

팔꿈치 질환을 위한 Healthcare System

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Healthcare System for Elbow Disease

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요 약

본 논문에서는 일반적인 팔꿈치 질환에서 Flexion과 Extension의 이상에 대해 논의한다. 또한 이를 헬스케어 시스템과 연동하여 의료 정보를 공유하도록 한다.

ABSTRACT

In this paper, we discuss the abnormalities of flexion and extension in common elbow diseases. In addition, it is linked with the healthcare system to share medical information.

키워드

healthcare system, flexion and extension, abnormalities, medical information

I . Introduction

[1] describes the architecture of the Patient Centered Research Results Institute (PCORI) for the clinical data research network of the Healthcare Management System (SCILHS, <http://www.SCILHS.org>). The network leverages \$ 48 billion of federal investment. Enables semantic data models that can be queried in 10 health systems targeting over 8 million patients, universally cared for, and evidence and discovery generated to enable clinicians and patient participation while meeting patients Medical information technology (IT). The Architecture of the Scalable Collaborative Infrastructure for a Learning Healthcare System (SCILHS) is detailed in Fig. 1.

II . Elbow Flexion

Elbow flexion is an elbow test procedure for the forearm tunnel syndrome test. The cubital tunnel is an important pathway for the ulnar nerve when it p

asses behind the elbow. Admission and trauma are the main causes of bilateral tunnel syndrome, and sensations and tingling symptoms in this area may only appear in a few years.

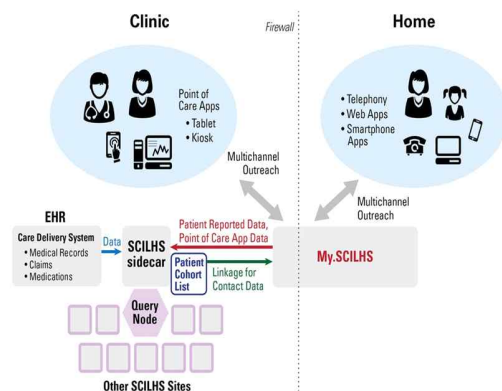


Fig. 1. Architecture of SCILHS

The patient should be awake and be cooperative in elbow flexion testing. Elbow flexion is shown in Fig. 2.

- 1) The patient makes the elbow 90 degrees.
- 2) The bottom of the hand should face upward.
- 3) The patient should have his / her elbow fully bent by raising his / her hand.
- 4) The examiner instructs the patient to remain in position for a maximum of 1 to 3 minutes.
- 5) The inspector examines the patient for a few minutes. He can apply gentle pressure to increase elbow flexion.
- 6) At this time, the angle should be 130 ~ 145 degrees.
- 7) If the angle is too small or accompanied by pain, it is called cubital tunnel syndrome.

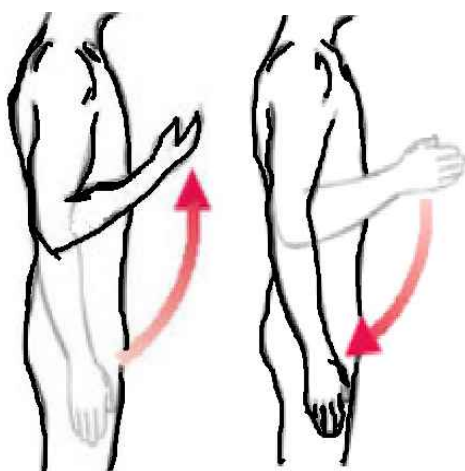


Fig. 2 Flexion and Extension of Elbow

III. Elbow Extension

If there is an exudate or a bodily fracture, the entire extension of the elbow is blocked. According to several studies, elbow expansion testing is a fast and reliable test that excludes potential fractures.

The patient should be awake and be cooperative in the elbow dilation test. Elbow extension is shown in Fig. 2.

- 1) The patient makes an elbow 90 degrees.
- 2) The bottom of the hand should face up.
- 3) The patient pulls his / her hand down completely.
- 4) The examiner instructs the patient to hold the posture for a maximum of 1 to 3 minutes.
- 5) The inspector examines the patient for a few minutes. He can apply gentle pressure to increase elbow flexion.
- 6) At this time, the angle should be 0 ~ -5 degrees.

ees.

- 7) If the angle is too small or painful, it is called potential fractures.

IV. Experiments

In this study, we conducted experiments with 100 general people in their 50s. Personal information, the flexion angle, the extension angle, and date of whether a person felt pain were entered. It didn't matter even with all three types or with more than (equal) one. For reference values, flexion was set between 130 degrees and 145 degrees, and extension was set between 0 degrees and -5 degrees. The experimental result was shown in Table 1.

| Total persons | Flexion angle | | Extension angle | | Accompanied with pain | Note |
|----------------------------|---------------|---------------|-----------------|---------------|-----------------------|---|
| | Large | Small | Large | Small | | |
| Person (Total persons: 88) | 3 | 17 (Pain : 4) | 4 | 23 (Pain : 2) | 6 | If accompanied with pain: flexion: extension both treated |
| Percentage | 3.4% | 19.3% | 4.5% | 26.1% | 6.8% | |

V. 결론

본 논문에서는 일반적인 팔꿈치 질환에서 Flexion과 Extension의 이상에 대하여 알아보았다. 팔의 각도와 고통 여부에 따라 질병을 각각 분류하였다. 또한 헬스케어 시스템과 연동하여 의료 정보를 공유하였다.

References

- [1] Mandl, K. D., Kohane, I. S., McFadden, D., Weber, G. M., Natter, M., Mandel, J., ... & Adams, W. G., "Scalable collaborative infrastructure for a learning healthcare system (SCILHS): architecture," *Journal of the American Medical Informatics Association*, Vol. 21, No. 4, pp. 615-620, 2014.