

Surgical significance of brachial arterial variants in a Kenyan population

Abstract:

Background: Knowledge of the variant anatomy of the brachial artery is important in radial arterial grafts for coronary bypass, percutaneous trans-radial approach to coronary angiography, angioplasty and flap surgery. These variations show ethnic differences but data from black populations are scarce. This study therefore describes the course in relation with median nerve, level and pattern of termination of brachial artery in a black Kenyan population. **Methods:** This was a cadaveric dissection study of 162 upper limbs at the Department of Human Anatomy University of Nairobi, Kenya. The brachial artery was exposed entirely from the lower border of teres major to its point of termination. The course in relation to the median nerve and the level of termination were recorded. The results were analyzed using SPSS version 17.0 for Windows. **Results:** 72.2% of the brachial arteries followed the classical pattern described in Gray's Anatomy. Superficial brachioradial and superficial brachial arteries were present in 12.3% and 6.1% of the cases respectively. Brachial artery terminated at the radial neck in 79% of the cases, radial tuberosity (8.6%), and proximal arm (11.1%), mid arm (1.2%). Pattern of termination was either a bifurcation into the radial and ulnar arteries (90.1%) or trifurcation into radial, ulnar and common interosseous arteries (9.3%). We also report a case of trifurcation of the brachial artery into the profunda brachii, radial and ulnar arteries (0.6%). **Conclusion:** Variations of the brachial artery in its relationship with the median nerve, level and pattern of termination are common. These may complicate arm surgical exposures, flap and vascular surgery. Pre-operative angiographic evaluation is recommended.