In intravascular brachytherapy, either photon or electron emitters are used in a linear arrangement so that blood vessels of 2-4cm lengths can be treated. To investigate the dose uniformity and the range of doses various components of the blood vessel receive, dose distributions were calculated on a 2cm long cylindrical blood vessel of 2mm radius. The radioactive sources of ^{192}Ir, ^{125}I, ^{103}Pd, ^{188}Re, ^{32}P, and ^{90}Y/Sr were studied. All the sources were assumed to be in the form of line and 3cm long. It was found that electron emitters provided more uniform dose longitudinally than photon emitters. Uniformity, defined as the ratio of minimum and maximum dose, ranged from 0.99 to 1.00 for the three electron emitters and ranged from 0.93 to 0.94 for the three photon emitters when the source was placed isocentrically. On the other hand, if the source was off-centered during treatment, the uniformity around the blood vessel became increasingly worse as the off-center distance increased. The uniformity was worse for off-centered electron emitters than the photon emitters. For example, if the off-center distance was 1mm, the uniformity in the central plane was 0.30, 0.30, 0.28, 0.14, 0.10, and 0.16 for ^{192}Ir, ^{125}I, ^{103}Pd, ^{188}Re, ^{32}P, and ^{90}Y/Sr sources, respectively; and the maximum dose could be over 300% of the prescription dose while the minimum dose could be as low as 32% of the prescription dose.