

Significance of Coronary Artery to Pulmonary Artery Fistulae in Takayasu Arteritis

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In this issue of *Indian Journal of Cardiovascular Disease in Women*, Moode et al¹ present the clinical and imaging features of a series of patients with Takayasu arteritis (TA), with special focus on coronary artery involvement and the presence of coronary artery-pulmonary artery fistulae.

Takayasu arteritis was originally classified by Ueno et al² in 1967 into three main types. Type IV was added by Lupi et al³ when there was associated pulmonary artery involvement, and type V was added by Panja et al⁴ when there was associated coronary artery involvement. However, the classification by Ueno et al and the later additions have been largely supplanted by the system proposed by Numano's group^{5,6} in which there are five main types of TA (type II being divided into subtypes a and b) and in which associated pulmonary and coronary artery involvements are indicated as P (+) and C (+), respectively.

Angiographic Classification of Takayasu Arteritis (Numano)^{5,6}

- Type I—Only branches of aortic arch involved.
- Type IIa—Ascending aorta and/or aortic arch involved +/- branches of aortic arch.
- Type IIb—Descending thoracic aorta +/- type II a distribution. Abdominal aorta not involved.
- Type III—Descending thoracic aorta and abdominal aorta and/or renal arteries involved.
- Type IV—Abdominal aorta and/or renal arteries involved.
- Type V—Generalized type with combined features of the other types.

Note: Involvement of the coronary or pulmonary arteries is indicated as C (+) and P (+), respectively.

Coronary involvement in TA has varied from 8 to 38% in various series and most commonly affects the ostial and proximal segments of the coronary arteries.^{7–9} Computed tomographic (CT) angiography reveals coronary artery involvement in a higher proportion of TA patients (44–53%).^{10,11} At Christian Medical College, Vellore, 91 (18.0%) of 505 TA patients

who underwent conventional coronary angiography over a 23-year period had evidence of coronary artery involvement; presence of coronary artery-pulmonary artery fistulae was not classified as a coronary artery abnormality in this series.

Demonstration of systemic artery-pulmonary artery communications in TA in the absence of other causes of a shunt is strongly suggestive of pulmonary artery involvement.¹² Such communications may arise from internal mammary, bronchial, lateral thoracic, intercostal, and coronary arteries.^{12–17} Development of these communications is considered to be secondary to pulmonary involvement with reduced perfusion pressure in the affected part of the lung.¹⁸ Pulmonary angiography in the two patients presented in the current report could have shed more light on this aspect. In any case, presence of coronary artery-pulmonary artery fistulae in TA is reflective of pulmonary involvement and is not a primary pathology of the coronary arteries; therefore, rather than classifying such fistulae as a subtype of coronary artery involvement in TA, it may be more appropriate to consider this as pulmonary involvement with systemic collaterals and designate it P (+) with systemic collaterals. Endo et al,⁷ however, classified the presence of coronary artery-pulmonary artery fistulae as a coronary artery abnormality of TA, underscoring the fact that there is no uniformity in the nomenclature used by different workers.

Conflict of Interest

None.

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