was 1.00±0.43 mm (range; 0.4-2.0mm) and (B) was averaged 2.88±0.82 mm (range; 1.5-4.4mm). The averaged (C) was calculated 2.45±0.38 mm (range; 1.8-2.95mm).

Discussion

Injection to the optimal depth is very important not only to obtain the maximum performance of collagenase but also to avoid possible complications. Skin laceration may occur if the injection is too shallow or flexor tendon rupture may occur if the injection is too deep. By using ultrasonography, we demonstrated that the distance from the skin to the middle of the cord was comparable to that described in the technical manual for the CCH injection namely “2-3mm depth injection is recommended”. Using long axial images was practical for the measurement of the three injection points at one time. However, we consider that case by case measurement is important to avoid complications and is simple to perform.

Conclusion

The optimal depth of collagenase injection is determined by the use of ultrasonography.