

C12.

Morphological Variations of the Papillary Muscles of Mitral Valve in
Normal Human Hearts

Udhayakumar, S.¹ and Yasawardene, S.G.²

¹ *Department of Anatomy, Faculty of Medicine, University of Jaffna*

² *Department of Anatomy, Faculty of Medical Sciences, University of Sri Jayewardenepura*

Rapid advancement of mitral reconstructive surgery and the recent progress in homograft replacement of the diseased valves requires the detailed morphology of the normal mitral valves and papillary muscles. The morphology of papillary muscles were studied in 320 fresh autopsied normal hearts. Number of muscle bellies, geometric arrangement of muscle bellies, relationship between muscle bellies and chordal distribution were investigated.

Anterolateral and posteromedial group of papillary muscles were found with varying number of muscle bellies. Single belly was the commonest form in the anterolateral group (73%) and two bellies were the commonest form in the posteromedial group (40%). According to the relationship between papillary muscle- chordate- leaflet unit, four groups were categorized. Group 1 includes the single belly papillary muscles and any shape. In group 2 the muscle belly is cleaved either insagittal or coronal plane into two and if in a sagittal plane, a single belly always supports the posterior leaflet and if in coronal plane, the head lying posteriorly supports the commissural region and the other leaflets. In group 3, having three muscle bellies, one supported the commissural region, second the anterior leaflet and third the posterior leaflet. Group 4, where there were more than three muscle bellies was the complex.

The documented classical view of two papillary muscles should be adapted with four types of variations in morphology with increasing complexity. Thus the wide variations in mitral papillary muscles need consideration in mitral valve replacement and homograft implantation.

Keywords: Heart, Mitral valve, Papillary muscle, morphology