In most cases (99.1%), the renal arteries originate from the abdominal aorta. Nowadays, there is no common opinion on the cause of accessory renal artery emergences. Felix described that in an 18-mm fetus, the developing mesonephros, metanephros, and the suprarenal glands are vascularized by nine pairs of arteries that take origin from the dorsal aorta and that can be divided into cranial (1st and 2nd), middle (3rd to 5th), and caudal (6th to 9th) arteries. Thus, failure to reduce the number of arteries results in accessory renal vessels. The incidence of accessory renal arteries varies and does not depend solely on the study method. Depending on the population, the incidence of accessory renal arteries ranges from 4% (Malaysia) to 61.5% (Brazil). The incidence can also be very variable in countries with ethnic heterogeneity. The Republic of Moldova is a multinational country, which means that the incidence of accessory renal arteries can vary in a wide range depending on the nationality. In countries that are geographically close to the Republic of Moldova, namely Ukraine and Romania, the incidence of accessory renal arteries is 31.8% and 19.9%, respectively. Based on the data from the literature, more than one accessory renal artery is a rare finding. According to Jamkar and coworkers, this variant was found in 3.77% of specimens on the left side and 4.71% of specimens on the right side. Several authors consider that accessory renal arteries are more frequent on the right side than on the left (p = 0.01). Usually, the diameter of the main renal artery in this case is smaller. It should be noted that variants of developmental variants of the renal arteries (in particular, accessory arteries) are often associated with other developmental variations of vascular supply.