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PICA END VERTEBRAL ARTERY AS POTENTIAL RISK FACTOR OF CERVICAL SURGERY: RELATION BETWEEN FREQUENCY AND DIAMATER OF VERTEBRAL ARTERY

Introduction

Vertebral artery(VA) injury exists in cervical spine surgery. Typically, both VA configure basilar artery(BA), cover posterior circulation. So one side VA injury doesn't result in posterior circulation ischemia. And dominant VA is advocated to be paid attention to preserve. Oppositely the risk of non-dominant side injury isn't advocated, it is not clear whether safe or not. There is PICA end VA, that doesn't unite the other side and ends as PICA. Injury of such type of VA possibly leads to cerebellar infarction. Features of PICA end VA is described.

Materials and Methods

Consecutive 367cases of head and neck MRA were taken. The purpose of taking MRA were for acute and chronic stroke, tumor, simply medical check-up, etc. Diseases which alter normal anatomy, were excluded. Diameter of VA was mesured at V2 portion. If non-domonant side VA was less than 3/4 to dominant side, it was classed as asymmetric. Epidemiological fact, relation between laterality, diameter and frequency of PICA end VA was analysed.

Results

358cases were included in this study. They were 207male and 151female, age were 10-94(67.8±13.8). As typical, both VA configure BA in 296cases(82.7%). PICA end VA were in 44cases(12.3%). And in 18cases(5.0%), one side VA were abscent. VA were symmetric in 194cases(54.2%). And in 164cases(45.8%), it were asymmetric. Diameter of all VA were 3.2±0.76mm. Diameter of PICA end VA were 2.0±0.55mm, which were significantly smaller than non-dominant but not PICA end VA, 2.8±0.59mm. 38/44cases(86.4%) were less than 2.5mm. Among VA less than 2.0mm, 26/56cases(46.4%) were PICA end VA. PICA end VA were only 4cases(2.1%) in symmetric VA, 40 of 146cases(27.4%) in asymmetric(except 18cases of one side VA). And if dominant side is more double than the other, 55.9% were PICA end VA.

Conclusions

It is not clear that injury of PICA end VA result in cerebellar infarction, and no such case was reported. Even so, non-dominant VA also should be preserved since potential risk exists. From present study, PICA end VA is not rare. In case of VA asymmetry, and thin VA, the possibility of PICA end VA should be recognized.