

4th International Conference on **Nursing & Healthcare**

October 05-07, 2015 San Francisco, USA

Positional relationship between nerves and arteries in the cubital fossa during venipuncture: An ultrasound image-based study

Akiko Hara¹, Junko Matsuo¹, Toshimi Kawakita¹, Fumiko Michishige¹ and Koichi Yabunaka²

¹Osaka Medical College, Japan

²Tokyo University, Japan

Objectives: The present study aimed to determine the positional relationship between the cutaneous veins, nerves and arteries in order to perform venipuncture safely.

Methods: The study included healthy adults (in their 20s to 50s) and was performed between May 2012 and March 2013. Data were collected by imaging the minor axis of the cubital fossa (Hueter's line) after performing a vascularization at 10 cm on the proximal side from the cubital fossa. The diagnostic ultrasound device Xario (Toshiba Medical Systems Corporation) was used and the terminal was of a linear type with a frequency of 9 MHz.

Results: The study included 10 participants (4 men and 6 women) with a mean age of 36.5 ± 7.33 years, an average height of 161.9 ± 6.90 cm and a mean body weight of 58.9 ± 9.62 kg. The mean diameter of the cubital fossa was 23.5 ± 2.08 cm. In all the participants, the median cubital vein, brachial artery, median nerve and radial nerve were identified. The distance between the skin surface and median cubital vein was 1.9 ± 1.03 mm, between the median cubital vein and brachial artery was 11.0 ± 6.32 mm and between the radial nerve and median cubital vein was 5.9 ± 4.16 mm.

Discussion: The results showed that the brachial artery and median cubital vein were side-by-side and parallel to each other, whereas the radial nerve was deeply located. This further confirmed the need to be careful in deep regions with respect to the radial nerve and among the blood vessels located nearby with respect to the brachial artery. Veins and arteries may be close to each other in some people. In patients whose veins are difficult to puncture, performing venipuncture under echographic observation may help minimize complications such as nerve damage and accidental arterial puncture.

Biography

Akiko Hara is an Assistant Professor at Faculty of Nursing, Osaka Medical College. Her research interests include nursing practice and clinical judgment. Her current research project is concerned with the safe taking blood method.

akiko03@art.osaka-med.ac.jp

Notes: