Which arm do we use for bleeding of blood donors

Has it influence on the occurrence, kind and outcome of complications ?

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Background:

Occurrence of complications related to blood donation could depend on arm and vein used for the bleeding. However the basic information on the site normally used for punctures without complication is not available.

Aim:

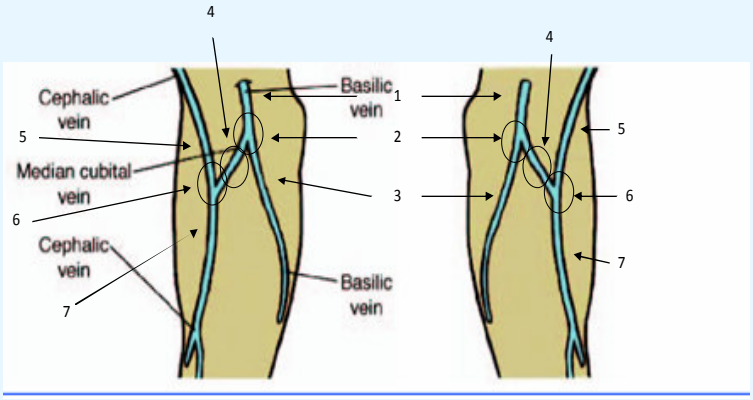
To determine the occurrence of complications when different veins in each arm are used for the bleeding.

Methods:

Donations without complications: In a series of uncomplicated single unit whole blood donations in our centre, arm and vein used for donation was registered in a figure.

Donations with complications: Data on venepuncture site of donations with a local complication were obtained from the standardised scheme used for reporting complications related to blood donation in Denmark. This standard scheme includes the above mentioned figure. Reports from 2008-2009 were categorised according to the international standard.

The figure was afterwards divided into 7 areas and the number of venepunctures in each area was counted.



Results:

Data on the arm used in bleedings without complication of 386 donors showed that 257 (67%) had been punctured in the right arm and 129 in the left, given a two to one ratio of right to left arm donors and $p < 0.0001$ (sign test, found compared to expected (probability 0.5)).

The bleedings with complication consisted of 75 right and 69 left arm punctured. This one to one ratio between right and left arm is significant different from the two to one ratio in uncomplicated donations (p=0.002).

Analysis of data for the areas with vein used for puncture in donations with and without complication showed that the surplus of left side bleedings with complication were due to a higher occurrence of punctures in area 4 with vena mediana (29 of 53 and 36 of 134 bleedings with and without complication, respectively (p=0.0006)).

Discussion:

Blood donors without a local complication are punctured more often in the right than in the left arm. The reason could be that the veins in the right arm, in right handed persons, are bigger than the corresponding veins in the left. Another reason could be that, as most people are right handed and prefer to use their right hand to do the venepuncture, this is more convenient when standing on the donors right site and insert the needle in the right arm.

On the contrary, donors with a local complication are more often punctured in the left arm than donors without a complication. The reason could be that, it is inconvenient for right handed phlebotomists to perform the venepuncture in the left arm of the donor, and that the smaller veins are more difficult to puncture.

Beneath the median part of the median vein lays the median nerve with many small branches. Therefore, use of this vein for the bleeding will increase the risk of nerve injuries by the needle or by pressure from a haematoma.

Conclusion:

A general preference for use of the right arm for venepuncture of blood donors was found in our centre.

Furthermore, a preliminary analysis suggests that the occurrence of local complications related to blood donation depends on the arm and vein used for the donation.

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